2000 Yukon North Slope Conference
'The Challenge of Change'
Summary Report

Forward

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 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 sixth Yukon North Slope Conference, which was held in Whitehorse, Yukon September 18 – 20, 2000. It is not intended to serve as an official or formal record of the 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 IIII is a list of acronyms.

As stipulated in the Inuvialuit Final Agreement, the Yukon Government hosted the Yukon North Slope Conference. A very special thanks to Thomas Berger, O.C., Q.C. who generously agreed to chair the conference. Appreciation is also extended to the presenters, facilitators, organizers, rapporteurs and the many other people whose help made the conference a success.

Welcoming Remarks

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

Welcome everybody, my name is Lindsay Staples. I'm the chair of the Yukon Wildlife Management Advisory Council for the North Slope. It's my job to initiate or open the door to the afternoon's proceedings.

It's a real thrill to see so many people out for this conference. This is the sixth one, and I'm delighted that people were able to come from far and wide to make the session. In opening the session, I'd like to call on the Honorable Dale Eftoda, Minister of Renewable Resources, to get us underway and to introduce the conference chair.

Honourable Dale Eftoda
Minister of Renewable Resources, Yukon Government

As Minister of the Department of Renewable Resources for the Government of Yukon, it is a pleasure for me to be here to welcome all participants to the 2000 Yukon North Slope Conference.

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

These conferences reflect a commitment to ensure ongoing public discussion on coordinating management initiatives on the Yukon North Slope, and provide a valuable opportunity to share information and perspectives that may help to meet shared management objectives.

The theme of this years conference, "The Challenge of Change", is a timely one as much has changed on the Yukon North Slope since the signing of the Inuvialuit Final Agreement in 1984:

- there is a renewed interest in hydrocarbon exploration and development in the Beaufort Sea region;

- climate change is a major issue of national importance, and potential effects to the North have raised public concern;

- the way wildlife research is conducted is changing from species specific research to more ecosystem-based research;

- local communities are playing a much stronger role in resource management through increased participation in wildlife management and research decision making processes;

- wildlife, habitat and protected areas management is carried out through a collaborative approach, based on partnerships of resources users, land claims beneficiaries and government agencies.

Since the last conference in 1997, Yukon has been working in a number of areas that relate to the Yukon North Slope.

In 1998, the Yukon Government proclaimed the *Act to Amend the Wildlife Act*. This Act brings the *Wildlife Act* into conformity with the IFA and was the result of the cooperative efforts of Government of Yukon, the Inuvialuit Game Council, the Wildlife Management Advisory Council (North Slope) and the Aklavik Hunters and Trappers Committee. This legislative change was a major step in implementation of the IFA.

The Department of Renewable Resources continues to change the way it does business by providing a more regional focus on decisions that affect local communities. This occurs through community consultation, by hiring field workers locally when possible and through continued participation on the Wildlife Management Advisory Council (North Slope).

Something that you will be discussing in the next couple of days is climate change. As you are no doubt aware, current research suggests that the greatest change to the world's climate will occur in the northern latitudes, making areas like the Yukon's North Slope particularly vulnerable. The Yukon government is taking action on climate change through several programs including the Green Power Initiative, the Energy Efficiency Initiative, and Commercial and Residential Energy Management Programs.

In addition, the government is working locally and nationally through partnerships such as the recently established Northern Climate Exchange, and we are participating on national committees such as the National Air Issues Steering Committee and the Canadian Council of the Ministers of the Environment to develop strategies and action plans to address climate change.

In November I plan to join the Canadian delegation in attending the sixth session of the Conference of the Parties since the Climate Change Convention which was signed nearly ten years ago at the Rio Earth Summit. At this Conference, I hope to be able to meet with other northern leaders to compare notes and to seek consensus on a pan-northern position on climate change.

In 1998 Canada devolved jurisdiction over oil and gas resources to the Yukon Government. There is now a new licensing and permitting regime in place to allow for Yukon based decision making.

We, along with the Council of Yukon First Nations and Canada have been working to develop new Development Assessment Process Legislation for the Yukon. We have been

doing this in consultation with Yukon First Nations and the Inuvialuit. I'm sure this will come up during the workshop on Environmental Assessment on Wednesday morning.

An IFA Implementation Coordinating Committee was resurrected in 1999 with high level officials from the Governments of Canada, NWT, Yukon, the Inuvialuit Regional Corporation and the Inuvialuit Game Council. This group provides a forum for the discussion of those issues that may have had difficulty being addressed at the operational level. This group is proving to be a very helpful communication forum and will continue to meet regularly for the foreseeable future.

In your workshops and discussion 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; as a result, this is a multidisciplinary group. I trust this will translate into some interesting discussions that reflect traditional, local and scientific input. 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 Dale Eftoda
Minister of Renewable Resources, Yukon Government

It is now my pleasure to introduce Mr. Thomas Berger, the Chair of the 2000 Yukon North Slope Conference.

Mr. Berger is known to many of you as having had a significant role in determining the acceptability of a gas pipeline in the North. From 1974 to 1977, under the Liberal government of Prime Minister Pierre Trudeau, Mr. Berger headed the Mackenzie Valley Pipeline Inquiry to determine the social, environmental, and economic impact of the proposed Arctic Gas pipeline to be built from Prudhoe Bay in Alaska across the Arctic coast of the Yukon and south through the Mackenzie Valley to metropolitan centres in the U.S. and Canada.

He held hearings in 35 communities at which more than 1,000 residents, both Native and non-Native, testified; as well he heard the testimony of 300 expert witnesses. In 1977, based on Mr. Berger's recommendation, the Government of Canada rejected the Arctic Gas pipeline proposal and approved an alternate route. Canada adopted Mr. Berger's recommendation to impose a moratorium on major development in the Mackenzie Valley to enable Indian and Inuit land claims to be settled – the Inuvialuit Final Agreement was signed in 1984. Canada also adopted the recommendation to establish a wilderness park in the northern Yukon to protect the Porcupine Caribou – one of the last great Caribou herds of North America – this area is known today as Ivvavik and Vuntut National Parks.

Mr. Berger was also the chair of the second Yukon North Slope Conference in 1990 – the theme of that conference was *"Conservation and Development on the Yukon North Slope: Prospects for the 1990's and Beyond"*. So, it is fitting that he also Chair the 2000 Yukon North Slope Conference *"The Challenge of Change"*.

Ladies and gentlemen, Mr. Thomas Berger.

Opening Remarks by Conference Chair

Thomas Berger, O.C., Q.C.

Friends, I am delighted to be back among you for this 2000 Yukon North Slope Conference and I am even more delighted to be the chair, because that means I can listen and learn.

As the Minister was kind enough to say, I was here a quarter of a century ago. From 1973 to 1977 I traveled throughout the Mackenzie Delta and the Western Arctic to a multitude of communities in the Northwest Territories and the Yukon. When I did that we were in the midst of an energy crisis. The discussion of the future of the North Slope of the Yukon and of course the Mackenzie Delta and the Mackenzie Valley took place against the backdrop of that energy crisis.

The inquiry that I headed was called the Mackenzie Valley Pipeline Inquiry. It was intended to determine the viability of a proposal by the Arctic Gas Pipeline Consortium to build a pipeline to carry natural gas from Prudhoe Bay across the North Slope of Alaska and across the coastal plain of the Yukon. The pipeline would pick up natural gas from the Mackenzie Delta and then proceed south along the Mackenzie valley to Alberta, and then branch out to the great metropolitan centres of North America.

When I came here I discovered there was an energy crisis back home, down South. There was a proposal to build pipelines, the Arctic Gas proposal and the Foothills proposal. But there were also land claims to be considered, the claims of the Indians and the Inuvialuit. There were as well many environmental concerns, perhaps the most prominent then and now being the welfare of the Porcupine Caribou Herd. And may I just remind you that the proposal then was not simply to build a pipeline. The Government of Canada had made it clear that a pipeline would be part of an energy corridor. You would need construction sites and air fields and all the paraphernalia of industrial advance in order to build a pipeline across the coastal plain and indeed in many parts of the Mackenzie valley.

I heard from 300 expert witnesses who testified at Yellowknife, some of them at Whitehorse, and from about 1000 people who lived here in the North, both native and non-native. In 1977 I made my recommendations. I'll just mention what they were, because even though 23 years have passed, they still appear to be relevant to what you will be discussing at this gathering over the next three days.

I urged that there should be no pipeline and energy corridor across the coastal plain or the North Slope of the Yukon. I said that if you wanted to bring the Mackenzie Valley gas south, you could build a pipeline along the valley, provided you took appropriate environmental safeguards. But I recommended that since the claims of the Dene and the Inuvialuit had not been settled, there should be a ten-year moratorium to allow those claims to be settled. People at the time thought that was a decade too long, but it turns out that it took even longer than ten years to settle those claims. And why shouldn't it have

taken as long as was necessary? The settlement of those claims in the Mackenzie valley, and of course here in the Yukon will determine the relationship between native and non-native people in this part of the world for a very long time to come.

You will remember that I said that the alternate proposal by Foothills Pipelines to build a pipeline to bring Prudhoe Bay gas along the route of the Alaska Highway would not encounter any major environmentally-related reasons for not proceeding.

That's where I left this subject 23 years ago. Of course history appears to repeat itself, because some people say we have an energy crisis now, and there are proposals for building pipelines here in the North. There are still, I believe in the North some land claims that haven't been settled and of course, as you folks here know better than I do, we still have some environmental concerns.

In my report, back in 1977, I recommended that Canada should establish a wilderness park in the northern Yukon. The purpose was of course to protect the calving grounds of the Porcupine Caribou Herd along the coastal plain and to protect as well sea birds and other species. The proposal I made was for a park that would encompass the whole of the North Slope of the Yukon and extend beyond the slope to take in the Old Crow Flats. I proposed a park 3.6 million hectares in area. That's 9 million acres. It would have been comparable in size to the Arctic Northern Wildlife Refuge in Alaska, which is contiguous to the Northern Yukon.

I thought that would be a great international wilderness area that our two countries, and Alaska and the Yukon, together with the native peoples on both sides of the border, could manage in perpetuity. Subject, of course, to the right of the native peoples to hunt and fish and trap as they had always done in the park area.

I also recommended a whale sanctuary for beluga in Mackenzie Bay. It hasn't been established, but there hasn't been any significant oil and gas exploration and development as far as I know in Mackenzie Bay. So it is still a *de facto* sanctuary for the beluga who come to those warm waters every year to calve.

Today, 23 years later, there are two National Wilderness Parks in the Northern Yukon. There is as well the Old Crow Flats special management area and the special conservation area, and looking at the map, I realize that these are roughly equivalent in size to the 3.6 million-hectare park that I proposed 23 years ago.

I should say that before I made my recommendation for a wilderness park in the northern Yukon in 1977, it should be understood that there were many people who had for a long, long time been urging a wilderness park in that area. The late Dr. Andrew Thompson is one who certainly comes to mind. Of course the Inuvialuit and the Gwich'in had always urged that that area be protected. In fact, as you know, we have the Inuvialuit and the Gwich'in to thank for the establishment of the two wilderness parks and the Old Crow Flats management area.

It is remarkable, I think, that the Inuvialuit Final Agreement is the basis for which you are meeting here today. It is the Agreement that calls for these conferences to be held every three years.

I have come this far in what I've said today to exhaust my own knowledge of this subject. We have an agenda that you will see reflects many of the things that Mr. Eftoda mentioned a few minutes ago. They take us well beyond the concerns that I had 23 years ago. Of course, there are the current implications of oil and gas development and pipeline construction. There is the whole issue of climate change, which had hardly appeared on the radar screen 23 years ago. You are now more concerned about ecological research than species-specific research. Of course, the rights of the traditional users of the land and the role of the communities are still before you.

I will just remind you of something else that is important in determining the future of the Northern Yukon. That is, much will depend on what happens in the United States, not only in Alaska but also in Washington D.C. Because as you know, the future of ANWR depends on decisions made in Washington D.C., it depends on what the people of Alaska and the government of Alaska want, and of course on what the Inupiat of Alaska want. We have always sought to work closely with our American cousins to make sure that the future of the North is secure. We should watch closely what happens regarding decisions on oil and gas exploration and development in ANWR and whether proposals for pipelines across ANWR are greeted sympathetically in the United States. You will be hearing more about that.

I look forward to hearing more about all of these subjects. I thank you for inviting me.

Setting the Context: The Inuvialuit Final Agreement and the Yukon North Slope Wildlife Conservation and Management Plan

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

In looking at a theme for this conference, it was the theme of change that really leapt out at myself and my colleagues on the Wildlife Management Advisory Council (North Slope). It is the theme of change that we recommended to the Yukon Government as the party responsible for hosting the conference.

I'd like to take a few brief moments to talk about why we're here, what our work is, and what we need from this conference. To take a step back, I appreciate the comments of the Minister and Mr. Berger, who reminded us of history, and that's a very important aspect of this conference – to remember our history. For those of us who haven't read it, maybe now is a good time to start reading it. Because as Mr. Berger pointed out, there are many issues that he spoke to in his report 23 years ago, that are just as relevant today, and indeed have returned.

He did write his report 23 years ago, and along with his report, three months later the Alaska Highway Pipeline Inquiry Report also came out. I would suggest that it too is a very telling document to read today. And of course, since then we have a Yukon Umbrella Final Agreement, we've got the Inuvialuit Final Agreement, and as both gentlemen have referred to, these are both very significant documents in anchoring how we go about doing business today, not just in the Yukon but across the Yukon North Slope and the Western Arctic as well.

I'd like to think that there are two documents that bookend our talks in the conference over the next three days. Our window is roughly 25 years. To go back almost that far to what we all I think we all now know as the Berger Report, the Mackenzie Valley Pipeline Inquiry Report. As he indicated, it's an interesting document to read 23 years later. There is one phrase from that report that I've always carried with me. In it he says: "How we respond to the challenges of the North will tell us what kind of a country we are, and what kind of a people we are." If you look at that notion and apply it to all of the challenges that face us, in a sense he's reminding us that every challenge we face and how we respond to it speaks greatly about our country, our territory, and the kind of people we are. I would suggest that the challenges that this conference is looking at continue to test the kind of people we are, the kind of relationships we have with one another, and what we can expect of ourselves and those around us.

The document that in my mind bookends the other end of this conference is a document that came out 20 years later, three years ago. It is the Mackenzie Basin Impact Study. For those of you who aren't familiar with it, the Mackenzie Basin Impact Study was a very telling account of the influence that profound changes to our climate were going to have on the Arctic. I'd like to cite a page from it:

> Most of the regional effects of climate warming scenarios would be negative, including landslides from permafrost thaw, reductions in water levels, increases in forest fires and reductions in forest yield. These impacts appear to offset any potential benefits from longer growing seasons. Some of these changes have been observed during the recent 35-year warming trend. Most participating stakeholders in this exercise have said that in their view the region can adapt if these changes occur at a slow pace. But if warming occurs it would considerably more difficult. If vegetation and wildlife patterns become modified by climate change, traditional aboriginal lifestyles could be at serious risk. Long-term climate change impacts on communities, however, will also be determined by many other factors, including lifestyle choices made by the regional inhabitants. We do not know what role climate change could play in the future of the two economies of the region.

And of course the two economies of the region are the same two economies that Mr. Berger referred almost 20 years earlier in his document. It's an industrial economy and an economy of traditional use. I'd suggest to you that those same choices face us now as they did then. With the reemergence, the resurgence, the resurrection of oil and gas interests and activities in this area, these questions are just as telling today as they were 23 years ago, with the added wrinkle, and it's an understatement to call it a wrinkle, of climate change. So there are some very profound choices we're faced with.

At the conference we had three years ago, a strong recommendation came out to devote considerable time in this one to climate change. And we've done that in recommending this agenda to the Yukon Government. At all of these conferences, many recommendations are forthcoming. We take these recommendations quite seriously.

There is a whole section in the Inuvialuit Final Agreement devoted exclusively to the Yukon North Slope. I think that should tell us all about the significance the negotiators, both the Inuvialuit as well as Canada, the Yukon and the NWT attached to the area. It's the only area in the IFA that has an entire chapter devoted to it. There are very few chapters, if any, in other northern land claim agreements that have a whole chapter dedicated to a specific region.

As a part of laying out special provisions for this area, as Mr. Berger mentioned, this conference is called for by the agreement. The point of having this conference is to bring people together, people such as yourselves, from all walks of life, to discuss and to debate current issues on the Yukon North Slope, so that all those with a management role for the area can be informed by the discussion and the recommendations that come out of this event.

To go back to the fundamental question that Mr. Berger raised 23 years ago in his report, how we respond to the challenges of the North will tell us what kind of a country we are and what kind of a people we are. That's a fundamental question for this conference. One of the fundamental issues to look at in answering that question is how well prepared are we today to deal with resurgence of interest in oil and gas, climate change, and other issues that face us. Frankly, I'd like to suggest that we're much more prepared than we were 23 years ago. In part, because we have the land claim agreements. Also, some

excellent work has gone on that we are going to hear about during the rest of this conference.

I'd like to take a moment, now, from the vantage point of our co-management body, to look at some of the work that we've been involved in. What organizes our work is a Wildlife Conservation and Management Plan. It's gone through a number of iterations over the last ten years. It is a document that has been applied in many different areas, on many different issues. I'd like to walk you quickly through this Plan, and some of the changes we're looking to introduce into it, as well as some of the major items that have been accomplished over the last ten years.

When we wrote this Plan, essentially oil and gas had vacated the Canadian Beaufort. At the time we sat down to draft the plan we knew we had anywhere from a ten-year to a thirty-year window of opportunity to do some work in the area so that all of us would be better prepared when industry returned. Well, it wasn't thirty years; it was approximately ten years. I'd like to go through some of the things that have been accomplished in that time.

The Plan itself is organized around a series of goals, objectives and species reports. The species status reports are an important part of the Plan. We've identified 35 species, for which we've laid out estimated population sizes, population distribution and range, unique characteristics of the population, management concerns and information gaps, and the management regime of the population, through various plans and agreements. None of this was available to researchers or to industry 10 or 15 years ago. So this is new information, and it's a great place to go to get a sense of what's been done and where work is needed. For those who are interested in the Status Reports, they are on the World Wide Web, and there is a site (www.taiga.net/wman/researchplan/reports) that we'd recommend to you.

The Plan has five basic goals. We've consulted many people on these goals over the years, and a lot of work has gone into refining them. Under each goal are a series of objectives that we take very seriously.

Goal A is the most important goal for the Yukon North Slope as defined in the Inuvialuit Final Agreement, and that's the conservation of wildlife and habitat. With respect to this goal, just to highlight some achievements of the last ten years, we now have species management plans in place, or in the works, for Porcupine caribou, grizzly bear, beluga, muskox and char. We have a 12-year Inuvialuit Harvest Study that's been recording and reporting on the harvest by the Inuvialuit of wildlife in the area. We were instrumental, I believe, in initiating an ecological knowledge monitoring program for that area. That work has given rise to what many of you know now as the Arctic Borderlands Ecological Knowledge Co-op.

We've also got some new mechanisms today for furthering the goal of conservation. There's the Yukon Protected Areas Strategy, the Marine Protected Areas Initiative under the Fisheries and Oceans Act, regional land use planning and so on. Our Council has also

produced what we call an atlas for the North Slope. It was an attempt to take any mapped information on this area and compile it and make it available to wildlife managers. Finally, and very importantly, we've worked very hard with the Yukon Government and the Inuvialuit Game Council to amend the Yukon Wildlife Act to bring it into line with the IFA.

Goal B is the protection of the North Slope environment. There are a number of issues here that have been very important to us. One of these is contaminants, and the clean up of contaminants. As many of you know, there has been a lot of work done on the clean up of the DEW line sites on the North Slope and in the surrounding area. The Inuvialuit Regional Corporation now has a coordinator who is responsible for contaminants.

We also have taken seriously the need to monitor the environment to look at changes that have been occurring, whether it's in vegetation or wildlife populations, that may have something to do with climate change. I'd like to think that through the Canadian Wildlife Service, and its partner agencies, as well as communities in the region, that there is a community-based ecosystem monitoring program that is second to none in this country.

Goal C is enhanced interjurisdictional cooperation. From 23 years ago we have taken enormous strides in this particular area. Indeed, the last conference we had was devoted to this whole notion of building bridges across borders, whether the borders are international, state or claims based. I think that while we have certainly a distance to go, we have come a long way in building up relations with our Alaskan neighbors and in working to improve working relationships between the two territorial governments. Of course, there is also the long-standing collaboration between Gwich'in people on both sides of the border and Inuvialuit and Inupiat people on both sides of the border.

We have seen some wonderful work done and at the same time there is a lot more that can be done. I'd suggest that many of us here might like to think about how we, who work at the community level or at the regional level, can better connect with the work of the Arctic Council. It certainly is engaged in initiatives that we all should have an interest in.

Goal D is the involvement of user groups in management work on the North Slope. My own view on this is that the report of the Mackenzie Valley Pipeline Inquiry was a watershed, at least in this country, for the involvement of communities in the work of planning, and in the work of sorting through the tough resource management issues that Northerners face. Up until Mr. Berger did his landmark tour through the communities, essentially it was unheard of for a national inquiry to go to the people and hear what the people had to say. I think one element that emerged very strongly in his report is what we all know today as traditional knowledge. I would suggest that that report was a watershed in opening that door, and since then I'd like to report to him that we've taken many strides through agency and co-management work. We see traditional users and traditional knowledge involved in resource management decision-making in a way that was unheard of 23 years ago.

Goal E is development within environmental limits. The Inuvialuit Final Agreement is really quite clear that while it sets out a National Park and a Territorial Wilderness Park for the North Slope, the eastern portion, from the Babbage River east, is an area that is designated as a controlled development area, over which a special conservation regime applies. And so we are in a sense, looking at how to provide for development in the context of environmental limits. I would suggest that part of our work at this conference is to define and establish what those limits are so that we are in a position to articulate to industry what is reasonable, and what the conditions are for industry to proceed and conduct development in this area.

It is only fair that industry expect that of wildlife and resource managers in the area. So we are interested in the current proposals and plans, whether it's for seismic, whether it's for pipelines, whether it's onshore or offshore. But we also need to be looking at what our level of comfort is. I'd like to think our level of comfort has increased significantly from what it was 23 years ago, in part because we have settled land claim agreements, in part because we have co-management institutions in place, in part because we've been doing the research and we've been doing the planning.

But that still begs the question of how much is enough: How much research do you need to be able respond to the tough questions of the day? We know that we're never going to have all of the studies done, that there's never going to be absolute certainty and we know there's always going to be an element of risk associated with the choices that we have to make. When we get down to it, the real question is how much risk are we prepared to live with? Personally speaking, I think the risk factor is down considerably from what it was 23 years ago. At the same time, I don't want that to be heard simply as a green light, that we're open for business with no conversation, no discussion, no limits. The point of this goal is to be able to articulate as clearly and honestly as we can, and as reasonably as we can what those limits are.

One of the most important products to come out of our work of the last couple of years is the Yukon North Slope Long-term Research and Monitoring Plan. This was an exhaustive effort. It is a web-based document. I would suggest to anyone in the research community, whether in government, the academic community, or industry, that if you want to look at what or where the research needs are, or where to begin, this is the place to go (www.taiga.net/wmac/researchplan/). This is the first stop. If you want to know where the research gaps are, this is the place to go. We held many workshops in a number of communities, pulled together many people, and it's a fine piece of work. When it comes to being able to articulate what needs to be done, and where it needs to be done, this is the document that does it.

And finally we come to Goal F, the implementation of the Plan. In the conference package there is a summary of all of the actions, old and new, in this Plan, with a status report beside each. The point that I'd like to make in closing my overview of this Plan and how important it is, is that this conference plays a very significant role in the Plan. The whole purpose of having these conferences, to a large extent, is to provide recommendations and to express issues and concerns that can find their way into this

Plan. Speaking for my council, we've got a real obligation to those of you who come to this conference to make sure the Plan does reflect the issues and concerns you're raising.

So that's the context: where we're at today, what we've accomplished over the last ten years on the Yukon North Slope. In closing, I'll give a few observations. The conference is called the Yukon North Slope conference, but we take a very broad view with respect to the subject matter that we're looking at. So of course we look to Alaska, of course we look south over the height of land to the Old Crow Flats, we're looking offshore, and as well we're looking across the Northwest Territories border.

I'm really excited by the people who come to this conference and who are going to be making keynote presentations or doing presentations in the workshop. I'd like to think that the information and ideas you're going to hear are going to be, for many of you, new ideas. It's an opportunity to look at the work that people have been doing. I think that the research work we're seeing in the areas that I've mentioned is cutting edge. I think that those of you that are involved in this work should have our appreciation and that this conference is going to provide you with an opportunity to get a little recognition for the work that you've done. The keynote speakers that you're going to be hearing from this afternoon – I'm delighted by the people who've been able to come. These are people who've got twenty- or twenty-five-years' experience or more on these issues in the North.

One thing that's struck me about the public debate on pipelines over the last five months in the Yukon is the fact that very few commentators seem to remember that we've been here once before. These speakers can remind us of what's been done, and what's been accomplished. There are several questions we should be considering: are we picking up where we left off fifteen years ago? Or have we learned something in the meantime? Or are we simply turning the clock back twenty-three years and starting all over again? I think that's something we all need to think about.

Finally, there are two people who made a great contribution, over their lives, to arctic science, from very different perspectives. These are also two people who made tremendous contributions on the Yukon North Slope. These people are no longer with us. They have passed on since the last conference three years ago. I would like to give recognition to Dr. Andy Thompson, and also to Nelson Green of Paulatuk, who was a superb conservationist.

Thank you very much. Welcome to the conference. I look forward to the discussion.

Keynote Address

Randall Pokiak
Inuvialuit Regional Corporation

First of all, I'd like to apologize for Nellie Cournoyea, the chair of the IRC. She's pretty busy with the health issue at home. She wanted me to say that she's sorry she couldn't be here.

There have been a lot of questions as to the position of the Inuvialuit in regards to our region and the development that has taken place in the past, and where the Inuvialuit are heading in the future. We have always maintained that the Inuvialuit are Canadian citizens. There was a big question when we were negotiating our claims as to that issue, and yes, we are Canadian and we pay federal employment taxes like you guys, we pay corporate taxes. We do the things that other Canadians do and we equalize ourselves with everybody across Canada. We've hoped that through this process other Canadians will see us as equals. With this in mind, we negotiated our claim.

There are a lot of things that have happened to get us where we are. A few years back, there was a big question: what is a Canadian? And there was a small inquiry, and a government representative came to Tuktoyaktuk, and met with local people. I was there, along with a number of other people, and he was asking these questions. How strong is Canada? First of all, we told him that we are Canadians, but if Canada is going to be strong, we've got to be strong. As Inuvialuit, we've got to be strong. Other people from the rest of Canada have got to be strong. That's what makes a strong country. We want to be recognized as being part of that Canadian contingency, where we are strong as Inuvialuit. We'll maintain our part of the country, and make Canada recognized. I believe that through the claim, that's what we've been trying to do.

One important thing is that we don't retire our elders. A lot of people put years and years of experience into the government agencies and then they are retired. They are put away after 65 years, put onto the shelf. After they've gained all this knowledge they are put on the shelf. As native people, we don't do that. We gain knowledge from them, and we expect them to pass down the information gained in their life's work. And then we carry the torch on.

One of the goals of the Inuvialuit Final Agreement was for us to become a meaningful part of a changing northern society. That was one of the main goals that we had right from the beginning. And I believe that we have come a long way, right from being harvesters, going out on the land trapping and maintaining our life to fitting into the mainstream of society in Canada.

There are three things I'll comment on while I'm here: where we've been, where we are, and where we're going. At all times we've had to deal with social issues, we've had to deal with economic issues and we've had to deal with environmental issues. Those are the three main things that impact decision-making and the direction that people go.

Where we were in the past is the platform that we stand on; it's our foundation. In the beginning it was very hard for native people to be recognized, especially by government. We had no voice. The only voice that you might have heard was from people that were trying to get involved in the system, by being elected members of parliament. But that, again, was not a real voice of the people.

So native people decided to go ahead and try to become a voice. Organizations were set up, but these organizations had a lot of opposition. To put it extremely, some of them were classified as communist organizations. When I was going to school, I was told that COPE (the Committee for the Original People's Entitlement) was such an organization. What that group was all about was totally different from what I was taught. There were many native groups. Before there was IRC there was an organization called COPE, and COPE was made up of all the Indian organizations: Indians, natives, Inuit and Inuvialuit. They all wanted the same thing, they wanted to be heard, but they all had different agendas. It was the same goal, but the items they might have on a list as an agenda were totally different. Those things needed to be ironed out, and they caused separations. Different groups went their own way, and COPE was made smaller, with representatives from the Inuvialuit and the Inuit. There was an interest group here, Inuit had similar mentalities, same food, same culture, same social knowledge of each other. Together we started negotiating a claim.

Unfortunately, the time frame was different. The Inuit in the east felt they had all the time in the world. As Inuvialuit, we didn't have that time. Development was in full swing. There was exploration on land and in shallow waters offshore. Then before you could catch your breath, it went offshore. There were a lot of things going on and as a native group we were a small voice. That's where we came from. The people that made up the backbone of this claim, the IFA, are the land-based people, people that lived out on the land and then brought their knowledge to the claims table.

During this big development time, there were a lot of elders that didn't speak English. They came to meetings, trying to voice their ideas and concerns in our language, and there was no time for interpreters, and they slipped through the cracks. Through that process, they began to encourage young people who would listen to go and learn the system. To be our voice. Two things became important: to have knowledge of the land, and to have knowledge of the system, both in the government and industrial arena. And in financial institutions: they've got their own language, you've got to learn the language and how to conduct yourself, and train yourself to appear knowledgeable about what you're talking about when you're sitting down with them. These are the things, as a people, that we really had to adjust ourselves to.

At that time, there were issues with municipal, territorial and federal governments as well. The government of the Northwest Territories was trying to become more independent from Ottawa, and Ottawa was interested in keeping hold of things because of the revenues and resources and possible royalties that were there. There were also the oil and gas industries that were players. As I say, it went from land to offshore, and there

were a lot of brand-new issues there. They were learning as they went along. The Beaufort became the laboratory for a lot of the science work that was going on. It would still have gone on if it weren't for the Berger Inquiry, which got the government to take us more seriously in negotiating our claim. Also, the government's decision to support development of the oilfield at Hibernia. These were two things that gave us breathing room to help us to catch up and get a foundation to work on.

This development was one of the things that really got us going like a chicken with its head cut off. The petroleum incentive programs, or PIP grants, that the government had for the oil industry, really opened up the door in the north. They weren't held back at all, because of the funding that was available for them to go there and explore. That made a real impact on us, on the social side. I come from a community that was really socially impacted by industry. It was the heart of exploration, seismic and drilling both for land and offshore activity, with ships coming in and out. Twenty-four hours was not long enough in a day and it seemed there was no end to it.

During this time, the government had an agenda and it had funding. The oil industry also had an agenda and funding. We had an agenda as native people, as negotiators, but there was no funding. There was nothing there to draw from. So we had to borrow against the claim to negotiate our final agreement. These were funds that were not given to us, that were paid back to the federal government because of the borrowed money. That has been cleared off. That makes us more confident, having lived up to the agreement that we've negotiated and shown the rest of the world that we are a people that are ready for what's coming.

I'm giving you this background because it's good to know where people come from, and what their strong points are. For myself, when I am going to work with someone, I like to know both their strong points and their weak points. That way, things go a lot more smoothly. Then you can understand, help them, and work to achieve your goal. I believe that as Inuvialuit that's what we're trying to do. We've got strong points and weak points where we require input from other organizations and interest groups to meet that shortfall.

I'll talk more about the social impacts of the claim. One of the big things was that individuals had to decide who they were going to support. As Inuvialuit we had to decide: am I going to work for the oil company? Am I going to work for the government? Or am I going to work for the Inuvialuit? That was a big choice that people had to make, not only socially but also economically. The native organizations had very little funding and wages were very minimal. The industry had a lot of money. When I think back, the take-home pay I had was hundreds of dollars every two weeks, while people working with industry were taking home three or four thousand dollars. So that's the choices people had to make. Luckily there was a group of people that were very committed.

Another social impact was the large influx of people coming into the region. Also, the alcohol and drugs that came with all the money that was floating around. And another thing on the social side was education. This is where TukTech came in. There were a lot

of people with a minimum amount of education. With a little bit of help they were able to take on meaningful jobs in industry. When TukTech came into effect, there was a crash course in some of these areas: office jobs and drilling and other things. People took heart and they went in there and got their certificates.

These certificates came in handy for them because in 1986 when the industry left the region, these trained people stayed home. They took over vacant jobs in government at the municipal level and with the organizations that were set up through the land claim. A lot of people went from their industry training to take these jobs at home. These people are still active. They are now decision-makers. Northern people do a lot of decision making now. If you go to Tuk, or to other northern communities, you'll find native people in positions that are meaningful. They are taking an active role in the changing North.

Through all this, there was no impact funding. We heard that in other places across Canada when there were large developments there was a lot of funding available to deal with the social and environmental impacts. There was none available for us, so we had to live with what we had. We don't regret it. It made us better people, and I think it makes us more ready for what lies ahead.

Economically the main impact was the imbalance in the community. Now we hear it again through the territorial news that the economic rates are rising in Inuvik because of the growing seismic program. Rent in Inuvik is 25% higher. It gives you an idea of the impact when development starts to take place. So people have got to get ready; we've got to get ready. How we are going to handle this is something that we're going to have to deal with.

Environmental impacts are also important. Previously we felt the impact that development had on the fish, the migratory birds and the whales. Again, our voices weren't heard until it became very serious. There were a number of years where we couldn't fish in Tuk Harbour to feed our families and our dogs. We had to go elsewhere to fish because you couldn't get in the harbour, because of the dredging. As native people we felt that the dredging was the cause of the decline of our harvest yield. It was not accessible like it used to be, right in our harbour. There were also effects on the migratory birds that our people rely on for our spring hunt. A lot of people went without. Those of us who could go had to go further to hunt, and it cost us a lot more to meet that nutritional demand that we felt we needed.

Whaling was affected when development went offshore. We said, we don't mind you doing seismic work out there, but don't do it in this area at this time of the year. They didn't listen to us, and in 1967 we only got one whale for our community. We usually get 80 to 90 whales and that year we got one. Our feelings about environmental impacts were like a door opener for others to see that 'yes, these people must know something'.

Through all this process, the Inuvialuit were never against development. We supported it, but we were against how it was being done, the times and seasons. Those are the things

that you have to consider and we have considered them throughout our existence. We feel that we contribute to that knowledge. Habitat areas are very important, both on land and on water. There are also the impacts that seismic work was having on lakes and fish habitat areas, frozen lakes during the winter.

There was also the permafrost question. What would development do to the permafrost? And the biggest worry for us was when they went out offshore into the Beaufort Sea. We worried about the impact the artificial islands would have on the migration of whales and on the break-up of the ice during the spring thaw. There was also the possible problem of an oil spill: what's going to happen? Who is going to handle it? Where is the money going to come from? And the requirements that the industry needed for deep-sea ports, that was another big issue.

Research was another concern. There was research going on at that time that was good to some degree. The beluga research that was going on at that time, funded by industry, was one of the bright lights. The harvesters were involved and the funds went to them to monitor the whaling process, the harvesting process and the timing of migrations. That has carried on, when the Joint Secretariat was set up and the FJMC got started, they took the ball and ran with it. Through this process the Inuvialuit were instrumental in not only producing a regional plan for beluga that was acceptable to our people as harvesters, but also opening the door for us to go to Alaska and deal with the interjurisdictional problem of species migrating back and forth.

These are some of the things that we did as native people. It was not government to government. Because every time we wanted to talk about migrations, the government said, well, I've got my jurisdiction, they've got theirs. It stops there. The work that has been done by our people not only on the beluga management regime, but the polar bear management agreement that we have with the Inupiat has been recognized by governments: Canada and the United States, Alaska and the territories. One of the things we did as Inuvialuit was open the door to be able to go beyond those boundaries.

The other thing in the Beaufort Sea that was of concern to us was the low-level aircraft flying and the routes that they took and how they would affect migratory birds and whales. Those are the questions that we had, and industry helped us to answer some of them. Research fell to a standstill when industry pulled out. There is still a lot of research that needs to take place, because when they come back, they're going to use that area and will want to develop permanent camps in some areas.

They come to us for a lot of traditional knowledge at public meetings, but the thing is a lot of our people are now community-based. People like my dad and others before my time were out on the land and they knew the resources that were there. They knew the times and the seasons and through the community changes we have lost some of that knowledge. We are hoping that industry in the future will have programs similar to the beluga research where they will work with our people to do research in areas they are interested in. These are going to be challenges in the future both for Inuvialuit and for industry, trying to cooperate to achieve something.

The IFA is basically divided into two sections. One is the IRC or money side, which looks after private interests of the Inuvialuit, for development and investment purposes. It was not only land claims that we negotiated, there was a certain amount of money involved to make up for lands that we gave up. IRC was set up to deal with that. At arms length is the Inuvialuit Game Council and the Joint Secretariat was set up to look after the interests of the public side.

Earlier in our negotiations the government told us that nobody could own land, no Indian, no Inuit, no white, nobody could own wildlife, water or the air. It belongs to everybody, and in Canada that means the federal government. We said OK; we don't mind that, as long as they fund our interest. Because we've got an interest in that area. We want 50% representation on all the agencies that are developed. That's what you're seeing here today. That's why there's such a strong involvement of Inuvialuit on all these boards. Through our land claims process we were able to play a meaningful role.

As you know, there's a lot of education you have to go through to deal with all these changes. You go from being out on the trap line to being dressed in a suit and tie at a meeting. That's a real big difference. It was very important that we adjusted to that. To give you an example, when we negotiated the Agreement in Principle, it was a way of putting our foot in the door. A door was open and we put our foot in. And with the IFA, that door basically opened for us. It's wide open now, and we're in there being very active.

As Inuvialuit, we had to grow up fast. We found that you could go into a financial institution and they wouldn't even look at you. We found out that if you were a native person they wouldn't talk to you. These are the kinds of things we had to deal with. We've maintained a relationship with those financial institutions that did open their doors, but it took time and dedication.

We've had to grow up in being directors, being responsible in your position, showing up when the meeting's taking place and being on time. These are the kinds of things that people had to develop. For some people it's no problem. But when you take people from the shelf and put them into a position, there's got to be training that takes place. I believe that we've come that far. Now when you're going on a charter, if someone doesn't show up, you leave them. You don't wait for them, like we used to do. If the Inuvialuit want to be involved, they show up. The people that you see here today are very dedicated people, the kind of people that are willing to take part.

Keynote Address

Steve Cowper
Public Sector Consultant, Governor of Alaska 1986-1990, President of the Northern Forum 1995-1998

First off, I'd like to thank the organizers of this conference for inviting me. It's good to see a lot of old friends and to make a lot of new ones. It's a particular privilege to meet for the first time Mr. Tom Berger, who is very well known and respected in Alaska as well as Canada. Looking back on it 22 years later, it's hard to appreciate what a breakthrough document his report was. It was a very bold statement, and it's meant a lot over the years. From the standpoint of Alaskans, we'd like to thank him for it.

I'm going to restrict my comments on climate change to the observation that in Fairbanks there's a bumper sticker that reads 'Alaskans for global warming'! The results have not been good - basically it rained all summer. We can go into the rainforest management business, no doubt.

What I would like to do is make some comments that relate to the gas line that has been much discussed. First, there's a kind of a cautionary tale that relates to Alaska's experiences with the oil line and with oil development. Secondly, I'll outline the various North Slope gas proposals and make some offhand comments on the political feasibility of those proposals. Finally, I'll wind up with some unsolicited advice!

I don't want to go through every thing that happened during the development of the oil fields at Prudhoe Bay. I think most people in this room are familiar with the developments, including the Native Land Claims Settlement act of 1971. I was in the state legislature in the mid-1970s and we were the ones who made the rules for the oil development that was to take place and for the construction of the pipeline. We felt it was critical that Alaskans understood that this was a one-time windfall. We wanted to utilize this one-time windfall to graduate from the great northern experience of waiting for large projects to appear, negotiated by other people. We wanted to basically join the world and we thought this would be a tool that would allow us to do it.

I'd like to fast-forward from those days without further commenting on them, to Alaska today. Over the years we have spread money around like the Biblical bread on the waters, hoping that something would spring up. What actually sprung up were people to carry the money away and very little else. There were some successes and many more failures. It is now the year 2000, supposedly a watershed.

Here's the watershed as I see it. In 1986, the year that I was elected, the educational level of Alaskans was number two in the country. Fourteen years later, Alaskans are 28th in the country in education. Second fact: for many years, until maybe 1988 or 1989, Alaska had the highest per capita income in the country. It is now the year 2000 and Alaskans are number nineteen and plunging sharply. If you subtract the free money that the government gives away, which by the way is now 2000 dollars per capita every year from

the permanent fund, if you subtract that money, we are in the lower half of the country in terms of per capita income.

Fact number three: as people know, the critical work force component is the age group between 18 and 34. While every single age group in Alaska over the last ten years has increased substantially, the age group between 18 and 34 has gone down by 30%. What does that mean? It means that young people are looking around and saying 'there's no place for me here, I'm leaving.' That's what it means. Alaska also has the lowest level of information technology skills of any state in the union.

That's where we've gotten. Having said that, I want to point out an interesting divergence from that unfortunate group of statistics. And that's in the native community. The native community, on the other hand, has increased the per capita income that it enjoyed ten years ago by a substantial margin. The native corporations in Alaska have managed to join and participate in the global economy very successfully in most cases. The Arctic Slope Regional Corporation, headquartered in Barrow, had in the last fiscal year gross revenues of one billion dollars U.S.

There are other very successful native corporations. They got there by understanding that they could not keep themselves within Alaska and expect to be successful. They have gone out and they have started businesses in other parts of the country and indeed in Canada. They have hired the expertise that they needed to succeed in these fields. They are known nation-wide as successful business ventures, and of course native Alaskans own them all 100%.

Now Alaskans who are not natives – and of course it's difficult to generalize, and this isn't true of everybody – but the fact is, most people are sitting around waiting for another big project to fall on their heads. In the meantime, they are sending prayers and various requests to Senator Stevens, who is the chairman of the Senate Appropriations Committee in Washington. He is responding in kind, I must say, but that is no way to produce a long-term economy.

So the supplications and the fervent wishes are now about to bear fruit with the proposed natural gas pipeline, which is being seriously discussed for the first time by the Alaska/ Prudhoe Bay gas producers. This is something that is fairly recent. It is the result of the fact that energy prices have gone sky-high, at least relative to what they have been over the last several years. It was only January 1999 when the large energy companies in the United States said that oil prices in the foreseeable future would never get beyond about 12 dollars. Of course it's 35 dollars today, and that's U.S. Strange how quickly they change their minds!

In any event, it appears to be a real thing. The North Slope Alaska gas reserves are estimated at 26 trillion cubic feet. That's a lot of gas – a ten-year supply for the United States. There are five major proposals to get that gas out. I'd like to go over each of the five, because each of them will have an impact on people in the Yukon and Northwest Territories in particular, and Western Canada in general.

The first is the Alaska Natural Gas Transportation System. This is known as the Foothills Project. It involves bringing gas from Prudhoe Bay through Fairbanks, down the highway through Whitehorse, and on to the Alberta distribution network. This is a plan that was set up originally in 1977 in the U.S. Congress, with negotiations with the Canadian government. At that time of course it was a very different energy situation. It was thought that there was a shortage of natural gas, it was thought that active government intervention was necessary in order to bring the energy to wherever it needed to be to avoid this energy crisis. Of course, it developed that the only thing the government needed to do was to deregulate natural gas, which it proceeded to do, and the gas flowed and that was that.

Now it develops that because of the increased level of the U.S. economy, and the fact that natural gas is seen as an advantageous fuel from the standpoint of the environment, there's an enormous demand for natural gas. The demand is over and above supply that exists, particularly in the mid-west and the northeast. It is thought, at least until the prices go down again, that the best source is the North Slope of Alaska.

So here we are back to the same place we were in 1977, only for different reasons. Now, the Foothills Project is compelling for a lot of reasons: it is already permitted, the governments have done a rubber-stamp job on it and it's a good right of way because it's along a road. Those of you in the pipeline business know that a road is a pipeline's best friend. So there are a lot of compelling reasons to adopt this method of getting gas out of the North Slope. That line would of course pass through the Yukon. There will probably be some uses here, but I'm not the correct person to comment on that. It would require a separate pipeline from the Mackenzie Valley, either through the Dempster or some other route.

The political problem with the line is that it costs more than a line across the top. That's what the problem is. If gas costs remain very high that probably won't make much difference. But producers are nervous. Prices go up and down. They would like to hedge. They like the idea of the Foothills Line, but they're nervous about it.

Alaska, for its part, very much wants the Foothills Line. Why? Because the line goes through Fairbanks, and if necessary, you can take a second line and run it from the main line down to Valdez. Alaskan people would get to go to work on the line. It would make it a lot easier for Alaskan people to utilize the gas, and we are a gas-dependent state. So, Alaskans like the Foothills Idea. The producers, well, they're not sure.

Let me pass on to the Alaskans' favorite route, the so-called Yukon Pacific Line. Yukon Pacific is a company owned by CSX, which runs a Chesapeake and Ohio railroad back east. Their idea was to take a gas line, run it to Valdez, and make liquefied natural gas, or LNG, and ship it to Asia. Well, that'll work if the prices continue to be very, very high. The problem is that it's enormously expensive to process gas and turn it into liquefied natural gas. Then you've got to buy specially made ships to put the LNG in and you've

got to haul it off to Asia and then you've got to have a specialized de-gasification process at the other end.

The second problem is that Asia has got a world of LNG. It's got a long cue of companies that can't wait to deliver LNG to Japan and Korea primarily, and some to China. And Alaska gas has to be competitive with that gas, which by the way is much closer to Asia than Alaska is. Most people look at that and say, 'I don't think Asia's going to buy Alaska gas.' I happen to know a thing or two about Asian gas markets, just by being in an organization that discusses it from time to time, and I've never heard a serious word about Alaska gas coming from any of the major power companies in Korea and Japan. They don't even mention it. There's a signal in there somewhere.

The third serious proposal is called the Arctic Resources Company Proposal. That's the one that would gather the North Slope gas from Prudhoe Bay, take it across the top, and run it down the Mackenzie Valley, pick up the Mackenzie Reserves and send it on down through the Alberta reserve system to wherever it goes from there. How are we going to do that? Well, in the U.S. they're going to run the pipeline underwater, four miles out. Conveniently, because the state of Alaska owns the land three miles out and the State of Alaska isn't going to let them do it. So, they're going to put it four miles out, and hope that the federal government gives them the right of way. That's of course a political decision that will be made probably by the highest authorities - probably the President, or the Secretary of the Interior.

But that will be done for political reasons, if it's done at all. The Arctic National Wildlife Refuge is sitting right there and people don't like the idea of having a pipeline whizzing by, even four miles away. And the people from the North Slope Borough, the Inupiat, are going to have a say in that. Why? Because if they object to it they're going to bring the whales to bear, they're going to say that if you dig this hole it's going to scare those whales off. And they will get the ear of a lot of environmental organizations if they do that.

Now, who wants that line? Why, all of the North Slope producers want that line. Why? Number one, it picks up their gas. A lot of that gas sitting in the Mackenzie Valley is owned by Amoco, which is owned by BP, and of course there's other gas owned by Imperial, which Exxon has a thing or two to say about. The other reason is because that line is projected to be considerably less expensive than the foothills line. And by the way, in case this is not common knowledge, the Arctic Resources Company has proposed one hundred percent native ownership, both in Alaska and in Canada. You can see that native people have a lot to gain from this project, if the company means what they say.

Who doesn't want this project? The state of Alaska, that's who. Why? Because it doesn't really go through the state, it goes out in the water and that's the end of it. So, no Alaska jobs, except what the Arctic Slope Development Corporation will be able to negotiate, they're very good at that. No Alaska gas for in-state use. And the considerable opposition of Senator Stevens, not to mention Senator Murkowski who is the chairman of the Senate Energy Committee in the U.S. Congress. All for the same reasons – fewer projected

benefits for the state of Alaska and no chance for gas use in the state. Probably more tax revenue for Alaska, because the pipeline itself will be less expensive, but in Alaska, people are thinking a lot less about tax revenue than they are about jobs. By the way, because of the less expensive nature of the pipeline across the top, down through the Mackenzie Valley, there's less of a financial risk. So there's a lot to be said for that particular route, if you don't happen to live in Alaska.

So it's the political thing. That's what it comes down to. It's going to be a political wrangle, and it's going on right now. That's the major point I want to get across.

There are a couple of other proposals. One of them has to do with the mayors in Valdez, Fairbanks and the North Slope Borough. They are trying to finance, through tax-exempt bond issues, a line that goes down to Fairbanks and Delta Junction. Then it either goes into Valdez and gets shipped out as LNG, or it splits and some of it goes to Valdez and the rest of it goes out the Foothills Line. They haven't gotten any place with this one. They might be able to save the project a bit of money but the producers don't like them and the state of Alaska doesn't like them. So we'll see about that one. That one doesn't look terribly promising to me.

The last one is the gas-to-liquids line. Gas-to-liquids is something that is relatively new. The main point of it is that you can make a pollution free diesel fuel from natural gas. And in the United States, most of the pollution caused by automobiles is caused by diesel vehicles. If they use this stuff, there won't be any pollution. And the Environmental Protection Agency is going to require that those vehicles go to clean diesel fuel very quickly. So there is a proposal, and I think it will be a reality, to make gas-to-liquids at Prudhoe Bay or to make it at Valdez, and put it in product tankers, and down to the lower 48 it'll go. You know they're serious because BP is going to spend 80 or 90 million dollars putting a test plant down in the Kenai Peninsula. They'll be using Cook Inlet gas for that. But it's a test.

What most people think is going to happen is they're going to send gas-to-liquids out, but there's going to be enough gas left over that they could move it down one of these pipelines as well. So, there's basically two ways of producing this gas.

That's the status at the moment, in a gross oversimplification. That's what you have to deal with. Now let me offer some biases or opinions. Number one, everyone that lives in the North understands that large resource-based projects are being proposed frequently by people that don't have a thing to do with the North. They're companies from outside, they want to make profits. They want to come up here and put up a mine, they want to dig for oil, and they want to do whatever it is they want to do. Once those projects are proposed it becomes a scramble as to who gets what. The companies come in and they have the financing, they have the expertise, they've got the money.

How you get a piece of it is your government has got to stand up for you. Of course, government has a piece of the regulatory regime that makes sure that the environment is

properly protected. And there's a tax regime as well so that some of those profits float back into the area that feels the impact of the development.

The other piece of leverage that you have is ownership of the land. If you own the land you can say: 'yeah, you people can put a pipeline across here, but here's what you've got to do in order to get permission to do it. These are the terms of the lease. You've got to hire our people. You've got to act in a certain way towards the land and the animals.'

So in this wrangle you are negotiating. They've got their own agenda. No matter what they say, they don't have your interests in mind; they've got the bottom line in mind. And there's nothing wrong with that. That's the way companies operate today and that's the way they've always operated. Don't expect any more of them. You have to stand up for your own rights and you've got to find out where your points of leverage are, where your power comes from. So do it.

In this kind of wrangle, frankly, knowledge is your friend and ally. Industry will tell you stuff from their point of view and to begin with, you won't know any different. Go find a consultant. Hire a consultant. Get somebody who knows more than you do. There's always somebody who knows more than you do. That's what Alaska did, for better or for worse. Get all the allies you can get to identify your interests, where your power points are and where your leverage is.

I guess I'll close by saying this: it's really important to know what you want when you've got a big development project like this. You've got to know what you want, whether it's jobs, revenue, training or environmental protection. Identify it. Two: use whatever power you can identify. And use it wisely, because in fact, industry will pack up their bags and leave if you overshoot the mark. You've got to understand how much leverage you've got and use it properly. Number three: get help. Hire it, if you have to. Hire consultants, hire lobbyists, it'll be worth it in the end.

I'm going to close by giving an example of the kind of thing that I wish Alaska had gotten to a long time ago. Lately I've been in Washington, D.C. assisting the Barrow native corporation, UIC, and its subsidiary, Bowhead, to get some government contracts. Without getting too boastful about it, Bowhead has a substantial number of major contracts which involve upscale information technology work.

If you get information technology work in Washington, D.C., you can send that work to Barrow. Why? Because to do work on a computer you don't have to be in Washington, D.C. You can be anywhere that's got the bandwidth. We worked with the government, we said look, these people are shareholders. They're not going to move to Virginia or Alabama or places like that, they're just not going to do it. They're Inuit; they're not going to live there. Why don't you authorize certain programming work to go to Barrow? Finally it happened, and I called up to Barrow and said where's our programmers?

The point is that information technology work is the work of the future. That's what it is. It's a kind of work that can be done in the major population centres in rural Alaska and

rural Canada, and increasingly you'll be able to do it from the villages as well. It is a talent that native people have. It is probably related to the fact that many native people in Alaska are bilingual. Also, it's icon related. Nobody knows for sure, but what we've found out in Alaska is that native kids in high school and middle school are way ahead of non-native kids. Way ahead. The problem is that once they get out of high school, they've got no place to go with that talent. It might serve you well to bear that in mind. If you can program computers, you can live in Tuk, you can live anywhere you want to in the future. And with that, I'll close. It's a pleasure to be here. Thank-you.

Keynote Address

Doug Bruchet
Canadian Energy Research Institute

Thank-you very much. Thank you for the invitation to the 2000 Yukon North Slope Conference, 'the challenge of change.' It's good to be back in Whitehorse. My working history in the north includes the Liard Valley, Mackenzie Valley, Beaufort onshore, Arctic Islands and Lancaster Sound. During my time I've undergone, or endured I guess, environmental assessment boards, water boards, the national energy board as well as the joint environmental working group for Greenland, Denmark and Canada.

My main presentation will focus on the challenge of change. It's going to be from the view of the industrial development perspective. Although I take this perspective I'm not here to justify or lobby for that point of view. I bring these views here for broad discussion and insight and no more than that.

Basically, what I'm going to do is give some historical context, the oil and gas potential, the regulations, environment, social and economic conditions and conclude with lessons learned.

The Canadian Energy Research Institute has been around for 25 years. CERI was formed in 1975 to provide a forum that brings together energy industry perspectives and knowledge with government policy-makers and regulators. Within that, the environmental energy division of CERI originated from a growing concern about environmental issues within the energy sector. Basically, we are coming across the three disciplines of environment, energy and economics to produce research.

We've just completed a major economic impact assessment on climate change measures. That was a two-year journey that will be going to the joint Ministers of Energy and the Environment this October. As part of that study, we calculated what would be the environmental health impacts of climate change measures. What would be the benefits if we reduce a ton of CO2, and other pollutants? Calculate that, and add it to the analysis. It is easy to say and most difficult to do. When you get into evaluating statistically the life of a child in the Windsor/Quebec corridor, you can imagine the emotion that comes to that dialogue.

We've completed two other recent studies. One is a survey of the literature concerning the three pipeline routings for the government of the Northwest Territories. Also, we're involved in a training program in the NWT that's basically looking at putting on a course that covers areas from wellhead to burner tip.

The Canadian North stands as one of the few remaining frontiers for hydrocarbons exploration in North America. The history and concentration of seismic lines shot in the North provides an indication of the areas that have been of interest to oil and gas explorationists. Lines shot between 1955 and 1980 cover a broad area from the Cameron

Hills in the south, proceeding north to the Beaufort. This reflects an initial assessment phase. Activity between 1980 and 1985 was more concentrated in specific areas such as the Tuk peninsula, the Cameron Hills and the Liard Valley. Activity between 1985 and 1990 shows a concentrated effort in the Cameron Hills as well as the Norman Wells area. Activity after 1992 was on the Tuk Peninsula, north of Inuvik.

In the last decade, very little exploratory activity has taken place. The confidential and most recent activity seems to be concentrated in southern regions. But if you look at the result of the last land sale, the area just around Inuvik is of huge interest to a number of the major players that are intending to do 3D seismic and exploratory drilling within the next year or two.

Exploration drilling activity in the north has occurred in cycles created by economic and political factors. The first major cycle occurred in the 1940s – that's hard to believe, but it's true. There was a canal pipeline during the Second World War and shortly after. This period included further development of the Norman Wells properties. The second cycle occurred in the 1960s as the federal government opened the Arctic and the Beaufort for exploration. The third cycle occurred in the early 1970s as the price of oil increased. The fourth cycle occurred in the 1980s, culminating in the export application for the Mackenzie Delta/ Beaufort Sea.

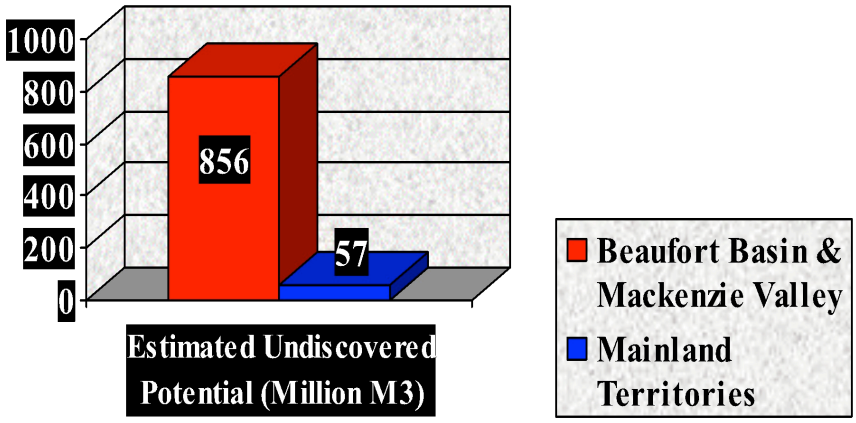
Changing oil and gas market conditions in North America have resulted in a renewed interest in major pipeline proposals. The current cycle is being initiated as a response to favorable market conditions. Oil today is about 35.50 U.S. dollars a barrel. There is a huge demand south of the border and there is no longer a capacity in the western sedimentary basin to deal with that demand. We're seeing a push into the Yukon and the NWT, and again, that's competing with offshore projects like Hibernia and Terra Nova. Although potential projects are still at the very initial stages of planning, a sense of urgency is developing.

The natural gas market conditions in North America have undergone a fundamental change in the past two years. You have to think about how fast this has happened. I remember about 14 months ago; oil was 12-14 dollars a barrel. Now it's pushing 36 dollars and it might hit 40. That's the pace. The developer looks at that and he sees a market. And he sees that market with a very tight time window. That's why you get hordes and hordes of people coming up from Calgary and Edmonton, wanting to discuss various seismic and drilling programs.

The lead-time on a line of this nature, whether it's a stand-alone Mackenzie Valley line or a North Slope/ Mackenzie Valley line, is still incredibly high. The concern is: 'Can I get a line in there? Will the price be sustained? Or am I going to have a huge white elephant sitting there when gas goes back down?' Again, market forces are creating this urgency.

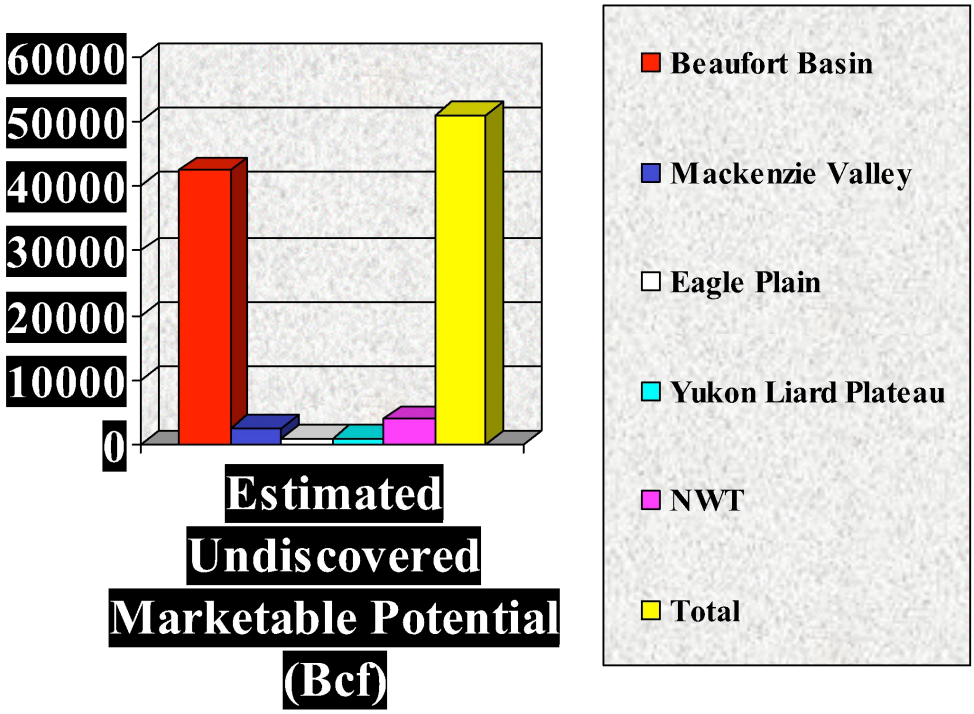
This graph gives you a quick summary of the estimated undiscovered oil potential in millions of cubic metres.

Summary of Oil Potential:



SOURCE: *Petroleum Exploration in Northern Canada*, Northern Oil and Gas Directorate, 1995.

Summary of natural gas potential in established basins:



The potential is growing. As we speak, these numbers are changing because of new technology that's been brought to bear on old seismic data.

Over the past forty years, under federal management, industry has explored oil and gas drilling. Oil and natural gas have been found in two of the Yukon's eight sedimentary basins. Although little exploration has been done, experts believe that there is significant oil and gas potential in the Yukon. To date 14.4 billion cubic metres of natural gas have been discovered. Current production for two wells in the southeast Yukon is estimated at 1.6 billion cubic metres of natural gas per day. In the Eagle Plains basin, 1.5 million cubic metres of oil have been found. Obviously, there's no oil production as yet in the Yukon. It really is untapped potential. Think of how many wells are drilled in the Western Sedimentary Basin; I believe last year it was 17 000 wells. It's really an area where if these prices are sustained, you're going to see a huge drilling program in the next two years.

There are a few future development challenges. Most of the Yukon North Slope is covered by the Inuvialuit land claim. When that agreement was negotiated, it moved the Inuvialuit to become not only an owner, but a regulator and a developer as well. All in one entity. The legislation for the Mackenzie Valley Resource Management Act creates land and water boards that are by legislation 60% First Nations. One of the great challenges the North faces is how to find the capacity to staff all of these boards and to have the capacity to deal with the emerging oil and gas industry.

There is a perception that all resource development is the same. I know when I worked in the North a number of community representatives used to compare the oil and gas industry to the mining industry in terms of disturbance. It's still going to be incumbent upon the oil industry to explain the footprint that they intend to leave. I believe that today there is more openness and acceptance of resource development in the north. This is especially true in areas where there are final land claim agreements. There is much more certainty in terms of access to the land and the interests of the First Nations.

Industry has a greater understanding of the aspirations and desires of Northerners, both aboriginal and non-aboriginal. A better business relationship has occurred because of settled land claims. Groups with settled land claims, such as the Inuvialuit, have a vision of where they want to take their organizations and are very, very business oriented.

I'll give you an example of how things have changed. We were doing environmental and social impact assessments during the 1970s and after that in the mid-Mackenzie/Fort Good Hope area. At that time, we would put forward plans, but it would be rare for us to come back at the end of the year and say, 'this is what we've found.' There was no real monitoring going on. We had environmental inspectors at all the rig sites, but there wasn't that annual closure. If you look at the agreements that are being negotiated by companies like Petro Canada right now in the Beaufort, they require a reporting out at the end of each year. They have formed a Mackenzie Delta operations group. Again, that's to try and coordinate the consultation process. I remember lining up at Fort Good Hope, waiting to land to get in and be on the next agenda item at the community hall. The community was impacted almost more by the consultation than by the activity!

The regulatory challenge: this is an area that the industry generally tends to whine about a lot. What the industry likes is certainty. They want to know that when they buy the rights to a lease they're not going to get involved in a go/no-go hearing. They see it as a conditional hearing. I remember when a lot of work was done in Lancaster Sound that was very, very expensive. If you can believe it, those wells were going to cost in excess of 200 million dollars. That was when oil was predicted to go to 80 dollars. You do all that work, and then somebody says 'this would be a nice place for a park.' Nobody disagrees that it would be a nice place for a park, but you've got 200 million dollars invested. Then the whole issue of compensation comes up. The focus is on what you bought the land for. You may have bought the land for only a million, but you've put 200 million into it.

Regulatory clarity is a huge issue. When I was getting ready for this presentation, I chatted with a number of oil and gas personnel that are active up here. This was the single biggest issue for them. Is it seamless between the various federal, territorial and Inuvialuit boards, for example? Are there different rules for different regions? Those are some of the concerns that are coming up. I know that it's rarely done, but one thing that has been done is to negotiate a regulatory agreement that has a time frame. It scopes out major environmental impacts that are then addressed by an environmental assessment process. It's important to have a time frame. A big fear is that once you get into this process, it's a life sentence.

The comment that most of the developers were making is that even though environmental assessment processes are being put in place in the Yukon, a lot of the permitting and leasing processes haven't been tested yet. They are in place, but they have not been implemented. I'll leave it up to you as to whether you believe that is true or not.

One of the biggest changes is the settlement of land claims. Land claims create their own regulatory process and sometimes the rules are not clear. Consultation with stakeholders is critical for development to proceed. That has been a huge learning process. Going back to when Judge Berger was conducting the hearing, there really was a Southern sense that regardless of what Northerners thought, development would take place. It didn't happen. There's a huge lesson learned there. Now almost every major operator knows that there will be no development unless there's some sort of consensus arrived at. Benefit plans must be adequate and the whole business development cycle, as well as questions of equity, social and environmental impact must be addressed. To me that is a huge difference.

Many of the environmental issues today are the same ones as in the past. If there is a series of protected lands then the oil and gas industry wants to know that. They don't want to get into areas that are going to be declared as having no surface access. It's hard to drill a well if you can't get on the land. Impact on traditional ways of life is one issue that is well understood. New issues include cumulative effects, protected areas and environmental regulation.

The industry's view on cumulative impacts is that integrated resource management plans should be in place for the Yukon and for the N.W.T. It is the government's role to regulate cumulative impacts. It is not the company's role, on a project by project basis. It is easy to say you are going to assess cumulative impacts but it is very difficult to do. There've been hundreds of workshops on that subject with very little output on how you can actually do it.

Key environmental issues include the highly sensitive northern environment and the slow recovery time if something does happen. How do you control access? If you put a seismic line in, with the slow growth rate, that seismic line is going to be in place a long time. We are seeing the development of helicopter seismic. Now in the western foothills in Alberta it's hard to see that cut line anymore. There is more control of access so that you don't get more impact than the impact of the originally proposed development.

Another issue is the relationship between indigenous people and government, researchers, and industry. I think this relationship is very strong. I'm impressed with the work that the WMAC(NS) has done in bringing information together and making it useable. Your web site is very user-friendly. Again, the interpretation of indigenous knowledge as an issue is well understood and deeply encouraged.

I'll give an observation related to impact assessment. The North was the birthplace for environmental and socio-economic assessment. Earlier development established the need and the importance for public involvement and "town hall" meetings. Today, stakeholder consultation is not only required, it is essential**.** When we were getting ready for the Berger hearings, the state of environmental impact assessment and socio-economic impact assessment was poor. Until the Berger Commission, I don't think I'd even heard of social and economic impact assessment. This is a skill that was developed in the North and exported south. What was learned in the North was taken and applied to large developments in other parts of Canada. But it started here.

I can say that there is a greater desire within industry to develop resources in a better way than it was done in the past. I believe that northern communities are better prepared for development. Again, it will depend on how fast it all happens. It's probably controversial to say, but the market dictates the pace of development. It's very difficult to be at the developing end, the producing end, and to try to access that market. If you miss the market, you've missed it for a long time. That's the nature of the game. Oil and gas is boom and bust.

I'll mention some industry challenges. The role of government in resource economy needs to be clarified. Changing environmental policies is a big issue. This is the whole area of certainty. We used to say that every environmental hearing we went into was different. In the old days, to give an example, we would go through an environmental assessment review panel and then we'd go to the national energy board and do it all again, at a huge cost. Now we've eliminated some of that. But there is still the perception by industry that we have a patchwork quilt of regulatory hurdles that need to be addressed. It's not so much in the seismic and exploratory part of the game. But when

you put down a lateral line across regions, as with a pipeline, then you get these types of differing conditions and requirements.

One of the greatest lessons learned from past development is that you need First Nations on side in the development, distribution and consumption of wealth originating from oil and gas development. Today industry has been invited on behalf of the Gwitchin and Inuvialuit to develop. I go back to days when the runway at Fort Good Hope was blockaded to prevent oil and gas guys from coming into a community meeting. That is a contrast to today, where a territorial legislature has passed a motion on a pro-development stance, given of course the appropriate environmental and socio-economic conditions. That's a huge change.

One of the challenges the industry faces is credibility and engaging northern communities in the benefits and the impact agreements. Again, there is a template laid out for that. I've mentioned that many First Nations support development now. That was not the case before. The formation of the Mackenzie Valley Aboriginal Pipeline Working Group to look at this development is welcome. First Nations are working collectively to maximize the benefits of development. Leadership is needed from the Department of Indian and Northern Affairs and territorial ministries of development, to make sure that those benefits are maximized in the North, and to ensure that economic leakage is kept to a minimum. The benefits or opportunities to profit from oil and gas exploration should not only be the end point; it should be part of the overall agreement.

I think I will leave it there. Thank-you very much.

Keynote Address

Fred Roots
Environment Canada, Northern Sciences Network

This conference is entitled 'the challenge of change'. It is a challenge for me to follow the remarks of such experienced and thoughtful persons. However, I have a slightly different focus than that of the previous speakers.

Let's try to put what we've said this afternoon into the context of tomorrow's workshops. Each of these workshops, in different subject areas, is going to be discussing several main questions. The first of those questions is what has changed? By implication the second question then comes up - who and what has been affected by those changes? The third question is very subjective, but in a sense it's the reason why we're here: Are the changes good or bad, and for whom? The fourth question is, Are these changes significant? Or are they part of the regular cycle of change? From that arises: What are the challenges for the people of the region? Don't forget the challenge is also for nature itself, and for institutions and policies. I'd like to add another question. Is it likely that these kinds of changes are going to continue no matter what we do? How many are amenable to decisions that we can make? And what will be the results, further down the line, if we do make changes? This is partly what we're here to see.

We've been asked to go back a bit and explain where we get our individual views. In my case, I've been playing around in the Yukon for quite a while, surveying and studying the geology. It wasn't until 1960 that I actually came to the Yukon North Slope. We had formed the Polar Continental Shelf Project in 1958. Its job was to map and study the resources of the Arctic coast and offshore continental shelf, from Alaska to Greenland. It soon became clear that there would be a lot to do in the Beaufort Sea, Mackenzie Delta and along the Yukon North Slope.

One of the most important requirements in the days before satellites and global positioning systems was to choose fixed stations on land as reference points for the surveys that would be carrying on offshore. Early in the study project, I had to go to Shingle Point, Herschel Island, Stokes Point, up the Firth River and so on, to get an idea what the situation was on the North Slope. One of the things we did, for example, was arrange for the transfer of the old RCMP building to my unit, for the price of one dollar! Where else can you buy a town for one dollar?

I should mention that at that time everyone who was in the science resource areas, or who knew much about history in the North, knew that there were signs of petroleum resources on the North Slope. After all, we knew that Alexander Mackenzie, in 1785, had come across the tarry seeps where Norman Wells is today and he said, 'this may be of interest should sufficient commerce be forthcoming!' There is also a well-known sandbank near Aklavik where you can get tar to patch your canoe. And of course, farther west, the U.S. Navy established a naval petroleum reserve near Barrow in 1923. So petroleum in the area was background knowledge at the time we were surveying the region. This is all

well before Prudhoe Bay was discovered, but it was the reason why it was worthwhile for companies to do those very careful studies that resulted in Prudhoe Bay.

On both sides of the border this kind of development was expected. The basic background studies were being undertaken and that's part of the reason why we went to the North Slope in the 1960s. That's why we bought the buildings on Herschel Island. We even did a careful hydrographic harbour survey of Pauline Cove on Herschel Island, assuming that as it was the only natural deep-water area along the north coast from Barrow across to Paulatuk, that's where a port would be developed. Well, it never happened because the ships were all to big, even for that depth.

I wanted to give this as part of the background as to why we think the changes have happened since then. Jumping from there to 1975, the middle of Judge Berger's inquiry, what was the situation compared to what it is now? I'll give you some personal observations. At about that time there were some really tough social changes that were consequent upon northern communities, particularly in the Mackenzie Delta, because of the surge of industrial interest. People were beginning to find a way of adjusting to this bipolar kind of economy, with high wages for some and almost nothing for everybody else. There was also an expectation of services that had very little association with the reality of most people who had lived there for a long time. This was a very stressful period.

People were beginning in 1975 to getting a handle on things. There was an increasing number of local people who had learned or were learning trades, and so had fair prospects for continuing jobs. After all, there hadn't been for generations a completely hunting/trapping economy in this part of the North Slope. There was whaling at the turn of the century, then a DEW Line came along and then a whole series of other things which pushed a wage economy and a mixed economy into the region. These things helped us a lot in seeing how we could adjust the learning needed for later developments.

At the same time, a little further south in Old Crow, there was very little change. It was an interesting thing to compare the speed of development in Old Crow to what was happening in the Mackenzie Delta and on the Yukon North Slope. You may remember that in those times Edith Josie was still giving the news of Old Crow to the nation. It was very interesting, but it was a different way of life from that of most Canadians, and even from that of the Inuvialuit.

There was a feeling of crisis in the industry at that time and that something needed to be done quickly. Exploration and technology development was in full swing. They were interpreting sometimes crude seismic results while at the same time developing drilling techniques, ice-breaking tankers and ship-to-shore pipeline connections. Everything was going on at once. Naturally, a lot of mistakes were made, a lot of extra money was spent, and a lot of impatience developed.

But if you sat back and looked at it, it wasn't much different than most frontier areas where oil and gas has operated. We had a rather myopic vision in Canada of how much

money was being spent in the north. We had a number of rather shortsighted subsidy schemes, where the government tried to make sure the interest stayed there. If you look at that situation compared to what was happening in Venezuela, in Nigeria and in parts of the Middle East, it was about the same order of magnitude and the same amount of panic. It wasn't a lot different. But we didn't see it that way.

By the time of the early IFA negotiations, it was clear that the early oil deposit claims were not realized. A note of caution was coming in at that time, in the late 1970s and early 1980s. There was more sub-sea permafrost than people had expected. This was a scientific finding that changed the picture of the viability of quick production from offshore. People began to realize that, compared to the rest of the world, the cost of northern operations in the Beaufort Sea and on the North Slope were rising faster than economic inflation and interest rates. It wasn't only the price of oil at that time; it was the net price of oil compared to the cost of raising money. This caused a rather sudden change in interest.

I'll give you a quick look at what was happening in governments at the same time. First of all, there was a great growth of political and popular support for giving concerns to aboriginal people. That was one of the reasons why Judge Berger's inquiry had the tremendous influence it had. It couldn't have had that a few years before. Education, for example, was still tied to church curricula or the curricula of the provinces, and kids up here were expected to go to school and learn as if they lived in Calgary or Winnipeg.

Canada and the U.S. were squabbling about the international offshore boundary. That took a lot of attention in Ottawa and in Washington. They were also squabbling about who owned the Northwest Passage and what the sovereignty rights were. This allowed the North Slope and the Mackenzie Delta hurry-up arguments to be used as a political tool for quite other purposes than the resource situation in the North. We were getting mixed up in NORAD, the DEW Line and in what the political priorities for the north were. These were North American priorities that had quite a lot of influence on companies working in the North. At the same time, the heads of those companies were worrying about the instability of OPEC and the world price market. That was the situation then.

In science at that time, we were just beginning to get an idea of the organization of processes physically and biologically, leading to ideas of global change. How rapidly did ecosystems adapt and over what area could they adjust? How quickly could the climate make a difference to weather patterns? If the climate is mainly driven by differences in temperature across the planet as moderated by ocean currents, what does this mean for the day-to-day weather and sea ice conditions? We were just beginning to get a feeling for that.

We were also getting to understand the long-range transport of air pollutants. The Stockholm Conference of 1992 was the first widely spread scientific consensus that led to changes in government activities. Within eighteen months, 150 countries established something similar to a ministry of environment. That's one of the fastest changes we've

had for generations in the structure of governments. That put environmental questions right on the cabinet table of 150 countries. Some of that rubbed off very quickly into the North Slope situation. And yet, the idea of climate change as something coherent to be focused on had not really come up.

Some of the big drivers of our concerns at that time are long since gone. The DEW Lines are obsolete and it is now a matter of clean up. The rights of local people and communities, of the different value systems that are inherent in decision-making have been established in most northern areas. The IFA establishes this very well. It's not only here. It is true in every political entity around the Arctic Ocean. Sometimes it has gone farther, such as home rule in Greenland, sometimes it's gone into legal and financial arrangements, such as in Alaska, other times it has established separate parliaments, such as the Sami parliament in Finland and in Sweden. Here we've taken rather a different view, but at least now we have Nunavut.

This kind of development is something that is circumpolar. It couldn't be stopped, and we are right in the front of it. Each of the eight Arctic countries has taken a rather different course. Now, with organizations like the Arctic Council we are getting some mechanisms where we can compare the pros and the cons of different ways of citizenship, different levels of rights, without necessarily establishing racial differences. This is not an easy concept to work into the constitutions of most countries. And yet the citizens of most countries accept it on the whole, though not universally. In Russia now, after the break-up of the Soviet Union, there are 26 autonomous states, each having the right to their own language and education and a claim to the national budget. The national budget is close to zero, but at least they have a claim on it! That kind of development we should see in the perspective of what we're looking at here, as something that is happening on a circumpolar basis.

In terms of industry and economy changes, I believe that fifteen years of investment by the oil companies in the Canadian part of the North Slope, with the techniques and technologies available during that period, has failed to show sufficient returns. Compared, that is, to the returns from investment in most other parts of the world where there are potential deposits. That doesn't in any way negate some of the graphs we've seen about the amount of oil and gas that seems to be there on the basis of our best geological interpretation. It's also true that some of the geophysical analysis and interpretation techniques are an order of magnitude more effective than they were only fifteen years ago. We can thank the Germans and Russians for a lot of that, because they're trying to find out how much reality there is to some of the deposits in Siberia, and some of that's rubbing off over here.

The resurgence in exploration and definition activity is also I believe a careful demonstration of a faith that prices, which are presently pretty high, are going to stay high for at least a decade. No matter how you cut the cake, it is going to take ten years from exploration to oil in your car tank in the South. Therefore, it is a sign of faith that the new economy, which moves money between countries, between companies and between stock markets instantaneously, is going to keep fossil fuel prices high.

This all has an effect on another aspect of the issue, which is stability of regulations. That very vote of confidence in oil prices, on an international basis, because most of these are international companies, means that the power of any one nation to set regulations is decreasing all the time. This raises a number of dilemmas. We'll have to watch quite carefully. More and more, the issues that we have to deal with here on the North Slope are not answered on the North Slope. They're not even answered nationally anymore. They are answered on a circumpolar basis and they're answered on an international basis. We have to put what we're doing here into that context.

Let's look at some of the other kinds of changes that have happened. The international changes, the growth of community decision-making, the new roles for indigenous people have all changed the concept we have of security. Not only is the technology of the DEW Line obsolete, the need for that kind of a barrier is obsolete. Security is now looked at more in terms of environmental security. What are the chances of a people or a community being able to live the way that they want?

We are still plagued by some old-fashioned rigid concepts. We still haven't settled the Canada/U.S. border in the Beaufort Sea. That may become important now. We haven't even got universal acceptance about how to handle the sovereignty issue in the Northwest Passage. At the same time, the same people who are disagreeing are taking active part in the Arctic Council. The big break-through in that area is the allowing of permanent participation in the Arctic Council of representative of international indigenous organizations. Not as observers, but as participants. This is quite a new development in United Nations schemes.

Changes in nature and wildlife are fundamental to the changes we have to deal with here. There is an increased understanding of Arctic ecosystems: terrestrial, aquatic and marine. With that there is an increased appreciation of their vulnerability and sensitivity to change. The fact is that the strength of the low-energy ecosystems that you find in high latitudes depends upon a dynamic instability, not on constancy. Therefore, a healthy species of caribou operates in a herd which can fluctuate from enormous numbers down to very small numbers and back again. This is true of almost all of the upper levels of biological systems in areas of low overall energy.

We also have a brand-new knowledge of high-latitude climate processes, and evidence of their changes. Each year, the sophistication of our understanding and the direct evidence of current changes in the Arctic are increasing. You may have seen in the paper that by far the largest hole in the stratospheric ozone in the Antarctic is present right now. What is the reason for this? We know the causes, chemically. We know that human activities have something to do with it. Why is it so much bigger right now? It looks as though it's a combined effect.

We know that the upper atmosphere is changing on a global basis, getting much more polarized so that changes are seen more at the poles than in the middle. We know that the lower atmosphere is changing a lot faster in the north than it is in the south. We know

that the Gulf Stream, which is the main pipeline to bring heat from the tropic regions into Arctic regions, is very close to breaking up into eddies. If that's the case, it's going to be awfully rough on Finland and Norway, which are unusually warm for their latitudes.

These kinds of things are clear. You must have seen pictures in the paper of poor tourists who paid a lot of money to go to the North Pole on Russian ships this year and found no ice there. There is less ice here on the North Slope than usual. These kinds of things, in any one year, can be doubted in terms of their relation to planetary change. When they begin to add up, and they are in line with our best predictions as to the overall energy balance of the planet, we begin to feel that a person would be foolish to see them as random variations.

What are the effects of all these changes? There are lots. It is certainly going to increase the permafrost active layer and make construction difficult in permafrost regions. It is going to change sea ice. What happens if all along the Arctic coast there are a couple of years of very little ice? The wind-fetch on the waves, which has been almost negligible for the last several hundred years, is going to be much greater. Those shorelines, which are made of poorly consolidated material, will experience increased erosion. What will this do to any developments from Prudhoe Bay to the Mackenzie Delta? We really don't know. It could be quite significant.

Even more important, I think, is that changes in temperature, snowfall, snow melt and freeze-up are undoubtedly going to change the balance and timing of habitat use by terrestrial and aquatic wildlife along the North Slope. If the insects that are important for pollination and flowering come too soon because of an earlier melt, will there be a chance for plants to develop and become forage for wildlife? North Slope habitats, as everyone here understands scientifically or instinctively, are a very delicate balance of a lot of biological and physical factors. These are just at the margins of biological survivability. If you change any one of those factors or timing and you may knock down the whole house of cards.

We do know from the pollen record in the Delta that there have been catastrophic changes in the past. By in the past I mean in the past several hundred years, not in the distant geological past. I'm not sure how much that will have an effect on what we do, living from the land, managing the living resources, and looking at development of petroleum resources.

In terms of who and what is affected, clearly the changes we are seeing are affecting the growing conditions. They are affecting the timing of ecological development systems. They are obviously going to change the consequent human activities. Is the change good or bad, and for whom? I think the consensus of a lot of the people I work with is that the change itself won't cause much harm, but the speed with which it looks as though it's going to happen might be devastating. The degree of change is not that great – this part of the world has been through that before. But the changes have usually taken a century or more to happen. This time it may happen in fifteen to twenty years, we don't know.

Is it significant? Everybody in this room would probably agree that yes, it is. We don't know, but we think it's really quite significant. Of course, one of the biggest changes is the number of homo sapiens, the number of people who want to do something up here. The North Slope has never had many people before; it hasn't got a hell of a lot now. But all around is a whole crowd of people who want to do something. And they've got everything from 4-wheel drive buggies to helicopters to color cameras. And they all have an effect.

The challenges? Well, I don't need to go into the challenges. There is a real challenge for nature to adapt. We shouldn't be too supercilious – there are an awful lot of variations and opportunities that the biological and physical system can come up with that we haven't yet understood. So there is lots of room for nature to adapt. Can people adapt? Probably not too bad. Can governments adapt? I wonder. Industry can go wherever the profit is, but it's meeting a problem on the North Slope in terms of the lag time between putting the money in and getting the profit back.

Overall, I think that we've got to the stage where we have an increased maturity in being able to make decisions and take a longer-term view of our decisions. On the other hand, we've come to a stage where the signs are not good that prosperity is around the corner. Problems are around the corner. Whether we can turn them into prosperity, I don't know. I think it's honest, at least for me, to say that the worries for the future are greater than they were in 1975. Thank-you.

Keynote Address by Conference Chair

Thomas Berger, O.C., Q.C.

Thank-you friends. I am pleased that you invited me here to chair this gathering. It has been ten years since I was last at one of these conferences. It is just marvelous to see the talent and interest that you have here. I make no excuse for not regaling you with my views about the North Slope because I wrote them down 23 years ago, and I reiterated them yesterday at the opening of the conference and as I said, I think I have nothing more that is especially useful to say on the subject.

I came up here in 1974 for the Mackenzie Valley Pipeline Inquiry and was here until 1977. During that time, I tried to keep the lesson in mind that I could learn a lot from local people in places like Whitehorse and Old Crow and in the other 35 towns and villages that I visited and where I held hearings. Tonight, I'd like to compare my experience here in the North with an experience that I had in India, just a few years ago.

Here, as far as Yukoners were concerned, and the Inuvialuit and the Gwich'in were concerned, the issue was the future of the North Slope and the future of the Porcupine Caribou Herd. Weighing up the evidence, I concluded in 1977 that there should be no pipeline across the North Slope. I also concluded that we should establish a wilderness park there to preserve the calving grounds of the Porcupine herd in perpetuity and to preserve the other environmental and social values of the North Slope and the Old Crow Flats.

I pointed out at the time that we as Yukoners and Canadians, together with Alaskans and Americans, are the custodians of the Porcupine Caribou Herd. It provides the basis for a traditional way of life, and it is a wonder of nature that I have only seen duplicated on the Serengeti Plain of Africa. The migration of the wildebeest certainly put me in mind of the migration of the Porcupine caribou from the coastal plain to the Ogilvie Mountains in late summer and fall.

I found it interesting these past couple of days to realize that everyone here, whether they are in government or in industry or are ordinary members of the public, is committed to the idea that we should maintain that wilderness area and the calving grounds of the Porcupine herd. That's really something that I feel is very important. Our commitment to preserving the North Slope and its values is something that I'd like to compare now to my experience in India.

I was in India in 1991 and 1992, dealing with the future of a river valley called the Narmada Valley, in Western India. The report that we wrote came out in 1992. What I find fascinating about it is that just as the future of the North Slope implicated issues that are still with us today, the work we did in India in 1991/1992 implicated issues that are still at work in the Narmada Valley today. There they faced, as we did here, the dilemmas of development. People want progress, but none of us can agree altogether on what that means.

The rights of the indigenous people were implicated there as they have been here. There, as here, we had to weigh financial, economic, environment and social values. There I found that the power of local communities and local people, once mobilized, put me in mind of what I'd seen in the Mackenzie Valley and the Western Arctic a quarter of a century ago.

Let me tell you a little about the project in India. The project was a great water project that was to proceed on the Narmada River, which is India's fourth-largest river. It flows from central India west into the Arabian Sea. India was going to build a dam, a dam 475 meters high. It was going to divert water from the Narmada River, which had never been dammed before, into a canal that would take it 500 kilometers from the site of the dam in Gujarat, to the border with another state, called Rajasthan.

At the time this was the largest water project in the world. It aroused a lot of interest and controversy in India and around the world, because it was to entail flooding the Narmada Valley upstream of the dam. It would flood 37 000 hectares. It would flood 245 villages. It would leave 100 000 people homeless. The canal itself was to be 500 kilometers in length. The width of the canal, depending where you were along its route, would be 100 to 250 meters. The canal itself would occupy 80 000 hectares and displace about 140 000 families. This was a gigantic project.

The people, mostly peasant farmers, living in the Narmada Valley were opposed to this project. In the forests on the banks of the valley, there lived tribal people. India has of course people that we know as Indians, but before the Indians came north to India hundreds of years ago, there were people already living there. These are known as tribal people, the indigenous people of India. There are 80 million of them, and they were also opposed to the dam. So the peasant farmers in villages were opposed, and the people living higher up in the forest were opposed.

The people opposed to the dam mobilized public opinion, much of it in India. They won the support of NGOs in the United States and Europe. The European Parliament passed a resolution urging the World Bank, which was funding the project, to hold an independent review. A revered elder in India, named Baba Amte, was the symbolic leader of the protest movement, but the real dynamo behind it was a social worker from Bombay named Medha Patkar. This movement became so strong around the world that the forced World Bank was forced to hold the first independent review of any of its projects.

The World Bank was established after the Second World War to fund major industrial projects in the Third World. It is the largest source of development funds in the Third World. It funds at any time as many as 500 projects around the world. It expends about 25 billion dollars annually. It is the largest employer in Washington, D.C., after the U.S. Government. You will find that most major projects in the Third World don't proceed unless there's World Bank funding. If the World Bank won't fund it, nobody else will.

If you go to the Third World, as I did, as someone conducting a review whose outcome may determine whether the country that you're visiting is going to get money from the World Bank, you are treated extremely well. It was a real learning experience for me to realize that the World Bank has tremendous impact on development in Third World countries. They are ones who borrow from the bank; the countries of Europe, the U.S., Canada, Japan, Australia and New Zealand are the donors. We provide the money.

The board of directors of the World Bank decided they had to conduct an independent review. They asked a well-known American named Bradford Morse, an international public servant who had been Undersecretary of the United Nations, head of the U.N. Development Administration and in the 1980s had headed the campaign for famine relief in Africa. Morse had retired and was living in Florida. He was asked to chair this independent review in India. He then asked me to be the deputy chairman. Brad Morse was a wonderful man. He died a year or two ago.

Brad Morse and I got to know each other, and I agreed to be deputy chairman and the bank formally appointed me to that position. Then we had to go to Washington and sit down with the bank and work out how we were going to do this, because the bank had never done this before. They had always employed consultants.

Brad Morse and I decided that we should use the Mackenzie Valley Pipeline Inquiry as a model. He then became ill, so I spent the summer negotiating the terms of our review with the bank. It got a little edgy at times, but they agreed in the end. The bank gave us a mandate that gave us the job of looking into the measures being taken to resettle the people who were being displaced by the dam and by the canal. It also required us to look into the adequacy of the measures being taken to protect the environment. That was a pretty tall order.

Because the dam was already under construction, we had to move quickly. We hired almost immediately two people to advise us on resettlement. We hired Hugh Brody, an English sociologist, and to advise us on the engineering and environmental issues, we hired Don Gamble. I'm sure some of you know of him.

We made it clear to the bank that we had to be independent. We would have our own budget, and it was agreed that it would be one million dollars. We would go wherever we wanted to in India – India had to agree to that. We'd talk to whomever we wanted to talk to. Our recommendations would be made public. And we would have, included in our budget, sufficient funds to publish our own report. The bank gulped and then accepted our conditions. These included a further condition that we should have access to all the bank's records and consultants' reports about the project.

We arrived in India in October, 1990. The dam was being built in Gujarat, but the flooding was extending beyond Gujarat to two other states, Madhya Pradesh and Maharashtra. We went to see the chief ministers of these three states. I remember sitting with the chief minister of Maharashtra. I realized I'd come from places like the Yukon,

where the total population is not an awful lot, and here I was sitting with the chief minister of a state with 18 million people.

They wanted to see us. They wanted to talk about the project. Mr. Morse, who was affable and well known in all of these places, had worked out a routine. I'm not sure that I went willingly along with it, but I had no choice. Everywhere we went he would greet the chief minister warmly and effusively and then he would say 'and now, my colleague, Judge Berger, has a few questions.' That was a routine that he worked out, and I had to go along with it!

We conferred with the dam builders - there was what we would call a Crown Corporation responsible for the construction of the dam. And then we visited the valley. Feelings had run so high in the valley that many government representatives were not welcome in the valley, and World Bank representatives were not welcome in the valley. But people somehow had heard about the Mackenzie Valley Pipeline Inquiry and the report that I had done, and of course they knew Mr. Morse by reputation, and they welcomed us into the valley. We visited with the people. I visited many of these places, 65 peasant villages and tribal villages.

This valley is of course subtropical, so the abundance is amazing. They grow two or three crops a year. You could see these peasant villages where everyone was thriving. There was great resentment at the idea that they were going to be flooded out. They didn't know what was going to happen to them, because of course in the Third World one of the really great problems is resettlement. We have it in Canada, and the United States does as well, but we usually solve it by giving someone money and saying, 'go out and buy a house somewhere else.' In these villages, where people were farming, that isn't so easy to do, unless there is a policy that enables you to get enough money when you are flooded out to go and buy a farm somewhere else in India. The money wasn't available and the equivalent land wasn't available.

For the tribal people, the situation was even worse. The indigenous people who occupied the forests were called Adavasi. They graze some cattle, they raise some crops, and they hunt and fish. They don't speak Hindi. They have their own religion. They are quite distinct and live apart from the whole Indian caste system. They have been there for hundreds of years. When the British conquered India, they decided that the forests should belong to the Crown, to the central government. When India became independent, India didn't turn the forests over to the Adavasi, who lived there, they decided that the central government in New Delhi would own the forests. That meant that these people, who'd lived in the forests for hundreds of years, had no title to the land. They were known in India, as far as governments and bureaucrats were concerned, as encroachers. This meant that when they were flooded out, they wouldn't get any money or land, but would be treated as land-less laborers. Which meant that they would end up as many had before them, living on the streets of Bombay.

We had finished visiting a great many of these places by Christmas 1991. On the way back to Canada, I stopped in New Delhi and met the Deputy Minister of Water

Resources. I said ‘look, there are some real problems here. We’ve got to write a report about it. We’ll be back in a couple of months to visit some more villages and talk to you again. In the meantime, let me pinpoint some of the problems that I see here.’

I stressed that perhaps the biggest problem was that of treating the people who lived in the forest as encroachers who are not entitled to be resettled. I said, ‘you know, they’ve been there for a long, long time.’ He said, ‘They’ve only been there 500 years!’ At that time, North Americans were commemorating the 500th anniversary of Columbus’ arrival in the Americas. I told him that where I come from, 500 years is in fact a very long time.

You may be wondering how we could be in India on behalf of the World Bank, telling them they had to obey certain rules. India had signed an International Labour Organization Covenant back in 1958, by which it obliged itself to take measures to resettle tribal people. Also, nations who borrow money from the World Bank are obliged to subscribe to the bank’s policy, which is the most advanced of any lending institution in the Third World. The bank’s rules were quite stringent about resettlement and were generous, even providing that where indigenous people were flooded out, the entire community had to be resettled. That’s an onerous responsibility for any Third World country to undertake. However, India had signed it, and that was the bank’s policy.

Our view was that these obligations had ripened into international standards that should be enforced. The bank hadn’t enforced them, not at all. We felt the time had come to do that. These were some of our concerns on the resettlement side of the issue.

On the environmental side, there were many issues. India had an environmental assessment law, but it hadn’t been enforced. In fact, the Prime Minister of India had some years before issued a waiver stating that because this project was so important to the national interest, it would not be subject to their environmental laws. Nevertheless, India had agreed to the World Bank’s environmental standards and we felt those should be enforced.

I’ll give you an illustration of one of the problems we ran into. This dam was located about 100 kilometers from the sea. Of course, once the water reached the dam, it would be diverted into the canal and sent 500 kilometers away to Rajasthan. This altered the flow in the river below the dam. The tension of sedimentation behind the dam would mean that not only the volume of water would be altered, but also the content of the flow would be altered.

We discovered that in doing their environmental assessment, the Government of India has not even examined the downstream impact of the installation of the dam. We found that there was a Hilsa fishery, similar to our west coast salmon fishery, upon which 10 000 families depended, that was very likely to be eliminated if the dam were built. We made it clear that this was something that simply couldn’t be countenanced. This was the kind of total absence of any measure designed to protect the environment that we would have to include in our report.

We concluded our report in the summer of 1992. We found that the project was flawed, and we published our document and sent it to India and to everyone who had testified. We had a news conference in Washington, D.C. to indicate what our findings were. This was the deal that we had made with the bank – if you want an independent review, that's what you get. We found that the project was flawed and we recommended that the World Bank withdraw its funding. We concluded the report as follows:

> We think the Sardar Sarovar projects as they stand are flawed. That resettlement and rehabilitation of all those displaced by the projects is not possible under prevailing circumstances, and that environmental impacts of the projects have not been properly considered or adequately addressed. Moreover, we believe that the bank shares responsibility with India for the situation that has developed. It seems clear that engineering and economic imperatives have driven the projects to the exclusion of human and environmental concerns. India and the states involved have spent a great deal of money. No-one wants to see this money wasted, but we caution that it may be more wasteful to proceed without full knowledge of the human and environmental costs. As a result, we think that the wisest course would be for the bank to step back from the projects and consider them afresh.

The report was made public, and the Chief Minister of Gujarat, who had been elected on a platform of support for the dam and canal project, and who had wined and dined us, was to say the least disappointed. The capital of Gujarat is a city called Gandhinagar, and it is named after Mohandas K. Gandhi. Gandhi's father had been the Prime Minister of Gujarat when it was a princely state under the old British regime. Gandhi is of course their most famous son. In front of the legislative building is a gigantic statue of Gandhi.

So after our report came out, the Chief Minister of Gujarat had a parade of all the supporters of the dam, and I'm told there were thousands if not hundreds of thousands there. They paraded to the foot of the statue of Gandhi and there the Chief Minister burned a copy of our report. When I heard about it I thought, you know, I'm not sure Gandhi would have gone along with this. First of all, he believed in cottage industries and not gigantic megaprojects. Secondly, I don't think he believed that you burned books containing ideas that you didn't agree with. I mention this, however, to illustrate the depth of feeling in India for this issue.

The board of directors of the World Bank met in October of 1992 to decide what to do with our report. Bradford Morse and I were there. Brad began by greeting everyone warmly and effusively and then saying 'And now, Judge Berger will tell you about our findings'!

It was fascinating to be there, because the directors are from all over the world. But their votes are weighted according to the money that each country provides as a donor. So the United States has 25% of the votes. That's why the president of the World Bank is always an American. There are representatives from many places, but the voting is weighted so that the industrialized countries determine what is going to happen with their money. At any rate, they had a serious debate about it all, and funding was withdrawn from the project in March 1993.

India is the largest borrower from the World Bank, and this was the first time that the World Bank had ever withdrawn money from any project that it had sponsored in India. That was quite remarkable. I should pause to say that the World Bank is so concerned about the economic, environmental and social impact of big dams around the world – and it has funded about 400 big dams – that it has set up a commission to look into all the dams that the bank has funded.

India of course is a sovereign country. They said to the bank, to hell with you, we're going to build this thing anyway, we're going to raise the money ourselves. They haven't found it all that easy to raise the money, and the Supreme Court of India intervened with an injunction in the mid-1990s that stalled the project for another few years. It finally got underway in the late 1990s. The protest movement by that time was stronger than ever.

Of course, because the dam was going up, each June the monsoons caused flooding. The government of India would forcibly remove people from the villages that were going to be flooded by the monsoon and take them out and resettle them. I've been to some of the resettlement villages, and they were not cheerful places. It was difficult to see how people could adapt. They had lived in this lovely valley and then ended up in tin shacks lined up in a row, with the sun beating down and no sign of any possible productive activity. What happened is that the people would go back to their own villages each year as the monsoon receded and their villages appeared above the waves.

The tension in the valley grows greater each year as the dam gets higher and more and more villages are being flooded. An outstanding Indian novelist, Arundhati Roy, has written eloquently about the struggle in the Narmada Valley. Arundhati Roy is a woman who wrote a book a few years ago called The God of Small Things. The book won the Booker Prize in England, and she received 50 000 U.S. dollars as a prize. She donated this money to the protest movement in the Narmada Valley to enable the campaign against the projects to continue.

Arundhati Roy wrote about this issue in 1999 in an essay called 'The Greater Common Good', which has been read all over the world. I will read a bit of it to you. We may not subscribe to the temper of the language used here, but her eloquence is startling when you consider that she is speaking for the peasants and tribal people of the valley who are faced with dispossession and despair. She wrote this at the time that India and Pakistan were setting off nuclear bombs. She warned India, saying,

> Day by day, river by river, forest by forest, mountain by mountain, missile by missile, bomb by bomb - almost without our knowing it, we are being broken. Big Dams are to a Nation's 'Development' what Nuclear Bombs are to its Military Arsenal. They're both weapons of mass destruction. They're both weapons Governments use to control their own people. Both Twentieth Century emblems that mark a point in time when human intelligence has outstripped its own instinct for survival. They're both malignant indications of civilization turning upon itself. They represent the severing of the link, not just the link - the *understanding* - between human beings and the planet they live on. They scramble the intelligence that connects eggs to hens, milk to cows, food to forests,

> water to rivers, air to life and the earth to human existence. Can we unscramble it? Maybe. Inch by inch. Bomb by bomb. Dam by dam. Maybe by fighting specific wars in specific ways. We could begin in the Narmada Valley.
>
> This July will bring the last monsoon of the Twentieth Century. The ragged army in the Narmada Valley has declared that it will not move when the waters of the Sardar Sarovar reservoir rise to claim its lands and homes. Whether you love the dam or hate it, whether you want it or you don't, it is in the fitness of things that you understand the price that's being paid for it. That you have the courage to watch while the dues are cleared and the books are squared.

I take the liberty of reading that to you because it shows the intensity of the struggle in that valley which they are trying to preserve. It shows as well that they are just coming to grips with some of the issues that we dealt with a quarter century ago. That is, if you're going to build a pipeline, if you're going to build a dam, make sure you know the real price that's being paid, in social, economic and environmental terms. I'll leave that with you on the footing that it is something to think about, and said in a way that is as eloquent as you would expect in a country where they are just now coming to grips with these issues. We've had the advantage, because we are a country with advantages they don't enjoy, of solving some of these issues.

That is my experience in India, friends, and I just thought you should know about it, so that you will realize that some of the lessons we've learned here are being learned in other parts of the world. They are, I think, going to be able to provide lessons for us. Maybe one of these days they'll be coming to one of your conferences. The world is shrinking and we are making friends in many countries that are struggling with the same issues. I hope that they will have the same advantages that we have here, of a conference where we can in a civilized and well-informed way, discuss the future of this part of the world that is so blessed and that we love. Thank-you very much.

Plenary Session
"Contaminants on the North Slope: The Picture Today"

Mark Palmer, Northern Contaminants Program, DIAND

Mark Palmer gave a presentation on contaminants in the Arctic Borderlands region. The presentation was initially prepared by Colin McDonald for the Arctic Borderlands Ecological Knowledge Co-op. Funding and support for the project came largely from the Northern Affairs program, through the Yukon Contaminants Committee. It is a power-point presentation that provides a summary of contaminants in the Arctic Borderlands region.

The presentation was followed by a discussion. Conference participants were asked to discuss the usefulness of this particular presentation for getting information out to people in the communities.

Because of the presentation was in power point format, and was intended as a demonstration for discussion, it is only included here in summary. For more information, the entire presentation can be found in several places. There is a copy of the presentation at the Joint Secretariat in Inuvik, at the Aklavik Hunters and Trappers Committee office, and at the WMAC(NS) office in Whitehorse, among other places. It can also be found on the Arctic Borderlands Ecological Knowledge Co-op website at www.taiga.net/coop.

Contamination of food, air and water by toxic chemicals remains a big concern for people who rely on traditional foods in the North. Studies conducted over the last several decades have shown that pollution comes into the Arctic from other countries through the atmosphere and by ocean currents. This pollution can contain toxic chemicals from industries or agriculture that can enter the food webs in the North and accumulate in major food species.

To examine this issue for the Arctic Borderlands Co-op, a review of available data on contaminants in northern Canada and Alaska was prepared. Information was collected on the three major groups of contaminants: organochlorine contaminants and pesticides (e.g. PCBs, chlordanes, DDT, etc.), metals (e.g. mercury, cadmium, arsenic) and radionuclides (e.g. uranium, radium, cesium-137). Data for these contaminants in the Arctic Borderlands region was compared with data from other areas in the Arctic to help determine which contaminants were of greatest concern. Data were collected from scientific papers, reports and reviews on the status of contaminants in the Arctic. Much of the data are from Canadian territorial and federal agencies, however a lot of work has also been done on the Alaskan North Slope by U.S. agencies. In general, the data from the U.S. and Canada closely agree.

The studies show that the major organochlorine contaminants of concern are chlordanes, PCBs and toxaphene, which bioaccumulate to high levels in polar bear and beluga. The levels of these compounds are much lower in beluga muktuk than in blubber. The concentrations observed in these species along the Alaskan coast, northern Yukon and the

ISR are lower than those found in the eastern Canadian Arctic, but can still reach levels which cause concern. Some of the pesticides appear to be decreasing as they are used less and less in the south, but more data are needed to confirm the trends. The levels of these compounds in freshwater fish, caribou and waterfowl are much lower than in marine mammals.

Mercury levels in beluga muktuk are high enough to cause concern and appear to be increasing over the last 20 years. The reasons for this increase are not clear but it is seen in seabirds and marine mammals. Surveys of fish, caribou and waterfowl show that mercury levels are low in those species. Radionuclides, which can be deposited onto lichen and be accumulated by caribou, are low in the Porcupine herd. Also, the Americans have done large surveys in marine and terrestrial biota for radionuclides from Russian nuclear waste sites and found no contamination. Of all the contaminants reviewed, chlordanes, PCBs and mercury should be most closely monitored because of the possibility of high levels in some food species. The review did not find any contaminants that should be of immediate concern. It should be emphasized that traditional foods continue to be best foods, particularly because they are the most nutritious, and cheapest, foods available.

Workshop on Climate Change Impacts Knowledge and Priorities for the Yukon North Slope

Facilitated by Doug Urquhart and the Northern Climate ExChange

The Northern Climate ExChange has been conducting an assessment of our knowledge of climate change impacts in northern Canada. With this baseline information on what we know and what we don't know about how climate change may impact northern Canada, the challenges are now to determine:

- How communities / researchers / policy-makers / industry can best utilize this information
- What the priorities are for future research
- How the Northern Climate ExChange can make itself most useful in relaying this information to the various users

In this workshop the focus was on North Slope communities: what do people do, and what is of concern relating to climate change. The question 'so what?' was used to challenge most comments. This was to keep the focus on practical applications of climate change research and knowledge, relating to the communities' seasonal activities.

What do people do?

- boating
- whaling
- camping
- fishing
- hunting
- berry picking
- skidoo-ing
- tourists come for recreation
- DEW line clean-up
- flight of float planes

What things are important?

Increases in storms. Why? Boating becoming more hazardous; risk of camp evacuation increases; it is more difficult to hunt whales; fewer planes + less tourist activity. There have been observations of windier summers in recent years.

Landslides and erosion. Why? They can contribute to land recession on the coast (which could affect human and harvested animal habitat, such as nesting birds) and muddying of water (which could affect harvested fish populations). There have been observations of change to several local populations, including char, herring and salmon.

Ice in water. Why? It is often an obstacle to boating west from Kay Point. Icepack factors are also important to landing float planes at Herschel Island.

Wetness of tundra. Why? Caribou hunting is often done by skidoo in summer; wetness affects ability to skidoo.

Thinner Ice. Why? It causes extra risk and less security in winter travel.

Conclusions:

Wind is of fundamental importance to most of the activities occurring on the North Slope. It brings in the ice and takes it away and it is the main control over storms and water levels, and thus affects human safety, water levels and erosion rates, amount of air traffic, amount of sea traffic west of Kay Point, and potential camp evacuations.

This workshop session also identified issues considered to be less important to residents of the North Slope. For example, planning adaptive strategies to harvest whales in rougher waters may be a good idea, but the idea of having bigger boats that could be out in storms would not be helpful. Beluga are difficult to spot in whitecaps no matter how large a boat one is using.

Aspects of life that are important and could change with climate change have been noted above (hunting, fishing, whaling, sea and air travel, among others). Based on discussions at this workshop, a better understanding of changes to wind patterns, storminess, and ice dynamics are a priority, as is a better understanding of these climate impacts on coastal fish and bird habitat.

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Plenary Session
Workshop Reports

Workshop discussion centered on the following four questions:
1. What has changed?
2. Who and what are affected?
3. What are the challenges in facing these changes?
4. What can be done to meet those challenges?

Workshop recommendations are underlined in the reports.

Climate Change – Current Research on the North Slope

Resource People:
Scott Smith - Agriculture and Agri-food Canada, Summerland, B.C.
Catherine Kennedy - Vegetation Specialist, Habitat Management, YTG Renewable Resources
Dorothy Cooley, Regional Biologist, YTG Renewable Resources

Facilitators:
Hillarie Greening
Richard Gordon

Hillarie Greening:
I'll give you a very brief overview of what we talked about, and focus mainly on the challenges that we came up with. In terms of a list of recommended actions, we didn't really get to that, but there are some themes that came out that I'll highlight.

There was a presentation on Herschel Island. The presenters looked at changes that have happened to the environment, in terms of vegetation and wildlife. We went through the four questions and these are the challenges that came out.

Firstly, there is a challenge in terms of establishing benchmarks for climate change. The second challenge was data management. This actually came out quite a lot in our discussions. It was felt that in terms of data there is a real need for the existing and future data to be coordinated and available to researchers, decision-makers and interested people. A lot of people thought that this was a challenge and a possible action item.

There is also the need for traditional knowledge to be brought into the data and used. It was interesting, because we talked a lot about benchmarks and the fact that they were missing, yet a lot of people felt that traditional knowledge might be the link to filling in some of those gaps.

The third challenge was what could be done about climate change. Three points came out strongly in this area. There is a need for more research and monitoring. The second point

was about adaptation, and moving the debate more towards that. There is a need to accept that changes are happening and to think about what we can do to adapt to these changes. The third point was the need for advocacy. There is the need for local communities to get their point across, in terms of what is happening on the land and what kind of changes they're having to deal with. The Sachs Harbour video that was shown is an excellent example of that.

It was clear that there are many different goals in terms of climate change, and that's fine. Whether it's research or advocacy, people can proceed in different directions as long as there's communication.

Climate Change – Listening, Learning and Educating

Resource People:
Aynslie Ogden - Northern Climate Exchange, Whitehorse
Jennifer Catsleden - Local Observations on Climate Change, Sachs Harbour

Facilitators:
Herbert Felix
Hillarie Greening

Hillarie Greening:
This workshop didn't really follow the intended format, but it was an excellent workshop in terms of several things. Aynslie Ogden gave an excellent presentation covering the four questions, and that got us thinking. Then Jennifer Catsleden presented the Sachs Harbour video entitled Inuit Observations on Climate Change. This was an excellent example of advocacy as discussed in the workshop. The main theme of the video was that there has really been a loss of predictability in terms of the environment and how people in Sachs Harbour are having to change the way that they live because of this.

Some of the recommended actions followed on the adaptation theme: we are hearing about what's happening in Sachs Harbour and it's important to follow up on these stories and talk about how people are adapting to the changes.

One of the major conflicts that came out of this workshop, and we didn't have time to resolve it, related to the fact that there is a lot of uncertainty surrounding climate change. So do we wait to resolve this uncertainty before we take action, or do we take action now, even though the uncertainty exists? This conflict was evident in the workshop.

We need to draw on the traditional body of knowledge and integrate it into the scientific realm of research and monitoring. Data management was once again a theme and a challenge. And finally, there's the need to communicate with all groups of people that are involved.

Climate Change Gap Analysis

Facilitators:
Aynslie Ogden
Doug Urquhart

Michael Fabijan:
The focus of the climate change gap analysis was to figure out what people were actually doing out on the land and then figure out what might happen due to climate change effects.

The list of important activities on the Yukon North Slope is as follows: boating, camping activities by communities. Hunting of geese, primarily in the fall. Hunting of caribou year round. Hunting of polar bear in the winter. And whaling and fishing in the summer and early fall. There is an increase in tourism activities. There is an increase in air traffic as a result of tourism activities, which may cause disturbance to wildlife. There is the DEW line clean-ups that are going on. There is ongoing monitoring happening at various sites.

The things that people felt would affect these activities, from the point of view of climate change, are the following: wind, sea-level changes, erosion, ice-pack thinning and seasonal changes, water temperatures and unusual fish species moving into the area. The most important thing was felt to be the wind, because it has an effect on everything else. It increases seas as far as swells, which affects erosion on the land. It also moves the ice pack around.

There were several things that workshop participants felt people would do in the future if nothing happened to mitigate climate change effects. One is that people would move inland. The same harvesting activities would continue, except in some cases people might have to exert more effort to achieve the same results.

Oil and Gas Development

Resource People:
Doug Bruchet - Canadian Energy Research Institute
Steve Cowper - Private Sector Consultant

Facilitators:
Norm Snow
Billy Archie

Norm Snow:
We had two very able resource people: Steve Cowper and Doug Bruchet. I'll just give a very general summary in answer to the first question: what has changed? A lot of things have changed over the past twenty-five years. It's largely been in a positive direction. Examples would be devolution of power from Ottawa to the Territories and to the aboriginal level of government. Land claims have been settled. There have been

considerable improvements in technology, both at the community and regional level, although band width is still a problem in some communities. There have also been technological improvements in industry, particularly regarding seismic exploration. This gives industry more confidence in being able to operate effectively.

We have continued to accumulate a fair volume of baseline biophysical data. A very large amount of this data was generated during Mr. Berger's inquiry. Although the level has declined a bit over the years, there is still a fair amount there. More importantly, industry has become a lot more sensitive to environmental impacts and to dealing with the new institutional arrangements that are now in place as a result of land claims.

I'll introduce a cautionary note. One of the other things that has improved over the years is the level of certainty. That was raised in the context of certainty from the industry point of view and we've heard that industry wants more certainty in terms of the regulatory approval process. Certainty is a two way street, however. The people that live in the region also would like some element of certainty.

It's not a fever pitch in Inuvik yet, but it's getting there. This year, there were so many people enrolling at Arctic College that the residence capacity was exceeded and they couldn't house everyone. This is a clear indication that people within the region are positioning themselves for employment opportunities. I also think the regulators, the governments, need a certain level of certainty. It's not only important to satisfy industry with respect to the regulatory maze.

In terms of challenges, it was agreed that we still have quite a few of those, and it's likely we always will. The first and foremost is the pressing need to avoid the duplication of environmental review processes. That's easy to say and not terribly easy to do. It was suggested that there be some sort of round table to at least start to address this. It goes without saying that you've got to have the right people there: problem solvers rather than problem creators.

There is also a pressing need to ensure that there is a social safety net for the people of the region. This is to do not only with the anticipated influx of cash, but also the anticipated influx of people. In most cases, there's a need for infrastructure building in a major way. We talked about the need for avoiding the impact of the 'boom and bust' cycles. It was suggested that something like the Alberta Heritage Fund or the Permanent Fund in Alaska would help to divert some of the hydrocarbon money into funds for a rainy day. In light of the experience in Alaska, per capita payouts should be avoided, and a more permanent legacy of establishments would be preferred.

We shouldn't get carried away with the acquisition of vast amounts of environmental data. There will always be data gaps, I think. The simple acquisition of data doesn't necessarily translate into consensus between experts with respect to approaches, decisions and the interpretation of data. It is a good thing to acquire knowledge, but we shouldn't deceive ourselves that it's going to solve our problems, and that there is not going to be a lot of debate as to what those data mean. It was felt that baseline data for

the North Slope is substantial, with the exception of the offshore and marine part, where there is not so much meaningful data. There is clearly going to be a need for more information on the technology and impact of submarine-buried pipelines and how that relates to ice scour.

This leads to the one recommendation: There should be the establishment of a roundtable of all of the appropriate stakeholders with the legislated authority to carry out environmental assessment along the whole route of the pipeline along with whatever production and gathering system is in place. This would be an attempt to get around the 'institutional ego' phenomenon, which seems to be one of the major blocks to avoiding duplicated processes. And that some sort of agreement would be reached on how to proceed. This is an urgent thing, and I would recommend that it be done swiftly.

Oil and Gas Development

Resource People:
Doug Bruchet - Canadian Energy Research Institute
Steve Cowper - Private Sector Consultant

Facilitators:
Lindsay Staples
Richard Gordon

Lindsay Staples:
I'll add to what Norm Snow has said. I won't repeat many of the points he's made because in our group we did have the benefit of the previous group's work, and we carried on from there.

A couple of important points were made. With respect to preparedness, there was discussion regarding the skill set, knowledge and experience that's currently available within industry and government to address the development issues that are fast appearing in the region as a result of heightened oil and gas activity. It was generally recognized that as a result of the 10–12-year hiatus in oil and gas activity in the Beaufort, many people in the industry that were knowledgeable about the region, the communities and the issues have moved on or retired. Similarly, many government people who were working the regulatory side have also moved on. So, there are some fairly significant personnel issues with respect to how well-equipped people are to engage in this discussion and be prepared for the potential developments that face us. This speaks to the need for education, good communication, and most importantly the need to go back and consult the work that has been done before embarking on a new journey.

A point was also made with regard to the rigor that is required in the various regulatory processes, including claims-based regulatory processes that were initiated in the 16 years since the Inuvialuit Final Agreement. These boards and bodies need to be absolutely squeaky-clean with respect to conflicts of interest. The concern is that this is an

environment where you have increasing competition between various industrial interests, and for that matter various non-government and public interests.

If people have concern about a particular finding, or where a particular deliberation is headed, they are going to be looking right away to the fairness and adequacy of the procedures that govern that process. The observation was made that we talk a lot about co-operative management, and this has engendered a lot of co-operation. While we may know each other better than we did 15 years ago, and while we may collaborate, there is a distinction between collaboration and sleeping in bed with those you should have a more arms-length relationship with.

There was recognition that it will be a challenge for government to be prepared on social and health issues. Much of our discussion over the last couple of days has focused on environmental issues, but from a community perspective, there are some very significant social and health issues that need to be recognized. Government should be well prepared in advance of development to address those.

There was considerable discussion about living with 'boom and bust'. The impacts of this may be extreme in a place like Aklavik or Inuvik or Tuk. This is something to be carefully considered. There was interest in the Alberta Heritage Fund and the Alaska Permanent Fund, and how well those have worked. I think both Steve Cowper and Doug Bruchet suggested that one could easily find fault with both funds in the way that they've been administered and implemented. I guess the lesson that came out of that would be that yes, it's important to develop your 'rainy-day' funds for when industry leaves, but one wants to be very careful about how that money is accessed. It was suggested that funds that are generated by non-sustainable and non-renewable resources could then be reinvested in sustainable and renewable resources. For instance, in supporting the traditional users on the land.

There was quite a bit of discussion about cumulative effects and the black box that cumulative effects and cumulative impact assessment represents. No one had a magic bullet with respect to how to achieve consensus concerning the methodologies to be utilized in environmental impact assessment in addressing the considerations of cumulative effects. One recommendation that came out of the group is that there is a need to significantly 'ramp-up' the planning capacity and planning function in the Settlement Area, and particularly in the Beaufort Area and the Yukon North Slope. What was suggested was the need for increasing integration between conservation plans, development plans and resource management plans. In other words, integrated management planning. It was suggested that government play a lead role in this area, and that the stakeholders themselves should be very much involved in integrated management planning, to ensure that these plans represent and reflect the realities that people live with in the communities.

Finally, there was a suggestion that it needs to be recognized that communities today have significantly increased their capacity to govern themselves and their own affairs. If in the past, industry, government or others have assumed that the community is the ward

of the federal government, circumstances have dramatically changed. Communities have been significantly empowered over the last ten years with respect to managing their own affairs. They should be approached as equals when it comes to discussion around the future of development as it affects the region and the local people. I think that's something that is well understood for most of us in the room. It may not be well understood by those quarters of government or aspects of the industry who have not been working with communities and people in the region for the last fifteen years. It's a different region today. People are more self-reliant. That needs to be understood. Thank-you.

Tourism Development

Resource People:
Dennis Zimmerman - Inuvialuit Tourism and Arctic Nature Tours, Inuvik
Afan Jones - Outdoor Recreation Planner, YTG Renewable Resources (Wilderness Tourism Licensing Act)
Darielle Talarico - Go Wild Tours

Facilitators:
Ann McDonald
Randy Pokiak

Ann McDonald:
Frank Pokiak and I facilitated the tourism development workshop. We had presentations, generally from the industry perspective: Darielle Talarico, who operated Go Wild Tours here in Whitehorse, Dennis Zimmerman, who works with the Inuvialuit Development Corporation, and Afan Jones, who works with Renewable Resources on tourism issues here in Whitehorse.

We started the discussion with a definition of a tourist as someone who is more than 24 hours away from home or more than 80 kilometres away from home. Tourism in the North Slope has been increasing generally over the long term, but in the short term, there has been a steady decrease in the number of tourists. That represents a change, because the investment level has increased disproportionately to the number of people that are coming there. In the years 1996, 1997 and 1998, there were between 600 and 800 tourists visiting the area, in 1999, there were 900, and this year only about 600 people.

One of the reasons that was put forward for this decrease is that the marketing budget has significantly decreased in the Northwest Territories. Alaska spends approximately 16 million dollars on tourism, the Yukon has spent about 7.5 million in past years, and by comparison, the N.W.T. spends only about 750 thousand dollars. So the decrease in tourists and the decreasing marketing budget were noted as significant changes that are affecting the industry.

The Yukon now has a new Wilderness Tourism Licensing Act. This act was established through a fair amount of consultation over a number of years. It imposes new conditions

on operators. Primarily, the regulations require the operators to incur a certain amount of liability insurance. The regulations also establish standards for First Aid. Also, the regulations potentially limit operators in terms of the number of people who can operate in an area and the number of clients that they can bring in. However, it also provides a strong voice for operators in decisions that may affect their industry.

There have been changes in the supply of product. Operators come and go. There are changes in who's operating, where they're operating, and what their product is. That poses some challenges for people who are trying to sell the product and market the area. It particularly challenges those who are booking tours and arranging infrastructure such as transportation.

There is more competition in the North in general. The opening of the Dalton Highway has provided more opportunities for people to travel north. People who want to dip their toe in the Beaufort Sea now have a couple of different options to do that. That has made it a more challenging task to market this particular area.

Finally, in the way of changes, the market itself appears to be showing different kinds of interests. The tourists are interested in both a rewarding environmental experience, including contact with nature, but also are looking for authentic aboriginal experiences. That's slightly new.

Who is affected by these changes? The market is affected by changes in terms of who's operating and what they're offering, partly because they are price sensitive, but also they are sensitive in other ways. They're coming a long way, spending a lot of money, spending a lot of time planning the trip. Certainty is important, and that hasn't always been assured. On a more positive note, tourists are affected positively by the safety standards assured by the Wilderness Tourism regulations. They have some certainty about the standards of the guides.

The operators are affected by these changes because they are responding to fluctuating demands. It is difficult to plan and invest enough to provide certainty under these conditions. They have made investments in training or in infrastructure to respond to a market that isn't always assured. That causes frustration at the community level.

The Wilderness Tourism Act and Regulations has affected wilderness tourism operators. The Act is in effect in the Yukon only, so people potentially might be competing with other operators from outside the Yukon who don't have the same legislation because it doesn't exist in the Northwest Territories. It also doesn't exist in the parks. These pockets of legislation pose some challenges. Operators may also face limitations in the future in terms of the number of clients that they can bring into an area, and the areas that they can go. Carrying capacity becomes a concern.

Operators have responsibilities and requirements that they didn't previously have. These include the need to have First Aid and liability insurance. Even though the numbers of tourists are dropping right now, the intent is to increase the number of visitors to the area.

This means the wildlife, flora and fauna will be affected by increased human traffic. For example, the Inuvialuit Development Corporation, which is a highly integrated company with a lot of diversified interests, has interest in increasing the number of people they're bringing into the area. To date, there hasn't been a lot of data to establish what numbers will be acceptable and what numbers will create impacts that are not sustainable. Generally, more tourists mean more disturbance, but it is not known what the cut-off should be in terms of numbers.

In terms of challenges, there was a lot of talk about the need for benefits that are coming out of the industry to be distributed in the region, particularly to the communities. The challenge is to distribute those benefits more equitably in a spatial sense. There is also the issue of carrying capacities, and when these will be reached. Herschel Island is an example of a place that is receiving a lot of interest. While for now the traffic is restricted to a few sites, it is projected that with more visitors, this traffic may spread outward. On the other side of that coin, there is still a need to increase numbers, so that operators and investors can reach some critical thresholds in terms of providing the tours while still maintaining sustainable development levels. It's a balancing act.

What can be done? It was noted that there is a need to develop a clear vision for the industry. A tourism development strategy for the area could look at things like operator requirements, carrying capacities, the need for research, and other things. There is the need for increased marketing dollars to increase tourist numbers and compete with the increasingly diverse products that are being offered in adjacent areas. There is the need to conduct some regular and dated studies to determine if and in what ways the natural environment is vulnerable to increased traffic. There is the need to provide operators with a strong voice in decisions that affect them. It was also noted that is necessary to identify and act training needs at the community level in order to ensure that industry develops in an inclusive manner in all regions. More strategic partners with other agencies was seen as being desirable and beneficial, to provide for better use of resources to address needs and gaps. Finally, more shoulder season opportunities would address some of the critical threshold requirements of the industry.

In closing, the interests here were a good complement to the kinds of things that were being talked about in other workshops, such as climate change and oil and gas development. The tourism market has a niche of its own and has some very specific and shared interests in these areas. It was noted, however, that the interests are diverse enough that it would be beneficial to have a North Slope tourism conference to focus on these issues.

Comment: I'm Billy Archie, of Aklavik. In regards to tourism, the people of the community of Aklavik have made many complaints about the number of flights to Herschel Island. I have concerns in regards to the Herschel Island Management Plan, which hasn't been looked at. We feel it needs to be a priority that we get an idea of the impact of overflights on the subsistence activities of people in Aklavik.

Lindsay Staples: Thanks very much, Billy. The whole issue of overflights is something that certainly needs to be looked at. I know it's a real concern in Aklavik. Thanks for raising it, because I think it's an important reminder.

Traditional Use

Resource People:
Donald Aviugana - Aklavik
Danny A. Gordon - Aklavik
Billy Day - Inuvik
Richard Binder - Inuvik
Danny C. Gordon - Aklavik
Frank Pokiak - Tuktoyaktuk

Facilitators:
Carol Arey
Barney Smith

Barney Smith:
I'd like to thank the thirty people that were at the morning session and the thirty people that were at the afternoon session. In the morning, we went through presentations from our three resource people. We made cards up that covered some of the points that they had and put them up on the wall. In the afternoon session, we built on what had been discussed and tried to move a bit more into recommendations. I think all of us at the session realized that we could have gone on talking about these issues for a full two days. There was no shortage of things to talk about.

In terms of the changes, each of the six presenters made it quite clear that there were a large number of things that had not changed in terms of traditional use. They took the time to emphasize that. Specific examples speak to the values and uses of a number of species. Another example that was given is that the actual harvest levels, despite population changes, have remained fairly constant. In terms of changes, then, where we are seeing those are in the harvest practices. There are quite a lot more 'weekend hunters' rather than people on the land full-time. There has also been a major increase in the cost of traditional activities. That was repeated over and over again as a major difficulty.

With that, I'll ask Carol to mention some recommendations. We'll be taking turns with this.

Carol Arey:
For those of you that don't know me, I'm the acting president of the Aklavik Hunters and Trappers committee. Here are a few of the recommendations. I say few because there could be more, but unfortunately, we ran out of time. We could probably have used as much time as the entire conference.

More decisions need to meet the spirit of the Inuvialuit Final Agreement to maintain cultural values and traditional uses.

There needs to be more learning about and consideration of the cultural landscape in all decisions. Feedback also needs to be provided on how traditional knowledge is being used. Immediate and significant action needs to be taken to ensure that outside groups acknowledge the existence of the Inuvialuit and respect their values and way of life. We need to think 'outside the box' of current government programs and not let traditional knowledge fall between the cracks of heritage versus game. Also we need to expand heritage and cultural education programs such as curriculum, mentoring and camps. This would be very useful in our area to foster the continuing health and strength of Inuvialuit culture.

As elders pass on, an increasing number of Inuvialuit will need support to continue their traditional activities, particularly in the face of changes to the climate and environment.

Traditional uses and values are not changing, but practices are being modified as the climate changes and as wildlife distributions and behaviors change. This challenge is being faced by all Inuvialuit families. They are meeting this challenge with varying levels of success. Travel is also becoming more expensive. Lives have become busier and more complex.

Work needs to continue to study shifts in land use by Inuvialuit and to plan for future land use changes.

There is a sixty-year record of shifts in Inuvialuit land use. People felt that that study and documentation of those shifts needs to continue, to complement the harvest study, to better understand relationships and activities.

Richard Binder:
We need is to continue to evaluate the programs designed to help trappers and hunters afford to go out, and to get more beneficiaries out on the land.

Another recommendation that came out of the two workshops concerns how to get people back out on the land. Some programs are in place now, such as the GNWT program that guarantees fur prices. Other funds are available through government contributions to the Inuvialuit Final Agreement. CHAP funding is about 10 000 dollars, used in the case of the Inuvik Hunters and Trappers Committee to provide gas to those people who want to get out on the land to fishing or whaling camps. 10 000 dollars doesn't go a long way, especially when gas is almost one dollar per litre.

The other program is the Inuvialuit Harvester Assistance Program. The Inuvialuit came up with half of the money, about 1.2 million dollars, and the government came up with the other half. This money generates a certain amount of interest, and the six Inuvialuit communities use a part of that interest. Inuvik gets approximately 50 000 dollars, to assist the Inuvialuit to buy equipment. When you're looking at snow machines, and boats and

motors, that money doesn't go a long way. That program was designed so that harvesters would have to come up with 25% of the money needed, and the program would supply the other 75%. These programs are underway, but they are limited. All of these programs come out of the various regional trappers' workshops that were held in the Inuvik region. What I've heard of the past couple of days from people is that there are no programs out there that will help us build necessary things like a cabin out on the land. You can't sleep under the stars all the time. That is something we have to investigate.

Billy Archie:
Contaminants need to be a high priority in the Inuvialuit Settlement Region.

I'm the contaminants coordinator for the IRC. The contaminants priority has been identified already, through a number of studies in the past. The communities are saying that the complex graphs in some of the contaminants' presentations are hard to understand. We've got to make them so that elders and others in the community can understand them.

Another thing that's been discussed is cumulative effects. There are a number of different species in the diet of the Inuvialuit, and it is difficult to determine the impacts of eating these traditional foods. There are different contaminants and different levels in each kind of animal. We need a more systematic way of monitoring levels in various species. We need to sit down with the scientific community and see how we can help them monitor trends. We need to assess health risks versus nutrition levels in all foods, be they traditional or store-bought.

We need programs for youth to increase their understanding of contaminants and health risks. The Metis Nation has a curriculum on contaminants that's been developed for the schools. We need to make younger students more aware of contaminants and how they come to the north. That way, they will have more understanding if in the future there is an advisory to restrict intake of certain foods.

We also need to minimize pollution from communities and industry. If you tour any dump in the communities, you'll see old trucks with glycol and oil dripping out. That is not the responsibility of the Northern Contaminants Program. We need to work with different government departments to address these issues.

Question: You say that getting contaminants out of community dumps is not part of the Northern Contaminants Program. Couldn't there be cooperative programs for these kinds of clean-up activities by groups in the region? There must be interagency ways of solving these issues.

Billy Archie:
Yes, that's where we need to make a plan and ensure that we capture all contaminants issues, both at the community level and in the broader wildlife and environment. The Northern Contaminants Program, from what I understand, ends in 2003. The challenge in the ISR is to have long-term programs in place.

Ecological Monitoring – Results from North Slope Monitoring Programs

Resource People:
Scott Gilbert - Arctic Borderlands Ecological Knowledge Co-operative
Annie B. Gordon - Aklavik Community Monitoring Program
Fran Mauer - Arctic National Wildlife Refuge

Facilitators:
Richard Binder
Gary Kofinas

Richard Binder:
In this session we had three presenters: Scott Gilbert from the Arctic Borderlands Ecological Knowledge Cooperative, Annie B. Gordon from the Aklavik Community Monitoring Program and Fran Mauer from the Arctic National Wildlife Refuge.

What has changed? Well, today we have an Arctic Borderlands Ecological Knowledge Co-op. Both science and local knowledge are collected in the area. Aklavik local people and the HTC are part of this monitoring process. The Arctic National Wildlife Refuge is also tracking large mammals on the North Slope.

Several things were brought up during the discussions. Because these programs are relatively new, it was difficult to see trends in things such as snowfall, fall temperatures and break-up and freeze-up. They did notice that it is getting warmer through winter, spring and summer, but not at the Shingle Point location during the winter months. There was mention of lakes drying out, which affects muskrats and their habitat. Also mentioned were the frightening freak storms that come up and catch people off guard. There were several of those this summer. Another change mentioned was the loss of the elders and their knowledge as they pass on. That's a real concern for the community.

The Arctic Borderlands Co-op is learning that local knowledge generates ideas and questions on how systems work. We have a loche liver study, and through this type of thing information is getting back to the communities. They are also combining local legends and observations when they talk about various changes.

A few trends are emerging from the Co-op's work. There have been unusual sightings such as that of a Ring-necked Duck near Old Crow, and cougar sightings near Aklavik. People have noticed more willow growth, and that the tree line is moving north. These things may be a result of climate change. Also, the muskox reproductive rates are dropping recently.

Gary Kofinas:
Who and what are affected? Just answering this question is a challenge. It is clear from the ecological monitoring process that there are changes and trends in animal populations, distribution and movements. However, it is not clear what is causing these

changes, in many cases. When we think about change, we tend to think about animal populations. It was pointed out that it is also important to think about users' access to these resources. Changes in environmental conditions may make it difficult to get out there.

This has led to a change in locals' confidence in understanding how the system works. We just don't know what the weather is going to be in the future, because it has been so unusual. One conclusion from the Arctic Borderlands Co-op is that it appears that human activities don't seem to be stressing the environment in this region. We did hear very clearly that there are dramatic cultural changes taking place at the local level.

What are the challenges? In the monitoring process we have small sample sizes and data that is hard to collect. We have 33 indicators that are being tracked by the Co-op right now, and there are about 70 selected indicators that the Co-op had hoped to follow up. For a number of reasons, those data just aren't being pulled together. And as I mentioned, it's very difficult to explain what's happening out there. The Porcupine Caribou Herd, possibly the most studied caribou herd in the world, has decreased in population. It's not clear why that's happened.

Another challenge is to make sure that we're monitoring the right things. There is a need to go back periodically and reevaluate our indicators. The Co-op is very dependent on its partners to determine cause and effect relationships, so we have to look at our methods as well. There was quite a lot of discussion about the need to understand better how to maintain cultural traditions, languages and ways of life. We need to do a better job with language instruction. It was clear that it needs to be a grassroots effort to meet that particular challenge.

What can be done? Well, the mantra of 'collect more information, collect better information' was expressed, as well as the need to integrate the information we're getting in a better way. We need to improve the distribution and sharing of information. There was some discussion about improving population and simulation models, and to consider the concept of carrying capacity of ranges, particularly for large mammals. We need to do better work at maintaining and developing baseline information. For example, things like parasites in sheep and caribou need to be tracked more closely. Thank-you.

Ecological Monitoring – Developing Monitoring Programs

Resource People:
Gary Kofinas - Research Assistant, Professor of Public Policy, Institute of Social and Economic Research, University of Alaska, Anchorage
Ian McDonald - Conservation Biologist, Parks Canada, Inuvik
Carol Arey - Aklavik Community Monitoring Program

Facilitators:
Brian Johnston
Robert Charlie

Brian Johnston:
I'll briefly touch on some of the changes that were mentioned in the presentations and in discussions. One of the common themes is the influence that the introduction of land claims has had on, in this case, ecological monitoring. It helped to establish co-management bodies, it empowered the Inuvialuit in decision-making and helped give them a voice in setting research priorities in the region, and it brought about a new management approach in the national park as well. One of the other changes is technology with respect to monitoring. GIS, remote sensing and satellite tracking have had a major influence in recent years in the kind of data that can be collected and the quality of that data. It also changes the effects that monitoring has on wildlife. A lot of the work can now be done remotely.

Those affected include the Inuvialuit, the Gwich'in, the government agencies and the researchers.

Some of the challenges include trying to scale the monitoring from the community to the national level. Cooperation, collaboration, communication and coordination were words that came up a lot. This is in order to make monitoring more efficient and effective, and to avoid duplication. Monitoring can be made richer by integrating traditional knowledge with western science. It is important to take advantage of monitoring programs that are already out there and using them as models or integrating them with new programs.

Several recommendations came up in the discussion. One was to keep experimenting and continue to revisit the assumptions made in monitoring programs. Researchers should be flexible and open to input from all sources including community members, other researchers and managers. Recognize that monitoring is a long-term goal. One of the challenges, however, is finding long-term funding.

Some communities have had difficulty understanding the importance of long-term research when they didn't see any results in the short term or seeing what progress is being made. Interim reports is one suggestion for maintaining community support. In terms of communication, it was suggested to try a variety of methods, suited to various audiences. Posters, community consultation sessions, the internet and conferences are all ways of getting messages across to the audience.

Coastal Zone

Resource People:
Bob Bell - Chair, Fisheries Joint Management Committee
Anne Morkill - Arctic National Wildlife Refuge
Gavin Manson - Geological Survey of Canada

Facilitators:
Doug Chiperzak
Herbert Felix

Doug Chiperzak:
We had three speakers. Bob Bell presented the human dimension of the importance and uses of the coastal zone. Gavin Manson provided information on the physical processes at work, especially to do with coastal erosion. Anne Morkill presented information on the ecology and dynamics of coastal habitats in ANWR.

I'll get right into some of the challenges. Many people felt that there was a lack of recognition of the coastal zone. The focus is more on the terrestrial or marine environments, and not on the coastal interaction between land and water. Many of the impacts of development, however, will be in the coastal zone.

Another challenge is new species that are showing up in this area. People wonder how they will affect native species if they become established in this area. Many government jurisdictions share the responsibility for management in the coastal zone. The different agencies and levels of government leads to some confusion when trying to plan for the area as a whole.

Climate change needs to be addressed. Coastal erosion is changing coastal habitats. There is also the matter of transboundary effects and issues. The Beaufort Coastal zone on the Yukon North Slope is connected with Alaska. These two countries need to resolve transboundary issues. Intergovernmental efforts and coordination are required.

One of the other challenges is looking at the impacts of shipping. There's already cruise ships, and there's the potential of much larger scale shipping occurring if the opening of the Northwest Passage becomes a reality. Increased oil and gas development will also lead to more shipping in the area.

Four recommendations came out of the session. The first is a high priority one. <u>We need to improve the cooperation between different government jurisdictions at all levels.</u> This is a theme common to many of our sessions. There are two subsets to this better cooperation and coordination. The first is to revive the intergovernmental committee for arctic research between the U.S. and Canada. The second is to look at the lessons learned by other organizations who've dealt with intergovernmental coordination. One example of this is the work that's gone on in the Great Lakes.

The second recommendation is the need for coastal zone management planning or integrated management. This will provide an opportunity for more structured development, and facilitate industry in their planning, and agencies in their reviews of proposals for the area. It will lead to more opportunities for protecting the integrity of the marine environment.

The third recommendation is to complete habitat mapping of the coastal zone. This mapping is necessary so that we can make quality decisions on the uses of this area.

Finally, we recommend that the Tuktoyaktuk tide gauge be installed.

Environmental Assessment

Resource Person:
Robert Hornal - Chair, Environmental Impact Review Board

Facilitators:
Brian Johnston
Herbert Felix

Brian Johnston:
This workshop began with a presentation by Robert Hornal, the Chair of the Environmental Impact Review Board. Robert gave a very good summary of the history of environmental assessment in the region. Robert mentioned changes in legislation starting back in 1969 when the U.S. introduced their environmental impact assessment process. In 1973 the Canadian Cabinet passed a directive to start environmental assessment through the Department of Environment, though the process was unclear. In 1974 there was the Berger Inquiry. In 1984 the EARP guidelines were developed. And in 1995 CEAA came into effect.

Other changes include the passing of Land Claims. In 1975, the James Bay & Northern Quebec Agreement set provisions for environmental assessment. In 1984 the IFA established the Environmental Impact Review Board and Screening Committee. In 1990 the Umbrella Final Agreement established for the Yukon a Development Assessment Process, which is to come into effect in the future. Also, in 1992 the Gwich'in Final Agreement adopted the Mackenzie Valley environmental assessment process. In recent times the EIRB has sought and received an MOU with CEAA, to avoid duplication of the review process when possible.

Some of the new tools that have come about include the introduction of traditional knowledge into this kind of decision-making. This integration process is becoming more sophisticated. GIS technology helps provide better maps and data to deal with complex situations. The Internet and Cumulative Effects Assessment techniques are also new to this area.

Those affected include developers as well as implementers of legislation and environmental assessment practitioners.

Here are some of the challenges that came up in Robert's presentation and in the discussion. One is finding compliance with the federal assessment process. Another is finding linkage between reports, evidence, and findings. The issue that was most discussed had to do with potential conflicts between DAP and the IFA environmental impact process. Seeing as it's a draft document, the feeling was that it was best to wait and see what happens. Other challenges include finding trust in environmental assessment representation and the process itself, addressing international boundary issues, and incorporating social and cultural aspects when there is sometimes little data. CEAA itself addresses health issues, including a very broad definition of social health. It is sometimes difficult to meet that standard and the expectations that lie behind it. Data collection and assessment is often project-specific. Previous studies are not necessarily transferable to new studies.

Another big issue is dealing with linear development. It's certainly a growing concern with the pipeline issue. Cumulative effects are a big issue. Dealing with change in general is difficult, whether it's social, economic or climate related.

Here are some recommendations that came out of the discussion. Legislation should be flexible while still delivering a level of comfort that certain conditions will be met. DAP legislation should be passed quickly, and duplication or conflict with current processes should be avoided. Values should be identified clearly, through land use plans, Community Conservation Plans and Interim Resource Management Plans.

International agreements and MOUs should be pursued in order to create consistency in transboundary issues. Programs should be in place for monitoring and following up on programs that have been approved. Standardized protocol should be in place for environmental monitoring. Community conservation plans are a valuable way of looking at cumulative effects and changes in the communities, as they are updated every five years. There should be an integration of U.S. and Canadian research into the assessment of impacts. One example is the joint pipeline office. I believe that covers the recommendations.

Implementation of the IFA

Resource People:
Duane Smith - Chair, Inuvialuit Game Council
Norm Snow - Executive Director, Joint Secretariat
Allan Koprowsky - Manager, Land Claims Co-ordination, YTG Renewable Resources
Scott Alexander - Implementation Coordinator, GNWT Ministry of Aboriginal Affairs

Facilitators:
Brian Pelchat
Richard Gordon

Brian Pelchat:
What I would first like to do is thank the organizers for selecting the right resource people for this workshop. They were Duane Smith, the Chair of the Inuvialuit Game Council, Norm Snow, who is the executive director of the Inuvialuit Joint Secretariat, Allan Koprowsky, the Yukon Government Land Claims Coordinator, and Scott Alexander, the Implementation Coordinator for the GNWT. If these people can't articulate the challenges of implementing the IFA, I don't know who else can. We had some excellent presentations this morning.

What I would like to do is go straight to the challenges that were identified. I've put them in two groups. Because this agreement was signed about 16 years ago, we have faced a number of challenges and we have dealt with or are currently dealing with quite a few of them. So that's the first group I will articulate. The second group is significant current issues that still need to be addressed.

In the first group, one issue was the lack of flexibility with implementation funding coming to the agencies and flowing through to the Inuvialuit structures. That has been dealt with. It's much more flexible now. Money can be moved around between tasks and between fiscal years. That was a huge problem at one time but it's now been fixed.

Another is the whole subject of Inuvialuit/government consultations. Early on it was a typical situation, where in a government head office they would pretty much take a document to a near-final stage before they brought in the Inuvialuit for participation. That's all changed. The Inuvialuit are brought in at step one. Another issue was the need for the Inuvialuit Game Council to be involved in how Inuvialuit wildlife funding is spent. Governments weren't too open with that initially. That's taken some time, but a lot of progress has been made in that area, particularly in the Yukon. Those funds are open for the co-management bodies and IGC to be involved in.

Another issue was the need for better understanding of Inuvialuit harvesting rights on the Yukon North Slope. They are a little different than in the Northwest Territories. Also there were problems with outside influences, for example the impact of the animal rights movement on Inuvialuit hunters and trappers. The Inuvialuit as well as other aboriginal organizations are facing this challenge right now. The last one in this group is the need

for new government staff involved in implementation processes to be up to date on the land claim agreement and history before they get involved.

In the second group, I've got four current, significant challenges that need to be dealt with. The first major one is the need for government legislation to be consistent with the Inuvialuit Final Agreement. There is a long list of these, and the only one that we're aware of is that has been amended is the Yukon Wildlife Act. But there is also the GNWT Wildlife Act, the Fisheries Act, the Parks Act and others that haven't been brought up to date. We're sixteen years into the process and we still haven't got this done.

We recognize that it is a difficult task for governments to change major pieces of legislation. But even more frustrating is that there are new pieces of legislation that are coming in, such as the Species at Risk Act, which may not be consistent. You would think that governments, in creating new pieces of legislation, would ensure that they are consistent with existing land claims agreements, but this may not happen. The Inuvialuit have made inquiries about this, and the kind of response they're getting from the federal government is 'don't worry about it, your agreement is constitutionally entrenched and you'll be OK.' But down the road, once this legislation is in place, if it is inconsistent with the IFA, how is it going to be sorted out?

The second one is the question of whether the economic measures under the IFA are being achieved by governments. I understand that this year there will be a review and assessment done. The third issue related to the renewed interest in pipeline development in this area. How will this impact wildlife? It will likely create significant workloads for the co-management process under the IFA, and there is some question about whether we're ready for it and whether we have adequate resources.

The fourth issue came up at the end of the workshop, and there was some confusion about it. The question was brought up that when the Inuvialuit Game Council reaches a dead end with one of the territorial governments on a point of discussion, where do they go from there? A point was made that the territorial governments might be just an administrative arm of DIAND. We got corrected on that one. But I think the point is that there is some uncertainty, and there needs to be some clarity about the political and administrative arrangements between the territorial governments and the federal government. There certainly needs to be some clarity within the Yukon Government staff. It's a point that needs to be clarified. I'll leave it at that.

Comment: I'd like to note that the Fisheries and Oceans legislation has been changed and it is now compatible with the IFA.

Brian Pelchat: Thank-you for that information. It didn't come out in the working group, so thank-you.

Protected Areas

Resource People:
Tom Nesbitt - Chair, Tuktut Nogait National Park Management Board
Ian Brown - Warden Services Manager, Parks Canada, Inuvik
Doug Chiperzak - ISR Oceans Program Coordinator, DFO

Facilitators:
Frank Pokiak
Catherine Thiesenhausen

Frank Pokiak:
How many people from the North would rather be out hunting than sitting here? I guess that shows you how committed people are to having their concerns heard.

There were several messages that came out of this workshop. There has been a change in focus from the old ways to new relationships based on cooperative management that have created challenges for protected areas. One challenge is setting priorities due to limited funding and resources (such as people), as well as development pressures for large areas. Development is happening fast, especially in the Beaufort Sea. Increased air traffic from tourism affects, whales, birds and harvest.

Another challenge is changing our old ways of doing things. Governments and communities need to better integrate both scientific and traditional knowledge as co-management. Inuvialuit ways of managing, such as traditional knowledge, were not well documented, but science was. Board members need to bring traditional knowledge to the co-management table. Government resource people need to be informed to integrate traditional knowledge into processes and management.

Both agencies and communities need to recognize cultural differences in certain concepts, such as 'hands-on management' versus more holistic stewardship. Common concepts need to be developed. Agencies need to fully accept and integrate the concept of cooperative management. Ancestors did not have permanently protected areas; they had seasonally protected ones. Ancestors did not separate land and animals. These distinctions were brought up by elders at the workshop.

The last challenge mentioned was that communication needs to be improved between co-management board members and the parent or appointing organizations, as well as between various boards and agencies. This would help in trying to resolve changes in political priorities. It would also aid in decisions about how much research is done, for how long and how the research is done. Better coordination is needed between all agencies.

What can be done to meet these challenges for protected areas management? Recognize that cooperative management is a powerful tool if we make it work.

Wildlife Populations – Changes in how Research is Done

Resource People:
Don Russell - Canadian Wildlife Service
Catherine Pinard - Inuvialuit Harvest Study
Brian Pelchat - Chief, Regional Management, YTG Renewable Resources

Facilitators:
Joe Tetlichi
Alan Fehr

Alan Fehr:
We had three presenters. Brian Pelchat, who is with YTG, gave a nice overview of the changes co-management has brought to the North Slope. We also had Catherine Pinard, who spoke about the Inuvialuit Harvest Study, and Don Russell, who spoke about the Porcupine Caribou Management Board.

What has changed? In parts of the Northwest Territories and in the northern Yukon, land claims have been settled. This has resulted in a co-management regime that has had all sorts of impacts on research, organizations and processes. With that comes a shift from centralized government-driven decision-making and priority setting, to a process that is more community-based and co-management board driven.

There is now a greater respect for and incorporation of traditional knowledge. There are some other changes in how research is done. There has been a shift from a species approach to an ecosystem approach in studies. Studies are not necessarily of a single discipline. There are several examples of multi-disciplinary research. In some cases, we've made the switch from baseline studies to ongoing monitoring. Of course there is still the need for baseline work in some areas. And the methods are more high-tech than they used to be. Satellite collaring is an example of that.

Who and what are affected? Government and academic agencies have to approach their research differently. There are all sorts of changes in funding. There is greater requirement for community involvement and consultation. From the Inuvialuit and community perspective, they've got a huge role in decision-making and priority setting. They are also landowners now. From the researchers' point of view, many have had to reconsider their methods, again by incorporating consultation and a feedback mechanism into their research. In general, the changes have been in the roles and relationships between the three groups. There has been a shift of power from government to the communities. In terms of wildlife and habitat, it's now being co-managed, and I think everyone feels it's being better protected.

I'll list some challenges and some suggestions for handling each challenge. The first is that co-management has placed a huge burden on communities. Hunters and Trappers Committees and Renewable Resource Councils are an example of this. There is a shortage of money, a shortage of skilled people, and a shortage of people, period. In a

place like Paulatuk, you have only about 200 people. That's a shortage of people to help out with all the things that need to be done. It's not just resource management that needs to be done, there's lots of economic development going on, and people have jobs and lives to lead.

What can we do about that? There are two trains of thought. One is human capacity building: training, workshops, mentoring, working with youth. Another suggestion is that we look at what the communities actually need, make a systematic assessment, and then sit down together to begin making changes. These may be to funding allocations, staffing or in other areas. I think that it's generally known what the communities need, it's a matter of getting people to sit down around a table and make it happen.

The second challenge is to do with maintaining long-term interest in studies and monitoring. We need to maintain funding, interest and communication in the long-term. One example is the collars for the Porcupine caribou. It is an important study, but it requires constant communication with the communities to ensure that people understand why there are still collars on the caribou.

What can we do? We can take some lessons from the Inuvialuit Harvest Study. They've been able to get communities more involved and empower them to have a say in how and what is done. We also need to build local research capacity by making sure that local people are involved as field workers or interviewers when studies are going on.

The final challenge deals with the issue of communication: how do you get information back to the local communities in the right form and in a timely way? This is not just an issue for researchers. In some cases, information has been given out, but it has not been disseminated in the community. There was a suggestion that co-management bodies could be involved in an annual review, summarizing some of this information and targeting the appropriate audiences. It was suggested that posters have great visual appeal, and can be left up for those who may not have attended information sessions or meetings. Thank-you.

Wildlife Populations – Species Research

Resource People:
Dorothy Cooley - Regional Biologist, YTG Renewable Resources (caribou, muskox)
Rick Ward - Biologist, YTG Renewable Resources (moose)
John Nagy - Resources, Wildlife and Economic Development, GNWT, Inuvik (grizzly bear)

Facilitators:
Doug Larsen
Carol Arey

Carol Arey:
Our discussion yesterday was very specifically related to species research. John Nagy spoke about grizzly bear studies. Rick Ward discussed the moose survey that happened this spring. Dorothy Cooley spoke about muskox and caribou.

What has changed? Species research is being conducted in accordance with obligations under the IFA, including consultation and involvement. Based on surveys and traditional knowledge, moose have increased on the North Slope in recent years. Grizzly bear populations have been assessed on the North Slope and harvest is being managed within sustainable limits. Muskox have recently appeared on the North Slope, and this has raised a number of management issues.

Here are some recommendations. The first is that traditional knowledge should always be incorporated with survey knowledge in making management decisions and should be used in all reports. Moose should be used as an indicator of climate change on the North Slope, as they are a colonizing species that may be expanding its range north as a result of warming climate trends. Recognize that moose habitat and therefore moose populations on the North Slope are very vulnerable to development and localized over-hunting. This is because moose are concentrated in wetlands and stream habitat that is found in a relatively small proportion of the North Slope.

Continue co-management efforts established through programs such as the grizzly bear management study, which could be used as a model for other studies. This includes the use of traditional knowledge, management planning across political boundaries, reporting results back to users and co-management bodies, and managing the harvest through the HTCs.

Communications should be improved between management agencies and user groups to make sure that users understand what is in the management plans. Information should be collected to better understand the interactions between muskox and caribou. Examples of things that should be studied include parasites, disease and change in caribou migration routes based on traditional knowledge. Communities should provide input to the draft muskox management plan by December. Thank-you.

Comment: I have a recommendation. It seems we are doing a lot of population counting and surveying, but a lot of the questions I've been hearing in the workshops are about wildlife behavior. Behavioral studies are also very important, and I recommend we look into those.

Carol Arey: I'm sure that could be added in.

Closing Remarks

Thomas Berger, O.C., Q.C.

We've heard some good reports from the workshops. Everyone I've spoken to has said that the workshops were excellent. I think it's been an extremely successful conference. I would like to ask Lindsay Staples to come forward. We owe him some thanks for this conference, and perhaps he might express thanks on behalf of all of us to those folks that helped with the conference.

Lindsay Staples:
Thank-you. There are a lot of thanks owing to a lot of people. This has been by far the most successful conference we've had, in terms of the number of people that have been involved. One of the things that's absolutely critical to any conference of this type, and particularly this one, is that we need people's involvement to move the work forward. I'd really like to thank everybody who showed an interest in coming out. Your participation is critical. We've done a series of workshops on several topics over the past few years, and again, participation has always been outstanding. People have come from many different corners of Canada. I can't say enough about how much we appreciate our friends from Alaska coming here. We've built up some good friendships and relationships.

In particular, I'd like to thank Aileen Horler. She has gone beyond the call of duty in making this conference work, and I thank her on your behalf as well as on behalf of our council. Debra Ryan has been critical in terms of logistical arrangements for this conference. I'd like to also commend the Yukon Government for its assistance in making this conference happen, in particular Alan Koprowsky and Kelly Olsen. Another helpful group has been the Joint Secretariat staff from Inuvik. We needed extra resources to make the conference work, and Norm Snow and his staff have helped in many capacities. Very notably, the facilitators, the resource people and the rapporteurs have done an outstanding job. Steve Cowper, Doug Bruchet, Randall Pokiak and Fred Roots were keynote speakers and have assisted us over the last several days.

Finally, we are very grateful to have had Thomas Berger with us. We all know how much he loves these issues, and the kind of guidance he provided us 23 years ago is still very valuable today. He is a wonderful person, and his commitment to aboriginal rights and the rights of people is long-standing. He's given us a powerful reminder that the work that we're doing here, in conferences like these and over the last ten years, does have reference and application to other parts of the circumpolar world and indeed to the world at large. We should be proud of the work that we're doing here. We can learn from others, but we've also got things to teach. It's important that we remain open in our minds and hearts to the work that we can do elsewhere as well. Thank-you.

Thomas Berger:
I think this is the moment when I should, as your chairman, tell you how much I've enjoyed these three days. I've seen many old friends and made some new ones. I formally declare the conference closed until 2003.

Conference Recommendations

The following recommendations came out of the Sixth Yukon North Slope Conference, September 18-20, 2000. The recommendations were developed in the conference workshops and presented in the workshop summaries. This may not be an exhaustive list of the conference recommendations. All delegates may not have approved some recommendations. This summary list is divided according to the workshop that produced the recommendations. For more detailed information about the recommendations, please see the workshop reports.

Climate Change

Coordinate existing and future data and make it available to researchers, decision-makers and interested people.

There is a need for traditional knowledge to be bought into the data and used, particularly in the establishment of benchmarks for climate change.

Local communities need a stronger advocacy role in discussions on climate change.

Move the climate change discussion more towards adaptation. There is a need to accept that changes are happening and to think about what we can do to adapt to these changes.

We need to continue to draw on the traditional body of knowledge and integrate it into the scientific realm of research and monitoring on climate change.

Oil and Gas Development

There should be the establishment of a roundtable of all of the appropriate stakeholders with the legislated authority to carry out environmental assessment along the whole route of the proposed pipeline. This roundtable group should attempt to reach agreement on how to proceed.

Some research should go into the suggestion that funds that are generated by non-sustainable and non-renewable resources could then be reinvested in sustainable and renewable resources.

Integrated management planning should be initiated in order to 'ramp-up' the planning capacity and planning function in the Settlement Area, and particularly in the Beaufort Area and the Yukon North Slope. There is a need for increasing integration between conservation plans, development plans and resource management plans.

Governments should be prepared to address social and health issues in the communities in advance of development.

Governments and industry should recognize that communities today have significantly increased their capacity to govern themselves and their own affairs.

Tourism Development

A tourism development strategy should be developed for the area in order to develop a clear vision for the industry. Such a study could look at things like operator requirements, carrying capacities, the need for research and other things.

Marketing dollars should be increased, in order to increase tourist numbers and compete with the increasingly diverse products that are being offered in adjacent areas.

Regular and dated studies should be conducted to determine if and in what ways the natural environment is vulnerable to increased traffic.

Tourism operators should be provided with a strong voice in decisions that affect them.

Training needs at the community level should be identified and acted on in order to ensure that industry develops in an inclusive manner in all regions.

Possible shoulder season opportunities should be studied to address some of the critical threshold requirements of the industry.

It should be a priority to get an idea of the impact of overflights on the subsistence activities of people in Aklavik.

Traditional Use

More decisions need to meet the spirit of the Inuvialuit Final Agreement to maintain cultural values and traditional uses.

As elders pass on, an increasing number of Inuvialuit will need support to continue their traditional activities, particularly in the face of changes to the climate and environment.

We need to continue to evaluate the programs designed to help trappers and hunters afford to go out, and to get more beneficiaries out on the land.

Work needs to continue to study shifts in land use by Inuvialuit and to plan for future land use changes.

Contaminants need to be a high priority in the Inuvialuit Settlement Region.

Ecological Monitoring

The information arising from ecological monitoring needs to be integrated in a better way.

The distribution and sharing of information should be improved.

Population and simulation models need to be improved, and the concept of carrying capacity of ranges, particularly for large mammals, should be considered.

Better work must be done to maintain and develop baseline information. For example, things like parasites in sheep and caribou need to be tracked more closely.

Researchers should continue to experiment and revisit the assumptions made in monitoring programs.

Researchers should be flexible and open to input from all sources including community members, other researchers and managers.

Researchers should use interim reports to maintaining community support over long-term projects. They should us a variety of communication methods, suited to various audiences.

Coastal Zone

The cooperation between different government jurisdictions at all levels should be improved. The intergovernmental committee for arctic research between the U.S. and Canada should be revived. The lessons learned by other organizations that have dealt with intergovernmental coordination should be studied.

Coastal zone management planning or integrated management should be initiated.

Habitat mapping of the coastal zone should be completed.

The Tuktoyaktuk tide gauge should be installed.

Environmental Assessment

Legislation should be flexible while still delivering a level of comfort that certain conditions will be met.

DAP legislation should be passed quickly, and duplication or conflict with current processes should be avoided.

Values should be identified clearly, through land use plans, Community Conservation Plans and Interim Resource Management Plans.

International agreements and MOUs should be pursued in order to create consistency in transboundary issues.

Programs should be in place for monitoring and following up on programs that have been approved. Standardized protocol should be in place for environmental monitoring.

Community conservation plans should be used as a valuable way of looking at cumulative effects and changes in the communities, as they are updated every five years.

There should be an integration of U.S. and Canadian research into the assessment of impacts.

Implementation of the IFA

Government legislation, including the new Species at Risk Act, should be consistent with the Inuvialuit Final Agreement.

Renewed interest in pipeline development will likely create significant workloads for the co-management process under the IFA. It should be determined whether we are ready for it and whether we have adequate resources.

There needs to be more clarity about the political and administrative arrangements between the territorial governments and the federal government.

Protected Areas

Governments and communities need to better integrate both scientific and traditional knowledge as co-management. Board members need to bring traditional knowledge to the co-management table. Government resource people need to be informed to integrate traditional knowledge into processes and management.

Both agencies and communities need to recognize cultural differences in certain concepts, such as 'hands-on management' versus more holistic stewardship. Common concepts need to be developed.

Communication needs to be improved between co-management board members and the parent or appointing organizations, as well as between various boards and agencies.

We need to recognize that cooperative management is a powerful tool if we make it work.

Wildlife Populations

Human capacity building is needed in communities, through training, workshops, mentoring, working with youth. We should look at what the communities actually need, make a systematic assessment, and then sit down together to begin making changes.

The Inuvialuit Harvest Study should be used as a model for how to get communities more involved and empower them to have a say in what is done and how it is done.

We need to build local research capacity by making sure that local people are involved as field workers or interviewers when studies are going on.

Co-management bodies should be involved in an annual review of research, summarizing some of the information and targeting the appropriate audiences. Posters have great visual appeal, and can be left up for those who may not have attended information sessions or meetings.

Traditional knowledge should always be incorporated with survey knowledge in making management decisions and should be used in all reports.

Moose should be used as an indicator of climate change on the North Slope, as they are a colonizing species that may be expanding its range north as a result of warming climate trends. It should be recognized that moose habitat and therefore moose populations on the North Slope are very vulnerable to development and localized over-hunting.

Continue co-management efforts established through programs such as the grizzly bear management study, which could be used as a model for other studies. This includes the use of traditional knowledge, management planning across political boundaries, reporting results back to users and co-management bodies, and managing the harvest through the HTCs.

Communications should be improved between management agencies and user groups to make sure that users understand what is in the management plans.

Information should be collected to better understand the interactions between muskox and caribou. Examples of things that should be studied include parasites, disease and change in caribou migration routes based on traditional knowledge.

Behavioral studies as well as population studies should be considered for North Slope wildlife.