North Slope Conference . 2015

Best Practices in the Use of Aboriginal Traditional Knowledge in Resource Management

September 29-30
Kwanlin Dun Cultural Centre
Whitehorse, Yukon

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Best Practices in the Use of Aboriginal Traditional Knowledge in Resource Management

The purpose of the Conference was to promote public discussion among aboriginal people, governments, and the general public and private sectors with respect to management for the Yukon North Slope. The theme, Best Practices in the Use of Aboriginal Traditional Knowledge in Resource Management is especially significant with the increased attention by regional, national and international institutions and organizations to the role and implications of aboriginal traditional knowledge ("TK") in resource development decisions, environmental management and wildlife research. This conference addressed the current state of practice and the standards to which researchers and users of traditional knowledge should strive in the collection, documentation, communication and application of TK. It included case studies that look specifically at best practices and lessons learned as well as at ways to advance study results into decision-making.

Conference photos by Mary DeLury.

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This report is based on the transcription of audiotapes recorded at the 2015 North Slope Conference and is not intended to serve as a complete and accurate representation of the entire conference. The material has been edited for brevity and clarity. Where the recording was unintelligible the editors made best guesses about what was said based on context, notes, and memory.

Foreward

In 1984, the Inuvialuit Final Agreement (IFA) was signed by the Committee for Original Peoples Entitlement (COPE) on behalf of the Inuvialuit, and by the governments of Canada, the Northwest Territories, and Yukon. The basic goals expressed by the Inuvialuit and recognized by the parties in the Agreement are captured in the following three principles:

(a) To preserve Inuvialuit cultural identity and values within a changing northern society;
(b) To enable Inuvialuit to be equal and meaningful participants in the northern and national economy and society; and
(c) To protect and preserve the Arctic wildlife, environment, and biological productivity.

Yukon North Slope

Section 12 of the IFA includes the provisions for the Yukon North Slope, which is described as, "all those lands between the jurisdictional boundaries of Alaska and the Yukon Territory and the Northwest Territories, north of the height of land dividing the watersheds of the Porcupine River and the Beaufort Sea, and including adjacent nearshore and offshore waters and islands." Section 12 designates the Yukon North Slope as having a special conservation regime with protection of wildlife, habitat and traditional native use considered paramount.

Accordingly, Ivvavik National Park and Herschel Island Qikiqtaruk Territorial Park were created. These, along with an area east of the Babbage River that falls under a land withdrawal order, are subject to a Wildlife Conservation and Management Plan prepared by the Wildlife Management Advisory Council (North Slope). They are managed to reflect the special status of the North Slope.

Section 12 also requires a Yukon North Slope Conference be hosted by Yukon government to promote public awareness of management coordination for the Yukon North Slope. 2015 saw the 10th North Slope Conference. Over 150 delegates gathered in Whitehorse to discuss the theme, Best Practices in the Use of Aboriginal Traditional Knowledge in Resource Management. The conference focused on assessing the current state of communication, collection, documentation and application of TK. The aim of the conference was to advance the practice of incorporating traditional knowledge into resource management decisions through an examination of case studies and the sharing of participants' knowledge and experience.

Yukon Government hosted the 2015 Yukon North Slope Conference in partnership with the WMAC (NS). A special thank you goes to Mr. Robert DeLury, who generously agreed to chair the conference.

Day One: September 29, 2015

Welcome and Opening

Opening Prayer from Evelyne Storr

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

> My name is Lindsay Staples. I'm the chair of The Wildlife Management Advisory Council (North Slope), a co-management body created under the Inuvialuit Final Agreement. To introduce and open this conference I'd like to call on the Honourable Wade Istchenko, Yukon Minister of the Environment.

The Honourable Wade Istchenko, Yukon Minister of the Environment

Thanks Lindsay. Good morning everyone and thank you very much for that wonderful prayer. And thank you to everyone for being here. I'm glad you travelled safely. This is the 10th Yukon North Slope Conference, and on behalf of the Yukon government I'd like to welcome you to Whitehorse. We're pleased to host the 2015 Yukon North Slope Conference.

This conference is a requirement of the Inuvialuit Final Agreement, and its intention is to promote public discussion among Aboriginal people, governments, the general public and the private sector with respect to management of the Yukon North Slope. And I do understand this process. I was a Chair for the Alsek Renewable Resource Council for years, and it's mandated under the Umbrella Final Agreement. It's good to get together with the Elders, Aboriginal people and governments and key industry when it comes to talking about issues in the north.

This year the best practices and use of Aboriginal traditional knowledge in resource management is the conference theme. I think that is great. We are all stewards of the environment. We all have an interest in protecting our environment for the sustainable use and enjoyment of future generations. We all know the value of sharing knowledge and we can make informed decisions with this knowledge. I'm hopeful that this conference will build on the collective knowledge of all the representatives here today to advance the practice of incorporating traditional knowledge into resource management decisions.

I would like to take a moment to reflect on some of my recent travels to the North Slope. While I was up in August I went to Herschel Island to look at the territorial park and I had a chance to see Padon, and I believe Edward's here and Richard, whom I met earlier today. Those people are stewards for the North Slope. They're our best ambassadors for the Yukon, and I'm so glad to see them down here for this conference. They play a key role in welcoming visitors to the park and they take pride in sharing their cultural heritage and traditional Inuvialuit ways.

One of the vital roles they play is collecting ecological monitoring data such as weather conditions, the ice conditions, and the bird migration, among others. The condition and abundance of vegetation, establishing sample areas which in turn we share with researchers. I found myself keenly aware of how the exchange of knowledge both traditional and scientific at this type of conference will be beneficial because I saw it for myself when I visited that area.

Again, on behalf of the Yukon government, I want to thank you for inviting me here today. I wish you a successful conference. I know there are people from all across the North here, so safe travels when the conference is done and you go home. I always get a briefing note after these conferences, so I'll be looking forward to hearing about what some of your discussions were and how the application of traditional knowledge will work into decisions about wildlife management. I'll turn it back over to Lindsay, and I thank you very much and welcome.

Lindsay Staples

Thank you very much, Minister. I'd also like to invite Frank Pokiak, Chair of the Inuvialuit Game Council up to assist in opening the conference. Frank, I think is known to many of you in the room. And it's with great pleasure I introduce Frank Pokiak to you.

Frank Pokiak, Chair, Inuvialuit Game Council

Thanks Lindsay. Boy, you know, I'd just like to welcome everyone here for the 10th North Slope conference. It's been a great ride with this conference. I'd like to thank the Minister for his kind words on the North Slope there.

The theme today is best practices integrating traditional knowledge with science or with co-management. We've been doing it ever since our claim was settled. I've been involved since 1984 with some of the co-management boards, and at the beginning it was very difficult to try and point out that traditional knowledge is very important to integrate with science or research projects. And, you know, the way I saw it is the government did things their way for so long that the first three or four years, we had a very difficult time making their minds change in that they're not alone in this anymore. But through time we did convince the government people that it is very important to use traditional knowledge and I've seen it working better and better and now it's working. I still sit on a wildlife council in NWT, you know where the government sits there and we make these decisions.

A lot of the research done in our region was community driven. You can't go wrong when that happens. – Frank Pokiak

But the most important thing I found out in all the years I've been involved is, you get direction from the Hunters and Trappers Committes, they're the ones that are very important for us to make our decisions. A lot of the research that was done in our region was community driven. You can't go wrong when that happens. And I really appreciate all the communities that partook in traditional knowledge decisions and discussions because it made my job much easier going to the table and sitting down with these government people and deciding what we're going to do.

With the grizzly bear in the Inuvialuit settlement region, we have increased the grizzly bear quota three different times with just traditional knowledge, not based on science. So, that shows you the good working relationship we have with researchers. They trusted us on our decisions with people seeing more of the bears on land. So, that's one example.

I wish we could do the same with polar bear but it's sort of more difficult on the polar bear issue. You know, you've got these really high tech scientists and biologists that just have one mind. Their information is correct. They don't listen to anyone else. And through the years I found that out. And it's very difficult to sit down and try to talk to them about integrating traditional knowledge. We do bring those to the table but sometimes it's just ignored and I guess you guys know what I'm talking about. But once again I'd just like to welcome all of you here. And hopefully we'll have very, very good discussions throughout the two days. Thank you very much.

Lindsay Staples

As the Minister indicated this conference has got very unique origins in the Inuvialuit Final Agreement. It is a remarkable thing. It's been going on since 1988. And the intent of the conference is to basically allow for an exchange of knowledge and information relating to matters of concern on the Yukon North Slope. And what we found over 25 or more years is that there's a lot to learn from people in other places across the North.

And so, while the North Slope is geographically the place where the conversation began, in recent conferences we've really looked to bring in our colleagues from other parts of the North. At this conference for instance we've got just wonderful people from Arctic Quebec, Nunavut, Northwest Territories. Yukon First Nations are here in significant numbers. In the past we've had our friends from the North Slope of Alaska and Labrador. The reach of the conference is quite broad and I can assure you that over the course of the next two days you'll find that the people you're talking to come from many, many parts of the North. I encourage you to work with one another and share your knowledge, which of course is really what the content of this conference is all about.

For those people who aren't from here, and if someone says well where is the Yukon North Slope? Essentially the Yukon North Slope is between the Alaska/Yukon border in the west and the Yukon/NWT border in the east. It's basically from the height of lands or the mountains along the coast, across the coastal plain and out into the ocean. It's a large area and significant one for wildlife and for Inuvialuit use. And that's one of the reasons why it holds a special place in the Inuvialuit land claim agreement.

The focus of this conference is on best practices and the use of Aboriginal traditional knowledge in resource management. I'd like to get a couple of points out of the way right at the outset. I prefer not to spend a lot of time dissecting what we understand the definition of traditional knowledge to be. I think we can just broadly accept that it's the cumulative body of knowledge, observations, propositions, theories that are shared and transmitted by Aboriginal people across generations. And most importantly it is rooted fundamentally in Aboriginal land use. And I think that's an important part of course of what informs traditional knowledge.

The second point I'd like to make is with respect to the word traditional. It is clear that while the traditional component of traditional knowledge remains strong and vitally tied to traditional land use, there are many, many other sources now by which traditional knowledge is both transmitted and received and I think we're going to hear more about that over the course of the conference. Social media, conversations around coffee tables with researchers, the Internet, all of this in fact has informed traditional knowledge today. While we understand that traditional knowledge is rooted in traditional use and is I would suggest a life blood of traditional knowledge, we should also remember that there are multiple sources by which traditional knowledge is also informed today.

This conference is not about making the case for why traditional knowledge is important. Many of us have spent the last decade or two making that case. And we know that that case has now been made. It's made in law, it's in the Inuvialuit land claim agreement and it's in many other land claim agreements, all other land claim agreements across Northern Canada. So, at this conference I would hope that we don't need to make the argument for why it's important. We know it's important and I think the focus of this conference is more what can we do to make sure that it's used to the best extent possible and that the highest quality of traditional knowledge is being used.

Our need for this conference is based on our growing experience with the treatment of traditional knowledge. So, for instance over a decade now, pursuant to the Federal Species at Risk Act, the committee for The Status of Endangered Wildlife in Canada has an Aboriginal TK subcommittee. And I think there's at least one person from that subcommittee who's attending the conference and I'm delighted by that. You may have a chance to hear from that person in the working groups what their experience has been.

Many of you have generated or participated in a growing number of traditional knowledge studies. Our council has generated a number over the years, most recently in partnership with The Wildlife Management Wildlife Advisory Council North Slope. We did a major traditional knowledge study of polar bears in the western Arctic that involves 75 polar bear harvesters in six communities. And we put a lot of time into looking at the methodology by which that knowledge was collected. We learned a lot. There's some things that we could have done better and I think we've been candid about what those areas are in the report. But I think what that report indicated to us was the need to really, if you will, get our house in order with respect to what the best practices are for how we collect, communicate, document and use traditional knowledge.

In addition, at the international level, the International Union for the Conservation of Nature is seriously looking at how to better incorporate traditional knowledge into red list assessments of populations. One subcommittee, the Sustainable Use and Traditional Livelihoods committee, is looking seriously at how traditional use and traditional knowledge can be better incorporated into all the species specialist groups at the IUCN level.

And this is a really important consideration as well--there is this really important body around the world of Indigenous knowledge that those who are involved in doing population status assessments are better at considering. They're looking at how traditional knowledge can be used in their status assessments.

At the same time, traditional knowledge is being used more, and in decisions that involve population status assessments, determining harvest quotas, determining go- and no-go areas for developers and major industrial projects. Because it's being used more and more for those purposes, it's also under increasing scrutiny.

Just as we're putting research by Western scientists under increasing scrutiny, particularly when we don't like the results of what is being reported out, it's more than fair that traditional knowledge will also be placed under increasing scrutiny as well. And so, how we collect the information, and the quality of that information is something that we can expect to be essentially tested.

Again, that's part of what this conference is about - looking at how we make sure that the work we're doing is of the highest quality and of the highest standards. So that when it is under scrutiny and when it is being tested, we meet the test. And I think that's something-- I'm hoping--that this conference can contribute to in a substantial way.

In addition we know there are significant differences between the character of traditional knowledge and the character of science-based knowledge. And I suspect that's something we're going to talk about over the course of the next couple of days.

Recently I was looking at a book called The Meaning of Sea Ice which is a traditional knowledge study. It's a case study of three communities,one in Alaska, one in Nunavut and one in Greenland, and it's basically looking at how Inuit peoples understand and relate to sea ice. It's a really special report in a special book and I really recommend it to you.

One of the exercises the authors did at the beginning of that book – and I won't get into details – but essentially they assembled two word clouds. A word cloud is words that appear frequently within a particular user group. So, they looked at 30 published articles on sea ice by scientists, and the words that continually repeat themselves refer to physical properties or something associated with physical properties like thickness of ice, the temperature, the extent of sea ice and so on.

When the word cloud was generated for the Traditional Knowledge Holders, it was again based on a word search of interviews of TK holders. The words that came up tended not to be physical properties, but about social relationships – they were words about relationships to the ice, relationship to animals that lived on the ice. There were words such as "The sea ice is my home." Very, very different sets of words.

I think when you start to look at these kinds of word associations it suggests that yeah, there really are some fundamental differences between these two bodies of knowledge. Part of the challenge of course is how we communicate across those very different worlds. In some cases we've been somewhat successful at it and in other cases less so.

I think part of the work of this conference is to look at the issue of communication, where these bodies of knowledge converge and where they can be integrated. We should better understand how that can be done and where that works. We should also accept the fact that these are different forms of knowledge and in some cases they cannot be integrated and they stand in their own right as separate forms of knowledge and multiple lines of evidence.

In a practical case when you're a decision maker and you're faced with a body of TK on the one hand and a body of findings of science on the other and they don't agree, what do you do? How do you address those differences? I think that's a really important question for this conference to address.

With regard to the point about the word associations, the only other point I would make is we often talk about science on the one hand and TK on the other. I think what these word clouds suggest is, it's more complicated than that. And many of us know that. That there's not just this huge monolithic structure called science. Science has many components. And there are those who do the work of the physical sciences like the biologists and the ecologists, but there's also the work the social scientists do; the anthropologists, sociologists, social scientists.

Now I can tell you they have their own disagreements between one another. So, it's not simply just this dichotomy between TK holders and science. There are these dichotomies within the field of science itself. One of the things that I'm really pleased to announce or observe is that there are many social scientists with us here today. I'm really delighted because I think they're going to inject some new insights into the conversation that perhaps we haven't been witness to in the past.

I would really like to acknowledge the fine work that's been done for over 40 years in Alaska by the Alaska Department of Fish and Game. In that department, the Subsistence division has for over 40 years employed an army of anthropologists and social scientists to do the work of mapping social science practices in Alaska. So, those guys have really paved the way, and I think in Canada we're playing catch up.

With regard to the focus on the state of practice, I suspect that there's four areas at least that we're going to work across over the conference. One is how we collect TK—the process by which it's collected. How do we work with communities, how do we work with TK holders? How do we make sure that it's a relationship of respect? With respect to the documentation of TK, how do we document it? What kind of mapping technologies are we using? Are we using paper? Are we using digital? When it comes to recording, are we doing audio? Are we doing visual? Are we doing audio visual? Those kinds of considerations I think are a function of the documentation of TK.

When it comes to its communication, how do we communicate it? Is it through a book? Is it by having elders appear before a tribunal? When it comes to sharing TK with other generations do we do podcasts? Are we using social media, how are we communicating TK today particularly to younger people?

And finally with respect to tribunals, how are they approaching the use of TK? If you're a review board or an assessment board and you're looking at a major industrial project, how does your forum allow for the participation of TK holders or elders? Many of these forums are typically adversarial. How do you accommodate, someone who comes into it without an adversarial kind of frame of mind. And then, as a group of people who have to make decisions as I said earlier you've got multiple lines of evidence. How do you weigh the evidence, especially given the principle that you're going to give equal weight to these lines of evidence? Those are things for us to be thinking about.

A friend of mine, John Donihee--I think many of us in the room know John, John is a lawyer who has been council to many review boards across the north including the Environmental Impact Review Board under the Inuvialuit agreement. John was remarking the other day that the easy part is writing TK into law, the hard part is taking it forward and applying it. And we were both reminded of the similar challenges for those who are involved in cumulative effects assessment. The easiest thing was to write the requirement for cumulative effects assessment into law. Conducting cumulative effects assessment is a whole other story and there's huge ambiguity with respect to the guidance that is provided federally and territorially and provincially; with respect to how we do cumulative effects assessment. From my point of view this is the reason why it's such a mess.

The same challenge I would suggest applies to TK: we know the requirement is there, how do we make good on the requirement? What kind of good guidance can we give to those who use it and those who generate it? And that's again what this conference is about – what kind of guidance can we give to improve the state of practice with regard to TK?

Finally let me just simply say that this “workshop” is really in workshop format. We've got a number of panels, three of them over the course of the next two days. For those of you who have been to previous conferences, these panels are much, much smaller. As a point of departure we really wanted to have breakout groups to allow more conversation amongst the conference participants. And so, we're trying to treat this conference as more conversational.

The one thing I really want to stress is that there is a tremendous amount of talent in this room. I was going through the participation list the other day and I can tell you, quite apart from the people who are presenting on these panels, there's a tremendous amount of expertise around the tables here, to the extent that there are many, many other people who could have been on these panels over the course of the next two days. I want to acknowledge that right up front.

But that also underscores the real importance of these breakout groups and the real heavy lifting we're anticipating that these breakout groups are going to do. So, it's not just the conversation or the presentations, these presentations or panels are really points of departure to give you some food for thought. But we're really looking for the lift off to occur in the working groups. And so, we've really been quite I think selective with respect to spreading you across a number of working groups and you're going to hear more about that a little later on.

So, that's really the business of the event. My final honour is to introduce to you the Chair of this year's North Slope conference. There is a long history of Chairs of this event that have had significant attachment to or standing with the Yukon North Slope in one way or another. And for those of you who aren't familiar with the who's who of who has previously been Chairs, Justice Thomas Berger chaired two of these events. Andrew, Andy Thompson, who was just an outstanding lawyer when it came to northern resource management and northern resource law, chaired one of these conferences. We've had the former minister of Aboriginal and Northern Affairs Canada, the honourable Hugh Faulkner. He was the Minister who signed the Inuvialuit Final Agreement. There is a long tradition of honouring those people who have given part of their lives to the work of the North Slope.

And I can't think of anyone who's given more time and energy to the Yukon North Slope than this year's Chair, Bob DeLury. Bob is trained as a zoologist. But for twenty years of his life between the mid 1970s and the mid 1990s, Bob worked tirelessly to negotiate the Inuvialuit Final Agreement and the implementation of the agreement. And it's been some 20 years since Bob has been actively involved with the agreement, but some of us spent some time with Bob yesterday in a workshop, and I can tell you that he has not lost a single step with respect to the facility and understanding of that agreement. I couldn't be more delighted that we're able to honour Bob by having him chair this year's conference.

The other person I would like to introduce to you just as a matter of courtesy—as a departure from past conferences, the chair and ourselves are going to be assisted this year by I guess what I'm calling our chief facilitator Bryan Evans. Some of us have worked with Bryan before. Bryan comes to us from Vancouver and has worked with the WMAC(NS) as a consultant from time to time. He has also spent a great deal of time working with the Taku River Tlingit on the conservation design in the Taku and so Brian is exceptionally comfortable with the conversations that are going to be occurring over the course of the next two days. But it's Bryan's challenge to drive us through to a conclusion tomorrow at 4:30. There's a lot to do in two days. I can tell you it will be a breathtaking pace at which we're going to be doing the work. So, I want to thank Bryan-- thank you Bryan for making the trip here.

With that, as I said it's a huge honour for me to be able to introduce to you the chair of the 10th Yukon North Slope Conference, Bob DeLury and I really, really would be pleased if you would join me in an enthusiastic welcome for Bob.

Robert DeLury, 2015 Yukon North Slope Conference Chair

Well, a lot of nice things have been said. Welcome everyone, and honoured guests. This is the first conference I've been to, and I wasn't really keen on coming, actually. I don't like conferences generally. [But] I thought about it for awhile and I thought, this is something that is going to be really interesting. We're talking about traditional knowledge among people I know and understand, and a lot of other people. And it's a fascinating subject. I never understood that there should be any problem with biologists and traditional knowledge because I come from an old, simpler life.

As a biologist I went up to the Northern Yukon in 1970, spent a few years there and then I went over to work with COPE as a biologist. And I had to try to work out the conflicts between resource development, which was moving into the offshore at that point in time, and the Inuvialuit harvesters. As a biologist, I liked to think I knew something about the area but I didn't. Quite frankly, all the knowledge we had, all the expertise that was there, the Inuvialuit had. And for my purposes it was just excellent knowledge. If you want to put it in scientific terms, it was always from people that were peer reviewed by their own community. You could go to any community and ask anyone, 'Who do I talk to to find out about X or Y or Z?' and they'd all tell you the same people. Everybody respected people with knowledge.

> Frankly, all the knowledge we had, all the expertise that was there, the Inuvialuit had. And for my purposes it was just excellent knowledge.
>
> – Robert DeLury

In my course of trying to work out resource management with wildlife and non-renewable resources, I've seen the best relationships between managers and the Inuvialuit, and the worst. I never understood the worst. It was just as Frank said, they seem to have one narrow view of the world. They don't listen. If you're a biologist, you try to think things out from an evolutionary point of view. Look, these people have lived for thousands of years in a very harsh environment. They've made a good living. They've survived. Boy, not only did they have to do something right, they had to do everything right. I have a tremendous amount of respect for that knowledge and information.

That's my simple world. Science can add to it. As Frank said, you can put tags on things, get computer read-outs. But that's just another piece of the puzzle. I think the last reason I came is that, as Lindsay said, it's very exciting to

get such a diverse group of wisdom and knowledge and experience to bear on a really important issue. It's important now; it's going to be important in the future. And for me there's nothing more exciting than that.

I come from a simple time and I want to learn what you had to say. I haven't been involved for 20 years and obviously an awful lot has changed. We've learned a lot and I'm just really excited to be part of what you're going to be doing today. I know I'll be better for it and I hope you all are too. So, welcome, Brian.

Bryan Evans, Facilitator, 2015 Yukon North Slope Conference

Good morning everyone. I'm glad to be here at the beautiful Kwanlin Dun Cultural Centre. I recognize a few friends in the room and I'm certain I'll make a bunch of new friends over the next couple of days. We have a large gathering today. We anticipated about 70 people when we organized the workshop. I think we have 158 — that's double what we thought. There's a lot of brain power in the room, as has been said. And we really want to give you all a huge opportunity to contribute your knowledge and expertise over the next couple of days.

I just want to walk though the agenda briefly. I thought I had this agenda pretty clear in my mind until I met with the Pokiak brothers last night. I had a beer with Charles and Boogie and Calvin and James and couldn't stop laughing. In particular Charles did some impersonations of wildlife, and some songs. And I thought, there's going to have to be a time in the agenda for Charles to do that. So, Charles I'm not sure where you are out there but get ready, maybe tomorrow morning right after people have their coffee we'll get you up here if you're willing to do that.

If you follow along, Lindsay has done a very nice job, as have others, of giving the broad sense of the workshop and the themes. We designed a workshop that would be in three sessions. The first is around gathering knowledge, the second around documenting that knowledge, and the third is about how that knowledge, that traditional knowledge, is used in resource management, in decision-making.

For each one of those themes we're going to start with a panel discussion. I ask that you hold your questions to panellists to allow the panellists to get through their presentations. And then we'll have an open plenary Q&A.

That will be about an hour per session, and then we'll go to breakout groups for about an hour. I think we have seven breakout groups. We have facilitators for each session. We'll record on flip charts the discussion in those sessions, then we'll come back and have the facilitators for each group report back to the larger plenary.

We're now going to turn to the first panel. I'm invite Brenda Parlee, the Canada Chair of Social Responses to Ecological Change from the University of Alberta to present for about 20 minutes. And then we'll have a sub-panel of Aboriginal traditional knowledge holders that Lindsay will facilitate.

Panel One: Mobilizing Knowledge

Questions to explore:

- What does TK provide to wildlife management that science-based knowledge does not?
- What does science need from TK, in what circumstances and for what purpose?
- What does TK need from science, in what circumstances and for what purpose?
- How can scientists and TK holders better communicate and work with each other? What barriers need to be overcome?
- How is TK best documented, communicated and shared?

Brenda Parlee, Canada Chair in Social Responses to Ecological Change, University of Alberta

Thank you everyone. I'll start by saying there is a long history of non-Aboriginal people from Southern Canada coming north and trying to tell people what's going on and that's certainly not my intention. I'm very honoured to be involved in this conference and honoured to be part of this panel presentation with other esteemed colleagues from the north.

I'm going to talk about some of my own experiences and reflections about the challenges of documenting traditional knowledge, and reflect on different ways traditional knowledge is used in resource management. I'll spend a bit of time initially talking about some general definitions and then offer some hopefully constructive, maybe perceived as a bit grumpy comments, based on previous experiences I've had working in the north. "Grumpy" in the sense that while there's a great deal of progress around the recognition and respect of traditional knowledge, in many situations we're still challenged in terms of the dichotomies between TK and science, government, and non-Aboriginal people and Aboriginal people.

There are things to reflect on in this conference and what I'm going to present are perhaps questions for discussion in the breakout group.

I'm a professor in the Faculty of Native Studies and the Faculty of Agricultural Life and Environmental sciences. However most of what I've learned and am reflecting on today has come from experiences working mainly in the Northwest Territories with different First Nations and Inuvialuit communities as well as with co-management

boards. I've been involved, over the last 23 years, in about nine environmental assessment processes, and about 15 different kinds of traditional knowledge research projects done in collaboration with communities.

My most recent projects focused on some of the challenges around declining barren-ground caribou populations in the NWT. That's going to be the case study I reflect on more than any of the others. I respectfully honour the communities who contributed to the reflections I offer in this presentation.

Lindsay offered an accepted definition of traditional knowledge that will probably be the working definition you all use in your breakout groups. But of course TK is known by very different names at the local level. The idea of traditional knowledge, that label, is something that's come out of academic and government processes. I'd like to offer some suggestions, to reflect more deeply, on the local context or the communities in which people are working, and understand what the appropriate framing of traditional knowledge is in that environment.

A key in the documentation of traditional knowledge is that it is different than western science. That's the starting point – that the knowledge generated within communities through land use practices is quite different than science.

We start out even in these conferences with these dichotomies, in which we're placing scientist over there and traditional knowledge holders over here. Those of us who are involved in co-management of resources realize it's actually quite messy and more interesting, that people work together in very different ways and knowledge is interconnected in many different ways. So it's important to challenge assumptions about what is science at the same time we're asking what is traditional knowledge. Why are we having a conference just about what is traditional knowledge – perhaps we need at various times to turn the lens around and ask what is science?

I'll spend a bit of time on this slide, a schematic from my colleague Fikret Berkes, a professor at the University of Manitoba, where we're looking at different dimensions of traditional knowledge. A lot of times, especially in environmental assessment processes or different kinds of co-management, traditional knowledge is considered just some form of data we input into scientific models of management. It is simply the observations people make on the land or historical memories people have of climate or where the beaver dens are or when ice break-up was.

Traditional knowledge is much more than just local data – that knowledge stems from or is part of a whole set of land use practices, but is also part of the management or livelihood decision-making frameworks that exist in communities. We can't separate TK from the kinds of governance structures that exist within local communities. When we try, or in situations where TK is documented and extracted from communities and set aside in a report, or a species at risk, or a climate change adaptation model, there are challenges, where people get quite upset within communities, or can be, when that information is taken out of that local context. That's an important problem or challenge we're facing.

The other assumption that's often made, and people struggle with in this room I'm sure , is that traditional knowledge comes from traditional, a.k.a historical, land use practices, that people aren't spending as much time on the land anymore and that therefore youth are not receiving or are not the beneficiaries of traditional knowledge, as they used to be. The assumption that that knowledge can only come from traditional practices that, you know, happened in 1932, is a real disservice or disrespect to the idea that traditional knowledge is cumulative, it evolves over generation after generation. People in 1932 probably thought that kids knew nothing then either, the real traditional knowledge existed in 1850. And the people in 1850 probably thought youth know nothing today. The real knowledge comes from when people lived in the 1800's.

I think position youth are put in, or where the language is that "youth know nothing today," is challenging and I would suggest we reflect a bit on that. Certainly there are challenges in youth being educated on the land. There are also challenges with youth being educated in formal education systems. And I think that's one of the

challenges we face: what role you play in this traditional knowledge paradigm in which historical practices are privileged or seen as most important.

The other issue, maybe more so in some parts of the north than others, is that there's often a gender difference, a dichotomy. There's an awful lot of traditional knowledge documented with or by men. Women, the traditional knowledge of women, tends not to be privileged or seen much in a co-management context or the academic literature. I believe Kiri Staples did a wonderful thesis on the gender differences for example on co-management board. So, how many women sit on co-management boards versus men? That's a real challenge when we're looking at traditional knowledge as a system of knowledge that comes from communities. Where is the knowledge of women? What is the knowledge of youth and what is the community context?

Another challenge around traditional knowledge, and when it is documented or included in environmental assessments or co-management, is the tendency to look at it as anecdotal or entirely qualitative or narrative. It's offered in story format, but there are many different ways in which knowledge is produced that are quantitative as well as qualitative. It's important to recognize that many kinds of knowledges that are produced are highly systematic. People have been hunting in the same places, watching the same kind of indicators, doing the same kinds of land use activities generation after generation. If you look at the Litmus test for what is good, rigorous science, that is good rigorous science and knowledge; it's that systematic nature of the knowledge system.

Again there are a lot of challenges when we're looking at the integration of traditional knowledge with science. People use words like integration or linking or equitable consideration of traditional knowledge and science. But as you know in this room there usually is a privileging of science over traditional knowledge for a variety of reasons when we're talking about government decision-making. A lot of traditional knowledge has yet to be documented in a format where it's easy to include in decision-making. Looking at new and different ways of ensuring that that knowledge is equitably considered is critical.

One of the main points I'd like to make is just the extent to which conversations and concerns over traditional knowledge versus science are described in academia as kind of epistemological, when they're actually governance problems. Biologists and elders or traditional knowledge holders get along fine. They make similar observations, though they may have different methods. But it's the use of the science or the use of TK in decision-making where things tend to fall apart or where we see differences in how people interpret what's going on.

Biologists and elders or traditional knowledge holders get along fine. They make similar observations, though they may have different methods. But it's the use of the science or of TK in decision-making where things tend to fall apart or where we see differences in how people interpret what's going on. – Brenda Parlee

In terms of the importance of traditional knowledge in decision-making, as I said there's a tendency to look at it as data that can be inputted in a scientific model. But there are many different ways in which traditional knowledge may influence what is going down in co-management decisions.

As scientists or non-Aboriginal or non-TK holders, we look at TK through a lens and we pick out the stuff that matters to the scientific framework. Everything else gets left, and we do a disservice to traditional knowledge when we're just extracting little pieces that fit into our models.

The flip side, that those of you in the room might know, as traditional knowledge holders, is listening to scientists talking about a species or a particular project or an issue and pulling out stuff that matters at the local level, right? So, there are different ways in which we hear each other but we don't necessarily listen. The tendency sure has been that scientists will listen to what's being said and only some of that knowledge is being considered valid. TK holders do the same thing; people have the need for a certain kind of knowledge at the local level. Some of what is said by scientists is considered useful and valid and the rest of it is considered perhaps not trustworthy or not particularly useful or the methods disrespectful. I think that the communication and the listening piece is key.

I've been in meetings where biologists or others say perhaps we just need glossier posters or we need to speak louder or have more meetings and then people will understand more about what we're saying about barren-ground caribou or polar bear; if we just spoke louder, if we had better graphs, people would get it. Actually people are listening, but there are different ways in which what is being said is being dismissed as not relevant or not important or is false. I think that's a challenge that we might want to consider moving forward.

Frank mentioned the polar bear example as one in which we see a lot of different kinds of battles going on between decision-makers at the co-management board, at the community level, at the international scale and between biologists and TK holders. I'm not going to talk about polar bear, but the other issue which most of you in this room are familiar with is the case of barren-ground caribou population change and some of the challenges that have existed in the Yukon and the Northwest Territories over the last decade or so.

I've done most of my work around Yellowknife, in which we know the Bathurst caribou herd, which peaked perhaps at about 450,000 animals, is at 18,000 now or less. We're seeing dramatic shifts in the availability of species that are so important socially, economically and culturally. Some of these discussions about working together, the connections between science and TK, sound really good when resources are abundant, but when resources are scarce, that's kind of the Litmus test in terms of how people actually respect each other or the ways in which TK is actually reasonable considered.

Since 2007 I've been involved in a number of different research activities with local communities. We had a project funded by the International Polar Year and another project funded by the Social Sciences and Humanities Research Council. Since that time we did research with more than nine communities across the NTW in the Inuvialuit, Gwich'in and Sahtu regions as well as in communities around Yellowknife, Lutsel K'e Dene First Nation being an important collaborator of mine over the last 20 years. Many of those projects didn't focus on the biology piece but around how communities were being affected by and responding to what was reported in this region as a decline in the Porcupine caribou herd, in the Sahtu as well as Cape Bathurst and the Bluenose East and West.

Since we started that project in 2007, there were some tensions and concerns. The dialogue around management of barren-ground caribou has certainly heated up since 2007. It's become an emotional issue for many people. And there's a lot of lessons to be learned. Certainly in this region, where the Porcupine caribou population is higher than was originally estimated, things are okay and so this is a good region to offer some reflections. Around Yellowknife people are still in perhaps a more complex situation. And the issue is still very real and of concern.

Some of the obvious points that you will know from living in the NWT and Yukon is that people read what's going on in the environment in very different ways. The kind of top-down management or harvest management planning that can develop doesn't necessarily account for some of the diversity and complexity within communities. There's a lot of debate as you know from this region about whether there was a decline in the Porcupine caribou at all, or whether the methods used to track or the surveys themselves were problematic. And most of what we're looking at is the extent to which TK was or was not included.

Across the Northwest Territories many different factors affected whether biologists and communities got along. The extent to which there's a land claim settlement and effective co-management boards like in the Inuvialuit region, or around Yellowknife where the Tlicho self-government agreement is, compared to other regions where people are not as connected to biologists or ongoing conversation as they are here. Where communities are within the caribou range also affects what kind of changes they're seeing in the herd. The extent to which people have experienced the population decline before affects the way in which they read that landscape and that issue. There are many, many factors and certainly I'm not trying to over-generalize here, but there are exciting things to learn from each and every community about what's going on.

One of the conversations I had over the last number of years with biologists about the issue is the attempt to make the assumption that all communities, everyone in the community, saw a decline in population. There was no real social science research done, it was just assumed that the individual sitting at the co-management table spoke for everyone in the community or everyone in their region. But there were many and still are many different perspectives on what was going on in the landscape.

Just in relation to that statement, that everyone saw a population decline in the Porcupine range, we did research in three different communities, looking at the extent to which people were in fact seeing a drop in numbers or a change in range. We were able to create a better understanding of what was going on in the landscape. Communities where there was an absolute yes, we have seen an absolute decline in numbers, tended to be in the outer range of, say, the Bluenose West caribou herd. Communities more in the central part of the range, did not see a decline as much. Accounting for all of that diversity was important and I think some of that may have been overlooked. There are lessons to be learned in understanding what the local perspectives are.

The other concern around the documentation of knowledge in communities is the extent to which that knowledge would inform local decision-making about caribou management or caribou harvesting. As you know, co-management boards make certain kinds of decisions, territorial governments make other kinds of decisions, but on a daily basis harvesters make decisions about where and how to hunt and how many caribou they may harvest. And so, the feedback loop between knowledge being documented within the communities, and the decisions that individual harvesters are making--I think there's less recognition of that aspect of governance at that scale.

I worked with the community of Fort McPherson looking at what kind of rules people understood for respecting caribou. Were those government rules? Were those community rules? Were those co-management board guidelines? And what was important and interesting about the outcomes of that study was that people were more aware of local norms and more abiding by traditional knowledge rules than they were aware of rules at the government scale. And so again creating rules at the territorial level or at a regional level or just talking louder and producing more glossy posters may not be the most effective way of translating

those decisions at the local level. But paying more attention to what is going on individually on the ground is perhaps a better indicator of aspects of management.

As I said earlier from looking at caribou and other aspects of traditional knowledge versus science, it's actually not an epistemological or a knowledge conflict that is often going on, it's a governance conflict. There are many kinds of issues certainly here in the Yukon around governance of caribou.

One of the challenges right across the north with respect to barren-ground caribou, and certainly here in the Yukon, is where harvesting is considered to be one factor influencing the dynamics of the herd, there are many other kinds of influences, stresses on caribou populations and caribou habitat, like climate change, like resource development. However harvesting is something that is easily controllable or something in which people have jurisdiction.

Right across the north where we've seen population decline, the attempt to impose caribou harvest management plans--now I sound like a heretic, you can kick me out after this--but while managing harvest is important, the over-emphasis on controlling harvest as a response to caribou population decline rather than addressing other sorts of issues is certainly seen as problematic within communities.

Perhaps the most obvious example of that has been here in the Yukon – I'll be escorted out of the building after this--but the attempt on the Yukon Government's part to, say, open up the Peel, or privilege mining activity on the one hand, while telling harvesters they cannot hunt caribou on the other, is seen as highly hypocritical within communities. And there is conflict within government of course on how to respond, but that the territorial government would attempt to impose a restriction on the livelihood and economy and culture of communities, on Aboriginal harvesters, while privileging the economy of the mining sector is certainly a major issue, a bone of contention. And we're seeing that in other parts of the Northwest Territories as well. There's another mine that was just approved in the Bathurst range, while at the same time people are being told to stop harvesting.

Of course mining isn't the only impact on caribou habitat or caribou population. But we impose a precautionary principle in some ways and not in others. Certainly that's not the fault of individual biologists but of larger institutions of territorial government. That aspect of governance and discussions around traditional knowledge are the fundamental problem I see in different parts of the north.

I've been working with Treaty 8 First Nations of Alberta on a number of projects, some of whom of course are downstream from the oil sands. Up until our government dramatically shifted in orientation from right to left, traditional knowledge, or the inclusion of traditional knowledge in decision-making, was not even on the radar of the provincial government.

I think there's a real exciting opportunity for communities, land claim organizations, co-management boards, to have the leverage and tools to really move the conversation forward about how TK can be better included. Thank you.

Bryan Evans

Thank you very much. I'm wondering if you would be willing to stay on the stage and field a couple of questions while we ask the next sub-panel to come up? So, if I could ask the sub-panel, the Aboriginal Traditional Knowledge Holders, Danny Gordon, Billy Archie, James Pokiak and Douglas Egasok, and Lindsay Staples to come up, and maybe while they're gathering we can take a few questions for Brenda.

Lawrence Rubin, Director, Inuvialuit Game Council

I've got a question for Brenda Parlee. My name is Lawrence Rubin, I'm with the Innuvialuit Game Council and with other co-management boards at times. I'm glad I get to meet you, not face to face, but to see you and know who you are now. We've dealt with each other in teleconferences.

My question is not a concern but more or less a comment on gender representatives within co-management boards, and also on more or less traditional knowledge research done by government. In the past I've been asked to review and draw up reports on research mostly of caribou and some on polar bear. And I don't take offence to your comment about not enough women being on boards. But I do take offence as to the use of traditional knowledge in research. The women are very well represented in the research and draft reports. Because at most times I'm reading comments by the ladies and the women that deal with the traditional knowledge and the traditional way of living. And it's very evident for me.

But you have to look at reports; you have to look at the draft reviews. The most recent one was a draft status on the barren ground caribou. Although there are some discrepancies on the report, although it's just a draft, there were a lot of comments, actually most of the comments were from ladies that lived with those communities in Sahtu and those areas, there were a lot of comments from the ladies and they expressed a lot of the views that men have. So, I don't see any difference. There is a lot of use of gender equality out there in terms of traditional knowledge.

Brenda Parlee

Yes, I agree women have played many different roles and have different kinds of knowledge and I agree with you that you can't just look at one statistic, for example how many women are on co-management boards, and assume women aren't influencing decisions, that their knowledge is important and influencing decisions in many ways. Nice to see you again also, thank you.

Lindsay Staples

Okay. I've been really looking forward to this panel. The folks up here – just on the matter of gender – this is an all-male panel and these guys are a sub-sample of the people we interviewed, 75 harvesters for the polar bear TK study. Over and beyond that, these gentlemen know a lot other than just polar bear.

So, Billy Archie from Aklavik, Danny C. Gordon from Aklavik, Dougie Esagok from Inuvik and James Pokiak from Tuk, these four guys are active harvesters; they've been actively involved in many traditional knowledge studies. And what we thought we could do with this conversation is to hear from them, early on, to get a TK-holders perspective in the beginning moments of the conference.

I've got a few questions but I also know you guys may have a few things you may want to get off your chest as well when it comes to TK. I want you to feel free to do that. I don't want to get in the way of what you think and what you want to say. So, please take every liberty in that regard. But one of the things that I think some of us might be interested in would be how each of you as individuals acquired your TK? Where did it come from? Kind of growing up or, and obviously you're still growing, but where does your TK come from?

Billy Archie, Aklavik Harvester, Aklavik Community Corporation Member

Thanks. I get mine from my elders mainly. Interesting growing up in the 60s and 70s when a lot of our people were trapping and really using the land and you can just tell who were the good trappers. They were the ones who knew the animals. My grandparents, uncles, those are the people who I really picked up a lot on.

I just want to share a little story. I got two boys and a daughter. The youngest one I took out awhile back caribou hunting and on the way back, close to town, a couple of swans took off and he counted 52, 53. He was counting swans when we were out there. His natural ability of watching and observing, that's something that's in our instincts, that's the way we were brought up. And I guess one of the things--you said get things off your chest--there's an individual here at this conference that made a comment to me awhile back. We do research to tell us what we know. I'll use the example of a few years back when there was lots of grizzlies that our hunters were seeing. So, we told your council that we were seeing more bears so the work was done. And lo and behold you come back, yeah there's more bears so we get an increase in the quota. So, that's the type of knowledge, our hunters, the observations, that where I get all this from.

Danny C. Gordon, Aklavik Harvester, Aklavik Hunters & Trappers Committee Director, WMAC (NS) Director

Good morning. I'm Danny Gordon. When I get cornered like this I kind of like to promote somebody other than myself. And today I would like to promote my father who taught me things that I know now and it's been some 70 years and more, but everything thing that I learned from him hasn't broken down. Traditional knowledge is valuable.

And I guess the other thing that I want to promote is Ole Harry Inukikiluk. I was married into that family and I had to learn some new things because I grew up down at the coast along the Alaska North Slope, but coming into the Delta it was a different type of living. And I had to learn those things from the people that lived and occupied the land. And they had the knowledge that I didn't know about, but it took me awhile to learn it. Hunting muskrat was one of the things that I value and traditional knowledge taught me.

One of the people that I went out with, before I grew up and started harvesting on my own in the Delta, in Aklavik was Josie Papik I went out to the Delta with him for two summers, two springs actually. And he taught me everything that he knew. And I value those times and those valuable things that I learned. I treasure them, I keep them. Traditional knowledge is something that you can work with. Maybe in my lifetime I also have also done some scientific work without knowing it.

But life is good and the land is good and we need it and we need to take care of it and I guess when I was asked to be on the panel I said no. The ladies phoned me and they were quite convincing and finally I said yes I would. And I told them you had some good people onboard already and that you didn't need me. But there are some things that traditional knowledge have taught me and I guess you can tie down traditional knowledge to valuable things, value. When you value something you take care of it. When you value something you treasure it. When you value the land you occupy it and you want to leave it just the way you harvested on it or keep it clean and take care of it and so thank you for that opportunity.

Douglas Esagok, Inuvik Harvester, Inuvialuit Game Council Director, WMAC NWT Director

Thank you Lindsay. Good morning, my name is Doug Esagok. I'm a harvester from Inuvik. I sit on an Inuvik Hunters and Trappers Committee and sitting on that board has enabled me to actually get into the larger boards like the Wildlife Management Advisory Council for the Northwest Territories and Inuvik Game Council.

First of all, from my humble beginnings, I was conceived in a log cabin in the middle of the McKenzie Delta. The way I gather traditional knowledge is I sit with lots of elders and get them to talk. And I'm like a sponge. I soak up everything I hear and when I get useful information from them, that's how I carry out my day-to-day living.

I'm a harvester and a user of the land as well as a community representative. And what Lindsay said about me being a younger guy--I have this gap between me and them. But that's not to say anything. I still have something to bring to the table, which is a youthful view of the way things are done today. Like I said I listened to my elders every day and in my family we have a matriarchal society so the women call the shots in my family. So, I'm actually here representing the women in my family. They're the ones that called the shots all through my life because I grew up without a father. I lost my father at a young age and I learned lots from my uncles and older cousins and stuff. But that's not to say I don't learn a lot from these three members and a lot of people in the audience.

I had the opportunity to work with a lot of researchers and I'm going to talk a little bit about the successes of working with them. Being a land user I see changes in the environment and the wildlife. I had a chance to work with researchers from many aspects, from the air to the water to the ground under our feet and the wildlife we harvest. So, I have a pretty good understanding of how things are done on the research side of things. I think that actually enables me to be a meaningful participant in day-to-day discussions at the co-management board level as well as the community level. I bring lots of knowledge about travelling because I'm actually almost a full-time harvester. I trap most of the winter, well most all of the winter. And I travel the land hunting belugas, fishing in the summer months as well as guide researchers on the land.

I point out in many different conferences and meetings that getting to the area to do your research is half the battle. And actually getting there, like getting there, and doing the work is the other half. So, Inuvialuit play and native people in general play a really important part in that aspect. Thank you very much.

James Pokiak, Tuktoyuktuk Harvester

Thank you. My name is James Pokiak, I come from Tuktoyuktuk in the Northwest Territories and it's a pleasure for me to be sitting here as part of the panel. But what amazes me today and yesterday when I first walked in here is, for any of you who don't know, there's six of us brothers under the same roof at the same time and we've all come from the same community and we rarely see it like that. So, it's a real pleasure to be here with them.

My TK has come from an uncle and a really good friend that really taught me a lot. We come from a family of 16 and us younger ones, by the time we were old enough, our father was not able to take us out and teach us. But like Dougie and Dan and Billy say, you know, you really respect your elders when you sit down with them as much as you can and just soak in all the knowledge that they have.

My knowledge has come from people such as my uncle and my older brothers. When we were growing up young we didn't have very much but our source of food always came from the land. And we continue to do that. We are teaching our children what we have learned, not only from our parents but from elders within the community. It's not an easy job trying to live off the land anymore. I mean it's a really tough life but it's a good life. You're your own boss; you don't have to listen to nobody telling you what to do.

But you have to pass down information to your children and your grandchildren. I have three children and eleven grandchildren and each and every one of them, just like a lot of the young families and families right now, the knowledge that they have they are passing it down to the future generation. And that's what it's all about, you know, to preserve and protect the wildlife species that we harvest and our land. It is so important. You don't see very many active trappers around nowadays but, you know, when you live a life like that it's a good life. I certainly miss it but I continue to teach all that tradition to my children and my grandchildren. With that again, thank you very much for the opportunity.

Lindsay Staples

All of you guys have been involved with research scientists all your life in one way or another. And some of you older guys can think back many, many years to those early relationships with the biologists and the wildlife researchers who came into the Western Arctic. And Dougie, you've spent a great deal of time I know with a wide range of research scientists as well.

I'm sure the room is curious about how that relationship is working for you? When it works what makes it work and when it doesn't work why does it go the wrong way? And I ask that because in this polar bear TK study that we did, one of the things that came out of the interviews was that, as Bob DeLury was talking about at the beginning of the day, those original 1960s polar bear biologists and so on who came into the region, came in completely green and were hugely dependent on the people in the communities and the active harvesters for where to go, what were they going to see – basically how to do their work.

But as time went on through the 80s and 90s, and more recently in the last decade or so, that relationship seems to have gone sideways and it's not what it once was in terms of that true, collaborative relationship of equals, of colleagues. And I

don't know if you've got any thoughts on that. I'm not trying to be provocative, but if you could just each of you talk about your relationship as a TK holder with, if you will, let's call it the wildlife science community. That would be really helpful.

Billy Archie

Just looking back, I guess because of the land claims agreement it gave us the opportunity to work with individuals and I look back at Don Russell for one, the caribou, Joe Nieman from Canadian Wildlife Service. I'm feeling kind of old right now; those guys are not with us anymore. But yeah, they're still around.

But I guess the thing was there's certain departments where you really see a lot of turnover and one of them was the Department of Fisheries and Oceans, with all their biologists. They had so many working on one system. And that's what I saw during my time. One of the challenges we had with Dolly Varden just west of us, we had, I lost count now, about 13, 14 biologists, they just kept rotating and to us that's not consistent. And it's nice to see that Marsha and a few of the folks who have always been around to help us have that continuity. It is a battle to train young biologists to try and understand our way of thinking and what we see.

Danny C. Gordon

I get disappointed when research and scientific stuff goes on for too long. I get discouraged when that happens. I work with the Inuvialuit Hunters and Trappers Committee and I sit on WMAC North Slope Yukon and I enjoy doing those two things in my lifetime.

And there are times when I compliment it when scientists' work has been completed and it's been good. I appreciate it and I kind of agree with what has been done. And there's times maybe they didn't come back to me and compliment me for what I say, for what I do. I guess when I talk too much I tend to get into trouble so I'm going to stop right here, thank you.

Doug Esagok

I've had the opportunity to work with lots of different researchers, study a lot of different aspects of the climate, animals and everything. And one of the people I had the luck to work with was the late Ross Mackay. And I'll give you a little background for that guy. He jumped out of the army back in the 50s and started researching permafrost. I asked him why and he said I don't know I just wanted to. Anyways, when he first got to the north, he worked on the Yukon North Slope at the mouth of the Firth River. And he worked with my great grandfather, Laughing Joe back in 1952 I believe or between 52 and 56. And then later on he worked with another one of my family members, Albert Oliver, who is a great uncle. And then he worked with another uncle Alex Elanikand a cousin before me, Larry Angasuk and then finally myself. So, over his whole career working in the north he's worked with five different generations in my family. So, I kind of have a background but I didn't know until I talked to him and found that out. So, that was really great. He just passed last December at the age of 99. And he's been coming North and visiting Paulatuk a lot. Most of his time was spent in Gary Island at the mouth of the McKenzie River at one of the outer Delta Islands. But he spent a lot of time in Paulatuk and on the Yukon North Slope as well.

Another person I've been working with is Chris Burn who some of you in the room know. I've been working with him for over 20 years. He's carrying on Ross Mackay's work as a permafrost researcher. Like I mentioned I worked

with him for 20 years and that's when I first met Ross Mackay At first I didn't know all the people he worked with. When I first met him he was 87 years old. Everywhere we walked on the tundra, Ross was right beside me. He was able to keep right up at a ripe old age of 87. That guy was quite something.

Other notable people that I've worked with would be Marsha Branigan at ENR. And we did some grizzly bear work with her and Tracey and moose work and caribou work, the list goes on. That's where I'm lucky to have that. A lot of these people have been coming back year after year after year. And I call them repeat defenders, not repeat offenders, because they come back and defend their research to the rest of the world. Because there's lots of modellers and they come up and they use their work and they're just a flash in the pan. They come and they go and we never see them again. So, it's nice when you get people that keep coming back. And working with the communities, that way you get more information from them.

As a harvester I mentioned that I see lots of changes on the land and I document them, I'm a co-author on a few papers with other researchers mainly because of my observations. One of the big observations I made was back in 2007. We had a major storm event and we had a major salt kill in the outer Delta. And the researchers didn't know it was there. I noticed it in one of my hunting trips. So, I informed them and we were able to go in there, do a couple of good solid years of research, looking at all the changes of salt deposits and we were able to publish a paper on it later on in the journal Arctic, which is one of the major research forums I guess. And yeah, I was very lucky to have that opportunity.

But again, working with members of the communities, the harvesters are very valuable people when it comes to that. And researchers that come in, should make an effort to work with community members because like I mentioned before getting there is half the battle and Inuvialuit, they're very important to that, and those other native groups, whatever changes they're seeing in their traditional territories.

James Pokiak

Thank you Dougie, that was very interesting. For myself like my fellow panellists I have had the chance to work with different scientists. I've worked with Marsha before too and we did a program the past few years with the Alaskans. And these are areas I think that are really important. It's not just the local people who have a concern but it's also western science people who have that concern and that's why they're, like Dougie says, a lot of them hang around the area for awhile and they do their work and they're very respectful of when we sit down and talk to them. You have to be able to do that, science, western science cannot do it on its own but together with TK, TLK, you put those two together and you can get lots done.

> Science, western science cannot do it on its own, but together with TK, you put those two together and you can get lots done. – James Pokiak

I've had the really good opportunity to basically live off the land for many years. My wife and I did a lot of local tourism within my community. And it's just amazing when you sit down with the people that come from China or

Vietnam or wherever and you sit down with them and you start telling them all the cultural aspects of our ways. And the best part we found, my wife and I, was they actually had a chance to taste the local food, try on different clothing that we make. A lot of our stuff is homemade, from the land.

I can't remember exactly what year it was Lindsay but when I first met you we were coming down the Anderson River. And my son at that time I think was 7 years old, so, you know, we go back a long ways. These are memories that myself I'm going to cherish the rest of my life. And, you know, I've had the opportunity to work with other people, other than scientists, eco-tourism people. I guided the Firth River for probably 12 seasons. And that was the best part of my life--I was getting paid for what I love doing, just going out in the land and enjoying all the scenery and the wildlife.

So, you know, you have to be able to do that, put those two together and the outcome in the end is going to pay for itself. And that is how it has been for myself. I don't know if much of you know but Maureen who originally came from Saskatchewan and you should see that woman when she's preparing our food. It's amazing. But that goes to show that when you put two people together and you work together you couldn't get lost then. And I'm very, very again grateful for being here, thank you so much.

Lindsay Staples

Thank you guys. I think that one of the things that comes out of this last round is that clearly a lot of the strength of using and communicating and understanding TK is about the relationship. Billy you've spoken about the consequence of relationships when they're short-lived, when there's constant churning, constant turnover. And, Dougie you have, and James as well, these long, long lasting relationships and you've given these examples. Ross Mackay is a remarkable example of someone who has this life-long relationship with you and many of your people. And was trusted and understood a relationship of respect and James I think that's what you speak to as well. Many of the biologists that these individuals have referred to are people they've known many years, have worked in the region. And it's the relationship that's so fundamental to working with the TK that really works for everybody.

Maybe that's something we'll hear more about over the course of the conference. But the relationship between knowledge systems and knowledge holders is a really critical part of how that knowledge gets used and how the knowledge gets collected and documented.

We've got about five minutes before Bryan's going to give me the sign here. So, I'd like to give you one more, one last, opportunity to say whatever you might want to say about the broader topic of TK and with regard to any messages that you would like to put out for the conference to think about.

Billy Archie

Thanks Lindsay. Technology: when I was asked to come and talk a bit about TK, about my experiences, I went on the Internet of course and I want to quote something from a conference this summer in Anchorage. ICC Alaska President Jim Stotts had something on Facebook and it really captured my interest. Some of the things he said in regards to community-based monitoring, really to me made sense. I really don't like the term traditional knowledge. It seems like it's ancient, like it's static, it's not moving anywhere. No, it's not; I'm learning everything all the time.

At the same time when we look at other things like oral history, we did a couple of projects in our community and there was this one old guy that passed on, Jack Goose. He told us a story going back so far. The story was that the

Inuit around Anderson River killed a woolly mammoth, it was stuck in the mud. And the comment was, boy that was tender meat. So, you can look at the stories like that, how far they went back, and just their expressions of tender meat with a woolly mammoth is something else, so I just wanted to share that.

Danny C. Gordon

I'm just going to talk about my dad. We came from Alaska in 1946-47 to Canada. And in Alaska my dad did most of his harvesting and living off the land and on the land. In those days there were three types of rifle, 30/30, 25/35 and 25/20. They were valuable rifles, the only thing that was available to the north along the Alaskan cost, maybe in the Delta as well.

But anyway, one day he goes out to the ice, out to the sea, and he takes his 30/30 and leaves it out there and comes back. And he visited, goes and picks up the rifle he left out in the ocean, and comes back with a seal half frozen. Now he wasn't even there to see what happened but he got it. Another time he took a rifle again, more likely the same one, he goes out to the ocean and finds an iceberg. Icebergs 70, 80 years ago were pretty good objects. You know, we don't have them anymore today. We have no more today, icebergs, or very small ones. Anyway he goes out and leaves the gun out there and then he comes home. Two or three days later he visits and goes and picks up this rifle and he comes home with a polar bear. He wasn't even there to see what happened. But he was doing some scientific work and traditional knowledge that he was trying out and it works. And I just want to say that. You can ask me later how that happened but I leave it up to you. But it did happen and it was in my lifetime.

James Pokiak

Thank you. TK to me is something that passed down from generation to generation. Not just the TK but the TLK. Many times we have people, industrial activity happening in the area and they hold a lot of community consultation meetings and I tell you, you could sit down with those guys. Fifty years ago you were not able to do that. You know, industry came into the area and they just did what they had to do and left. But after our IFA was finalized and signed, I'll tell you things changed pretty darn quick for the better. And I really believe that our IFA has really done a lot for the ISR region. Regardless of what some people say regarding some of our leaders but, you know, these people have a job to do and my view they're doing it to the best of their knowledge and capability.

And you have to have that TK and TLK within yourself to make it work too. That's the way that I've always looked at it. I try and pass on my information that I have gathered from Elders and other people and I try and let as many outsiders know about it. I mean these are some of the things that we have to start doing.

I co-authored a book Proud to be Inuvialuit and that's the first time a non-beneficiary was allowed to go on a natural hunt. And we did it for the elementary school age children. And just things like that. If we don't show them and tell them why we do this, it's always going to be that backlash of anti-fur people, anti-whaler people coming to you. But with information like that I mean it really, really hits home when you give it to somebody or let them read about it. So, you know, we cannot stop progress. Progress is always going to be there and I think we, as Inuvialuit people within the region, have really proven our own destiny. And we're making the best of what we have available right now. Thank you.

Douglas Esogak

For me, traditional knowledge, I'm still collecting every day just by sitting around people like these three panel members here. And I see more and more traditional knowledge is being integrated into scientific work. To me it just makes it a lot better argument, makes it a lot stronger.

> I see more and more traditional knowledge is being integrated into scientific work. To me it just makes it a lot better argument, makes it a lot stronger.
>
> – Douglas Esogak

Frank mentioned in his opening remarks earlier this morning about some people that are not willing to consider it or when they put in their research program they say traditional knowledge will be “considered.” That word is loaded. To me it doesn’t mean anything. It could play a factor in their decisions or when they publish a paper or something like that, conduct their work and finish it. Your traditional knowledge that our members could provide is not considered or it can be. That word it needs to be--I don’t know how we go about having that word taken out and actually having it be utilized. I don’t know, I don’t know where we would start at that. Or making it mandatory to be included in scientific studies, especially ones that are going to affect our day-to-day lives in the north, like our harvesting or even just the way we regulate ourselves and our day-to-day activities. That's basically all, thanks.

Lindsay Staples

In the time before the break we were hoping to ask Boogie Pokiak if he'd be willing to come up and give his thoughts on this topic of mobilizing Indigenous or traditional knowledge.

Boogie Pokiak

It's good to be here, good to see all the people. It's such a big topic that you're dealing with here the next couple of days. Some of us have gone through a lot of experiences. I always told my children I've lived probably five lives already because things changed so drastically since we were kids. And we keep adjusting to the people now. Like we have no problem with the knowledge of the land and wildlife, it's built in us. And we heard a lot of stories when we were growing up and we spent a lot of time with our mothers when we were small and they are the keepers of our culture, our mothers, the women.

Like I told my girl – they're all hunters, all my children, and we go out and I pass out the knowledge about hunting to my sons and my girl is all part of that. And I say, you're exceptional. I said, you're the one, the woman, when they have children they spend a lot of time with the children; the husbands are out getting food for them. And we spent a lot of time with our mothers and we listen to the women talk and they're really the keepers of knowledge

that we gain and there's memories, you know. And people before me had the same kind of memories about their elders and their parents, their grandparents. And that knowledge was passed on.

And it's just too bad that all these knowledges you can't take them off of the shelf like in a library and read about them. But they're all built in and sometimes the traditional knowledge is triggered just by saying a word. There's so many species of wildlife, so many, you know, the environment, the weather, the travelling conditions in four seasons. They're very different. And in our settlement region for instance like North Slope, Delta, Tuk area Husky Lakes, bush trapping in the tree line, you got Bate Island you got Horton River and Sachs Harbour they're all different environments.

Like Danny said, every time you go somewhere you've never been, you associate yourself with people that are there. And they don't have to teach you about hunting and preparing food. You spend some time with them to get more knowledge, like Danny said. It's always a learning experience and we have, like I say, we've been adapting quite a bit as Inuvialuit.

I mean you just take a look at it. When our people didn't have--there was no white man around, no Europeans 130 years ago. Now we're up here talking English. So, there have been a lot of adaptations. That's a challenge, we've got to be able to try and communicate so that we'll get the best out of both cultures. Not to put each other down but to try and work together. Like I said yesterday the IFA really reflects how two knowledges can be used. Now you know, it's a working document. It's a working land rights claim and there's nothing like it. And we're co-managers, we're not advisors, our people are co-managing the environment and the wildlife.

But going back to the traditional and how our people got here historically, when our people came and settled into the Inuvik settlement region, you know who was their teachers? It was the wildlife. You relied on it for food, shelter and clothing. And when they first came here the wildlife was showing them, was guiding them, and the more you know about what you're targeting it makes it a lot easier for you. And the knowledge that was passed on helped their own, not only their family but the people in their hunting party.

When our people came and settled into the Inuvik settlement region, you know who was their teachers? It was the wildlife. – Boogie Pokiak

So, knowledge was – our people respected people that went on research historically. You know when someone says well I'm going to go and spend six months, you know, observing the wildlife, observing the environment that I live in, their habitat, he didn't have to worry about his family. All the time that he spent out there, his family was looked after by his hunting group. So, there's that interaction of working together and understanding that yeah, there's got to be some people going out there to the extreme. And they have that respect. Our leaders were the ones that had the knowledge – they didn't want to be leaders but the thing was they had no choice because of all the knowledge they gained.The more you get to know the more responsibility you have. And it's all a learning process.

We got that traditional knowledge from way back and we can go on about stories. But they all have a meaning for us. There's a purpose for us to understand, when you eat that land, when you eat that food. That is something we can't go without. When I'm at home I probably eat in a month, about three meals of store-bought food.

All my kids are, like a lot of us, hunters. Our kids are raised with the food. My girl is 23 and graduated and she says, every time I come back from a caribou hunt, hey you brought back the vertebra? She eats hooves. You know like things that normally you don't really do unless you're with a family and it becomes a family thing. As a parent, you try to introduce these things as the opportunity presents itself. This knowledge has to be passed on, how to prepare it, how to deal with it.

The problem that we're having right now as harvesters since about the 1980s, climate change really made a big difference in our lives. Our traditional knowledge about the past and the environment and about the ice and the weather and wildlife behaviour patterns, well our knowledge was good right until about mid 1980s. After that, now, we don't know what's happening. Wildlife is trying to adjust to that change in environment. We've got to start basically gaining new some kind of new knowledge from the wildlife. The only time we're going to do that is when the wildlife itself, fish and mammals, have adjusted to their environment. Their patterns are changing, their behaviour patterns are changing and it's been 20 years now where we've been trying to understand them. And it's going to be new knowledge for us.

The knowledge is continually evolving, and once the wildlife adjusts then we can adjust to them. We can say okay well I know what's going on now. Like the last thing a harvester wants is to go hunting somewhere and you're sitting waiting for the wildlife to come for the next one week, 10 days. I can do a lot of things in seven days, 10 days. Why sit out here? In the past you go out there, you set up, next day you're harvesting. Now you're waiting. So there's adjustments that have to be made that we're dealing with, I think with the help of the academic community, where the knowledges are acceptable to each other. It was very hard when we were negotiating our claim because they looked at us, oh you're just coming out of the ice age, 1960s, you're coming out of the ice age, you guys don't even know nothing about the European government system and we're still trying to teach you how to speak English. So, we had to adjust to those kind of environments.

I think, our people have--like our Elders, the Council, the inner circle of people when Europeans started coming, asked, "Hey, what's going on here?" And every year you got more people coming in and we're trying to understand them. What are they there for? Why did you come? They always come in for their own interest, like the explorers come and then the missionaries and the whalers, the RCMP. They all came and then not too long after the government came. We had our first introduction to a Canadian government representative, our people, and the result is we got Rangers in our area.

So, our people have been scrutinizing the people we're dealing with. You know, our Elders inner circle, the people that are counselling the future generations, they said okay you want to understand the people you're dealing with? Follow their footsteps. You follow their footsteps and walk with them. Try to understand why they're there so that you'll be able to adjust yourself to them and also probably help them. Our people just kept all these foreigners alive basically.

So there's always been this suggestion. Now with the claim, basically we're not following in anybody's footsteps anymore, we're beside them. We're co-managers with the government. We're working together. And now in some places because of the IFA we have a leading role. You move people. We basically have the agreement and force the government to be there to do their responsibility. So, there's been that challenge in our lives and I'm looking forward to seeing more young people take that role.

We'll help them, like I told my girl, especially my girl because like I say it's always been a challenge. It's easy to raise boys, and girls are really different. Like I told her, it's your generation that's going to be dealing with it. We're going to be gone. I mean just take a look at it. You know, like I'm probably going to be gone in the next little while. I don't have a death wish, okay? I don't have. But the thing is, the reality is we're going to go sometime. We need that next generation to come in there and be responsible.

Even though you might not see our children here, they're at home, they got this knowledge that we're giving to them and the challenges that we're giving to them. I just wanted to share that. Thank you for the opportunity Lindsay. I know I got parachuted in here for the conference but any way I can help in this conference, taking part in the discussions as a group, well, you know, I will take part in it.Thank you.

Bryan Evans

Thank you very much Boogie. We'll take a 15-minute break now. And we will have an opportunity for about a 20-minute Q & A with the panellists that were just up. So, think about questions you might want to pose to them. And we'll reconvene at 10 after 11, thank you.

Questions and Comments on Mobilizing Knowledge

Bryan Evans

If you can please take your seats we will get started again. Thank you. If I could ask the folks that were on the stage as panellists in the previous session to come back up on the stage to field some questions from plenary. Brenda, Danny, Billy, James, Douglas and Boogie. Billy. Maybe while we're waiting for the stragglers, I will ask if there are any questions from that last session and perhaps Billy and James can begin to field questions..

Unidentified Speaker

Thank you very much for this panel. It was really awesome to listen to. I'm interested in relation to the scientist coming into communities. How do you feel about reporting back the results? How are the results distributed in a language or in a form that is interesting to community members?

Billy Archie

Well, I'll start with this one. We want to see the initial application first: what are you trying to do? Then we'd team up with the individuals in the communities that's knowledgeable. But we want a copy of your results, because a lot of time in the past when that didn'thappen, some of those research projects could have an impact on our way of life. And then, what's the intent of the research study and how useful is it to us? That's the type of questions we want to ask.

James Pokiak

Thank you for that. Like anything else, in all the scientific research that happens in the ISR, it has to go through a process. They hold consultations with the communities, whether it be the HTC or the community corporation or the hamlet. It's a working process and one can't do it without the other, you have to do it together. In my past experience we've had a lot of dealings with different researchers but also industrial activity. Who best to go to when you're in a community than the knowledge holders? Sometimes they impose really difficult situations on our people, but, as an Aboriginal group in the land claim area, we have a lot more say as to what goes on now, and that makes it a lot easier for us to do our job.

Boogie Pokiak

There's been a lot of research going on and a lot of it has slipped through the cracks of time. In the beginning we were not getting the documents to see what they were actually saying about the interviews. I think the scientific community--it's very hard in an interview to express yourself within the span of an hour. Give us the time to put it together for you in our own thoughts. We have learned to document things, even at my age I can go to a computer now and use two fingers and put information in there.

We need people with the expertise especially academics. We need them to get best results. You look at 15, 25 years from now, when the economy starts again, in our area. The oil and gas--the government and the oil companies are very interested to come in and access those reserves and we're sort of behind the eight ball in research and documentation of the different environments.

You just walk the land and the land changes before you, from tundra to sand and clay areas and rocky formations. It's in our interests to have people come in and document even before the development. There should be baseline data so that if there's any restoration at least you've got the baseline data to base your restoration on. We need scientists to come. They're appreciated. But I think there's got to be more of a working relationship that develops. I think it's important that we say "Okay this is what we want, where we think a focused, targeted research should take place."

Evelyn Storr

I just want to make a comment regarding the discussion this morning. It was really interesting and I always enjoy listening to Danny and his stories. He leaves you with something to think about. My comment is about something Brenda said about youth and what they know. I think people here, who are involved in co-management and other management areas like local HTCs, sometimes we tend to say "Okay they're youth, whay do they know?" But Dougie when he started was very young, and Boogie referenced his daughter. I think we should always keep an open mind and respect the level of knowledge everyone has. We don't know what the youth do in the way of research, we don't know who they communicate with to gain knowledge.

You look in the room today and there's a lot of HTC representation, there's youth here. They decided to get involved, they have that interest. Somebody who holds knowledge doesn't necessarily have to be somebody in an age category. We try to promote that amongst our youth. We don't know what they're observing; we don't know what they're gaining by their observations, so a word of encouragement that we respect everyone. There are a lot of studies, not only in the wildlife management area, but in the area of health research and social research where we involve the youth. If we all look at our communities, we see what's impacting youth. Every time we lose a member in that age category, we have lost something of their knowledge. I just wanted to make that comment.

Unidentified Speaker

I've got some comments here, on the question that was asked earlier on how research should be represented in communities, or how we as communities take research information and disseminate it within the community. As James explained, there's a process right? We all know that; we deal with ARI and other government bodies and NGOs. We advise them that if you're going to be accepted for a project or a program within our region, although we may say yes, we have some conditions. We want results presented to us in layman's terms, so we as a community can understand, not only those of us that are sitting on boards or in organizations.

I have another comment here on something Dougie said, that in research traditional knowledge or Indigenous knowledge would be considered. The second slide in Brenda's presentation said "Bodies should consider traditional knowledge for communities to deal with it." The word "considering" and the word "should," shouldn't actually be there. They should actually take traditional knowledge and use it at the definitive point where they can make decisions. "Consider" and "should" should not be there, it should be "use," period. Maybe Dougie and Brenda can expand a bit on the words "consider" and the word "should."

Brenda Parlee

Great point, great question. I agree that the language “should consider” is perhaps as Dougie said a bit weak; that there should be requirements to include traditional knowledge. I think that’s where Dougie was going. One of the implicit assumptions with traditional knowledge research is that the documentation, including traditional knowledge, has benefit to the community. That, if a biologist has a study and they’re asked to include traditional knowledge, they’re not just extracting TK for their own benefit, or so that they can tick the box that they included traditional knowledge. There has to be some relationship built so documenting and using TK actually comes back to benefit people. That would be my only added comment.

Douglas Esagok

You want me to answer the question that I posed? I don’t know if I have the answer for that one.

Unidentified Speaker

Exactly Doug. I wanted your point of view on why research should take traditional knowledge or Indigenous knowledge as a definitive point where they can make a decision. I mean, you dealt with the research for many many years, and I have with me a representative from Paulatuk, representing the HTC. His name is Joseph Haluksit and he’s been a part of research along with Chris Burns, sometimes Ross came into Paulatuk and they’d be a part of whatever they were doing. Traditional knowledge was always an aside, meaning scientific knowledge was there, traditional knowledge was there, well okay, thank you for that information. In the future, hopefully traditional knowledge will be taken as a given for decision-making. And maybe your opinion on future use of traditional knowledge.

Douglas Esagok

Well, for me, being on the HTC, we deal with research programs on a day-to-day basis as you’re aware. We see that disconnect where the research will consider our input, it’s there, but they don’t have to use it. At HTC we are always questioning why it’s not included. Maybe somebody could comment back to me as how we can make it mandatory to include TK in everything. Is that a good enough answer for you there?

Billy Archie

When we look at the question, what kind of research? Going back to the example of Mitch Taylor with the traditional knowledge polar bear study, how he recognizes our knowledge versus someone like Andy Derocher at the University of Alberta. When you look at the hidden agenda, right away I start thinking okay the World Wildlife and Coca Cola iconic polar bear, they’re endangered, the intent is to generate revenue right? You look at the impacts like Greenpeace and what they did to our communities, the trapping. I caught the program a while back on CBC about Mitch Taylor's, Andy Derocher’s, view on polar bears in the Arctic. I had to show one of the visitors last year that there’s still ice up there and you see on TV commercials and the Internet, poor polar bears sitting on a little iceberg. It’s a misconception, that’s one of the things that bugs me.

Danny C. Gordon

Thank you. When I look back at the amount of times we've dealt with Western scientists I think the biggest hurdle that we've had to face is they have a really hard time trying to understand our TK and our TLK. One of the biggest reasons is they've gone to University and gotten a degree in a scientific area. I've had a lot of discussions with scientists, when I've said "Look, we may not have a piece of paper saying we're scientists, but, in our own way we are scientists." We live on the land, we live in the waters, we know the changes in the weather patterns and you can't find that in a classroom setting, you have to go out there and get it and soak it into your brain. In actual fact we are scientists in our own way and we have to be able to sit down with some of these people and encourage them to use more of the TK. Evelyne, I was really glad to hear you talk about the youth. They are such an important part of what we are dealing with right now, but, the thing is to get them interested, more and more we need that. Thank you for bringing that up Evelyne.

Bryan Evans

Thank you very much for the comments and questions and the responses from the panel, and thank you to the panel for your participation this morning. We're going to move on now to the first breakout session.

Mobilizing Knowledge Breakout Group Summary

Breakout Group Facilitators: Gregor Gilbert, Chris Hunter, Craig Machtans, Ramona Maraj, Todd Powell, Amy Ryder, Evelyne Storr

What does TK provide to wildlife management that science-based knowledge does not?

- TK provides perspectives from generations of people travelling, living fully immersed in the land and dependent on their relationships with the land, wildlife, etc.
- TK is experienced; science is driven by funders, policy, etc.
- TK is inherent in all aspects of TK holders' lives.
- TK brings a really strong deep ecological understanding of the entire system and how things function together. It offers integration across subject areas. Unlike a single line of inquiry, with TK all of the other factors are included as well.
  - Science can be shorter in duration and focussed on a particular area.
- TK provides continuity of long-term baseline rather than periodic insight. Provides a good comparison with the way things used to be.
- TK offers a transparent value system when we're presenting our thoughts and input into wildlife management--this is hidden in science.
- There can be a very practical aspect to TK that is often lacking in science.
- TK methods incorporate the rhythm of the land, and wellness--is a "holistic approach"
- Lots of different things that affect TK holders--e.g. homelessness, food security, wellness issues that take people away from what they were taught.
- TK is true ecosystem-based management, provides people-based concept of conservation--people implement conservation themselves with their own definitions.
- TK helps set priorities for management.
- We want better decisions, and want to do better job of including TK in decisions--better decisions are going to come out of integrating TK and science into wildlife management.
- Management is embedded in TK and its value system--science can be disjointed at times.

What can science provide to TK in what circumstances and for what purposes?

- Science can provide new tools for communication and understanding TK--e.g. mapping platforms.
- TK has local and regional perspective, and science can bring in perspective from entirely different worldview or culture, which can contribute back to local understandings.
- Science brings things that aren't necessarily observed through eyes or ears.
- Science allows for future predictions and modelling, guessing how things might happen in the future.
- Science can confirm concerns communities might have and visualize trends.

What does science need from TK in what circumstances and for what purposes?

- Science needs the broader perspective that TK offers--long-term, ecosystem based approach.
- TK can provide science with a real world aspect--how does this make sense in the broader context?
- TK can raise and direct questions for science--TK has ability to keep it grounded and directed to those who are most impacted.
- There is a difference in how we learn, and science can benefit from a different way of learning about systems.

What does TK need from science in what circumstances and for what purposes?

- Scientists need to make sure that as they come into a community with ideas, they are still open to what is known in the community.
- Good science communication can benefit TK holders and decision-makers.
- How do we move knowledge into a realm where it wasn't created? Researchers need to understand their audience and the appropriateness of their communication tool.
- The evaluation process is what science can offer back to TK.
- TK needs respect and understanding from science. There needs to be space for TK to be reflected on in culturally appropriate way.
- Social science can bring knowledge of ourselves through a systematic approach--it can gather the knowledge of many individuals and represent that in different ways to show broader perspective within the community

How can scientists and TK holders better communicate and work with each other? What barriers need to be overcome?

- Context is important, and the language being used is important. There are multiples ways to interpret language and there should be sensitivity to this (e.g. TK going to be interpreted by different people in different ways).
- Need to know how TK is going to be used--it is used differently by academics, government, industry, and we need to know what kind of processes it will fall under.
- There is a lack of acknowledgement or encouragement for researchers to use TK. This is partly due to their environment (e.g. publish or perish), which influences how TK is used and may result in TK not being given the importance that it needs to be. Funding structures also lead to TK being incorporated as an afterthought.
- There is a need for guidelines, or better guidelines on the broader acceptance of TK amongst anybody who is

trying to use it or incorporate it. Needs to be an acknowledgement that the community is in the best position to say who the appropriate knowledge holders are.

  - These guidelines might also include performance measures that would result in better and more inclusive use of TK in their work.
  - Currently there isn't anything in place that encourages researchers to incorporate TK in their work and there needs to be better set of procedures in place that would facilitate that.

- Can work together collaboratively through co-design--when studies are initiated, that's where we start. This is the difference between community-based (starts at the local level, integrates TK with design, and TK holders go through entire process, findings stay within community) and community-placed science.
  - Relationships are very important–specifically sincerity, honesty, and integrity.
  - It is important to find common ground from the start, and understand what is the purpose of the science, making sure the purpose of the science is in line with community values.
- Need Indigenous academics working from the communities.
- Need social science training and need to have natural scientists working with social scientists.
- There needs to be a breaking of stereotypes on both sides of the fence.
- There are basic tools in the IFA that can be used to govern how scientists work and what they should be expected to do, what the community should expect.
- Strong policy or legislative frameworks give us the tools to work together better.
- Barriers:
  - There seems to be an inability to leave different worldviews.
  - Trust: in the short history we have lived together, there have been a lot of reasons for mistrust. Building that trust means engaging people early on and meaningfully, ensure you're receiving TK respectfully, ensuring you are validating that knowledge.
  - Need to better understand barriers that are created by cultural beliefs, values or norms (individual or institutional).
  - It helps if egos are left at the door, both individual and institutional--we want to bring worlds together in a positive and productive way.
  - There is a false idea of TK versus science, when realistically what TK needs is access to decision-makers rather than TK and science being considered a dichotomy.
  - Lack of communication — often researchers might leave a summary report but there isn't a level of engagement that makes the science real for the community and lets them integrate it into what they already know. There needs to be a common vision and shared purpose.

How is TK best documented, communicated and shared?

- TK has the most meaning when shared orally and communicated that way.
- Emerging power of social media in communicating TK makes TK more accessible. However, it also brings with it risks with privacy. There needs to be flexibility (some TK should be shared, some should be private).
- We need better communication--integrating the science and TK teams so they're working together from the start. This can lead to buy-in in the community. Communication also needs to be very clear (plain language) and open-minded.

- Communities need to take ownership over whatever the project may be so that it can be utilized.
- Ill-informed media can be detrimental.
- In documenting TK, meeting early is key--to build relationships, and work on questions together to build framework for research.
- Requires the development of long-term relationships--bridging between science and TK often has to do with researchers that have been in the community for a long time and where knowledge is exchanged in both directions. This also allows you to build on results of the past.
- There needs to be relevancy--researchers need to have ability to explain why what they're doing is relevant, helps engage community.
- The processes for science and TK are actually fairly similar--both are observing, documenting in one way or another, and doing so repeatedly – but the methods are different. There is a need to bridge the gap in understanding the different methods
- TK is best documented by Indigenous people.
- TK needs rigor--how do we set standards for the methods associated with TK?

Lindsay Staples

Thanks to all the groups, those are terrific reports. Two areas that leaped out at me were the notion of concurrent TK and science projects that inform one another and the idea of co-design. There are huge opportunities for some really interesting and innovative work. For instance if it's a case of doing a population assessment or a management plan for a particular species, to launch it as a kind of concurrent TK and science-based study from the get-go. The second concept was that inherent in the work is it's interdisciplinary nature. It's really quite exciting to look at a team or approach across disciplines, whether it's the physical or natural sciences, conservation biology, social science, anthropology and so on.

My question is for Gregor. I was just curious Gregor what your group had to say about performance measures for the use of TK by researchers??

Gregor Gilbert

There was a consensus amongst our group that there wasn't really anything in place that encourages researchers to meaningfully incorporate traditional knowledge within their work, and that there needed to be a better set of procedures in place that would facilitate that. So if those are performance measures that act as a counterbalance to that kind of publish or perish nature, that would give an added weight to traditional knowledge being used in a considerate, thoughtful, proper manner in any kind of research, then those measures should be implemented. We didn't get into the specifics of what kind of performance measures we would put in place but acknowledged something more was needed to encourage that.

Unidentified Speaker

This is largely a comment that came out of a side discussion after the session had finished. Early engagement and working with the community, is a critical part of this Getting into and spending time with community takes money.

There have been some efforts to build engagement into funding applications, but the Tri-Agency and federal funders haven't done a good job of doing this. It may be time for a lot of us to push to try and encourage people to build engagement into their funding applications. This would go a long way to working towards these solutions.

Craig Machtans

A few people did discuss that in our group. Just to encapsulate, there are a lot of institutional barriers that would be worth writing down and thinking about a way to tackle them. There are so many walls in place that prevent some of the good things people want to do.

Unidentified Speaker

I wanted to pick up on a comment that one of the things that science could bring was a way of evaluating TK into the management system. And while I recognize that there is good intent with that, I'm wary of that approach. One of the things I was hoping to take from this workshop was ways that we could use traditional knowledge to shift management practices rather than having more traditional knowledge fit into a current management regime, to actually think about how we can shift that paradigm. Thanks.

Bryan Evans

Thank you. I would like to shift gears now and move to the panel presentation of the second theme. But before I do that I just wanted to ask Bob, as conference chair, if you had any observations, thoughts, or comments you wanted to share.

Bob DeLury

Thank you, I won't take very long.. I was really quite impressed with what I saw here today. I told you I was here to learn all the things that I've missed over the last twenty years. I was involved in environmental protection and learned very quickly that mutual respect was long-term and common among really good biologists and the Aboriginal people. It seems the best experiences people had with research was when it was a collaborative effort and where the research was of use to the community. The key thing is respect and that takes time and it takes values. I think you've got some excellent ideas here, so I'm very pleased. Thank you.

Bryan Evans

Thank you Bob and thank you again to the facilitators for that presentation. Now I'd invite the participants in the second panel to make their way up on stage. That would be Dominique Henri, Nathan Cardinal, Jenn Parrot, Kim Heinemeyer, and John Ward. We're going to start with a presentation by Dominique.

Panel Two: Best Practices and Documenting Traditional Knowledge

Questions to explore:

- What innovations have been introduced in the collection, documentation and communication of TK?
- What do you conisder to be best practices in the documentation of TK?
- What current practices should be discouraged or prohibited and where are improvements needed?
- What methods of collection and documentation best respect the nature of TK?

Dominique Henri, Wildlife Science and Traditional Knowledge Specialist, Environment Canada

Good afternoon. Thank you very much for inviting me to speak and be part of this panel this afternoon. My name is Dominique Henri and I'm a wildlife science and traditional knowledge specialist working for Environment Canada. I'm a social scientist by training, a human geographer to be specific, and I'm originally from Montreal, Quebec. I have conducted research in the past on the use of traditional knowledge and science in wildlife management in Nunavut. I've also worked as a private consultant doing environmental impact assessment, using traditional knowledge in that context. I was recently hired to work at Environment Canada and my current mandate is to support scientific researchers in engaging meaningfully with Aboriginal communities and traditional knowledge as part of their scientific research activities.

On a more personal note I would like to say that I've been interested in traditional knowledge for as long as I can remember. I've been fishing and picking berries since early childhood, interacting with Cree families and I've learned tremendous amounts from them. But I'm not a traditional knowledge holder and I don't pretend to speak in the name of traditional knowledge holders. Rather I view myself as someone with a social science background that can facilitate the meaningful application of TK in resource management.

Here's an overview of what I'd like to discuss. First I'll touch briefly on benefits and challenges associated with the use of traditional knowledge and resource management. Then I'll discuss best practices for documenting TK. To do that I'll break down the documentation cycle into various steps and will provide examples for each. I feel what I'm about to present really resonates with what we just heard. I don't see this as redundancy but rather as we're developing a consensus about best practices and I think that's encouraging news.

Various benefits can derive from the application of TK in natural resource management. First is that since traditional knowledge can provide information about unique local ecologies and information stemming from distinct cultural traditions, then better management

decisions can be made on best available evidence. Also, the use of traditional knowledge by meaningfully including Aboriginal communities and issues that affect them can lead to enhancement of engagement and collaborative decision- making.

But as we've discussed there are various challenges that we face today, the first being that there are different levels of acceptance among different institutions about the value of traditional knowledge. Also, as we've just mentioned, there are financial and human barriers to engaging meaningfully with traditional knowledge in resource management. Additionally, a key issue arises around traditional knowledge representation and potential misuse. On the one hand scientific researchers and wildlife managers have put forward demands for robust means of documenting traditional knowledge while at the same time Aboriginal community members may be a bit wary, and rightfully so, that knowledge is misrepresented or appropriated when it moves from individuals and communities into the management sphere. Finally, when traditional and scientific interpretations or conclusions conflict a challenge certainly arises.

What I'd like to argue now is that a way to tackle these challenges it to apply best practices for documenting traditional knowledge. So I've represented on this diagram the traditional knowledge documentation process. These steps are also listed there. These steps apply to most projects but by no means is this an approach that will fit all the time everywhere. So I'd like to discuss these steps in turn with best practices for each. Before I do so, however I'd like to raise a question: why document traditional knowledge in the first place? Isn't the participation of traditional knowledge holders in natural resource management processes sufficient? While documenting TK can certainly not replace the meaningful participation of knowledge holders in decision- making, it can certainly serve to strengthen Aboriginal voices.

First, traditional knowledge, when documented, can travel to places and at times that knowledge holders cannot. Also, when documented, knowledge can be presented in formats that can be readily used by decision-makers having limited time and limited access to community members. Finally, documented knowledge can present aggregated information from various individuals, thus increasing confidence in decision-making and reducing the risk of seeing TK claims discarded as anecdotal, which is, as we know, unfortunately still the case.

A first step when thinking about entering a documentation process with traditional knowledge is identifying the natural resource management issue for which traditional knowledge documentation is required. Multiple pathways can lead to issue identification. And there's no right or wrong approach there. Aboriginal communities, research managers, scientific researchers can all raise a question that is valid and that can lead to documentation. However, a key step to take here is to mobilize, and this has been said before, mobilize stakeholders, Aboriginal communities and other project partners really early on in the process.

A good example of an issue that was raised by Northern communities down south is what happened back in 2004 when Inuit hunters from Ivujivik, Nunavik were the first to detect the presence of avian cholera outbreaks affecting common eider ducks in the Eastern Canadian Arctic. This was the very first time anyone had seen this disease in the Canadian Arctic. Researchers and biologists had never seen this. Thanks to observations made by hunters, Inuit knowledge on avian disease and mortality was then documented and this led to further scientific studies. This example shows that observations made by community members can lead to fruitful research and management applications.When an issue is identified and the next step is to design a project for documenting traditional knowledge, establishing project objectives, methods and expected outcomes in collaboration with communities and project partners is what we're looking for. And again this has been mentioned before but is I think a best practice to recognize when planning a project. Establishing trustful, meaningful, mutually beneficial relationships should be viewed as the very foundation of any documentation process. It's important to recognize that this takes time, flexibility and open communication lines throughout the documentation process.

Also key when planning a project is to discuss all aspects of the documentation process early on in order to have a no-surprise, or minimal surprise approach, and in addition, to determine the level of engagement of Aboriginal communities at each step of the process, recognizing that this involvement can vary as a project evolves. We know that research fatigue and consultation fatigue is a phenomenon that is widely spread in Northern communities and therefore we should really pay attention to existing traditional knowledge studies in order to optimize study design. Finally I think it's advisable to follow local protocols and applicable research guidelines when designing a project. Local protocols and guidelines can inform local research priorities, and can provide information on the licensing process and on compensation mechanisms for traditional knowledge holders. There's a wealth of information available out there that one should pay attention to when planning a project.

Another best practice to apply when planning a project is to agree on TK protection and information-sharing procedures. Again this will be very project-specific, and different procedures will apply. But what's key here is to have informed consent by traditional knowledge holders and ensure that consent is obtained in a culturally appropriate way. Also, there should be clarity on where traditional knowledge information will be stored, under whose custodianship, who can access it and to whom it should be disseminated. Having clarity on these matters can strengthen trustful relationships and really ease the way further for the rest of the project.

And, I think this was also mentioned, training and capacity-building should be used as a basis of project activities. In my own work in the past I've tried to make presentations in school about a project often and to hire local high school students, to train them in social scientific research methods. There are huge opportunities for youth involvement and the training of community members in research and knowledge sharing in general.

And finally at the project planning stage it's very important to consider carefully the relationship between TK and science since as we know science plays an important role in decision-making. I think it's important to pay attention to when and how science and traditional knowledge information can be brought together either, as part of the documentation process or later on as part of management decisions.

Once a project is planned, the next step is to collect TK through adapted methods in collaboration with Aboriginal communities and other project partners. In terms of best practices when collecting TK, various methods exist in the social sciences, including semi-directed interviews, questionnaires, focus groups informal conversations and storytelling. Each method has strengths and weaknesses, but it's important to use methods that knowledge holders feel comfortable with.

Someone said this morning that they felt that during interviews time was a constraint and they didn't have enough time to provide a clear picture of what they meant. Spending time with people and using informal conversations can be a way to address that. There are various levels of community involvement in documenting TK when using different methods, ranging from minimal engagement where knowledge holders are viewed as project participants in their project, to maximal engagement where community members are research leads. Maximal engagement takes time, resources and desire but it can lead to strong research outputs and strong community ownership of research products.

Finally, choosing the right approach for collecting TK is project-specific but key questions to keep in mind when choosing methods are who will be using documented TK, and for which decision-making process? Also, what do decision-makers and traditional knowledge holders view as good ways to put their knowledge down on paper?

I'll now provide specific examples of projects which I find innovative in which TK and scientific information were collected collaboratively. One example is the Peary Caribou knowledge assessment that was carried out in the context of a federal recovery strategy for the species. Since 2012, Environment Canada researchers have been

working in collaboration with wildlife co-management partners, including various NWT Nunavut communities.The main objective of the knowledge assessment is to identify critical habitat for Peary caribou to ensure the recovery and survival of the species. As part of this project, members of communities shared their knowledge in very informal ways with scientific researchers in meetings held in various places. Mapping exercises were used, so were informal discussions where knowledge was shared in a common fashion. So, community observations and scientific data informed the assessment of current Peary caribou distribution as well as habitat analysis.

You can see on this map [slide 12] what community knowledge and scientific surveys when combined together lead to in terms of our understanding of Peary caribou distribution. In dark red here you can see what existing scientific studies have reported about where we find Peary caribou today. In the light red and orange lines you see critical habitat identified by local communities and movement patterns for Peary caribou identified by local communities. What I find really interesting on this map is that when you combine traditional knowledge and science there are areas here of special complementarity between both sources of knowledge and this really leads to a fuller understanding of Peary caribou distribution.

Another example of an innovative project where scientific and community observation were documented side by side is the Beaufort Regional Coastal Sensitivity Atlas, which was released earlier this year and developed by Environment Canada's Landscape Science and Technology Division. The Atlas provides a synthesis of environmental information relevant to planning and implementation of oil spill countermeasures in coastal areas of the Beaufort Sea. It presents an overview of biological and human use resources that are vulnerable to oil spills, using both scientific and traditional knowledge. Six Inuvialuit settlement communities were involved in the making of the Atlas. Environment Canada researchers met with community members at Inuvialuit Game Council meetings in Inuvik and community members helped identify on maps high sensitivity areas that should be included in the Atlas and explained why this information was relevant.

The final mapping product included scientific information and traditional knowledge side by side. You can see here [slide 14] the example of a map from the Atlas. On the right hand side you see symbols and a colour code that identify sensitive coastal resources. And what I find really interesting is that researchers when doing this felt it was important to make no judgement on the validity of the information that was provided by communities. Rather, communities were responsible to decide for themselves what layers of observation they wanted to see on the Atlas. Also scientific researchers felt it was important not to discriminate between knowledge types and to come up with a research product where both sources of knowledge were included.

Moving on, the next step in the documentation process is validation. We touched upon this earlier today. Validation should be viewed as a crucial step in the documentation process as it can lead to strengthening the credibility of and the confidence in project results. Again, the engagement of community members can vary along a spectrum, from minimal engagement where community members are asked to provide feedback on preliminary results to maximal engagement, where research results are validated and approved by community members before they can be released. Maximal engagement can really lead to community ownership, although it's not always feasible given financial and time constraints.

One of the last steps in documentation of traditional knowledge is communicating findings efficiently to Aboriginal communities and other project partners. A first best practice to acknowledge when sharing findings, and again I feel I'm repeating what has been said, is that giving back to communities should be viewed as a priority. Also, it's to prepare materials in formats that are understandable and accessible to communities and other partners. Careful attention should be paid to language, the use of technical terms, and the use of different visual aids when communicating messages. And finally, when sharing findings it's a good time to discuss expectations with regards to how traditional knowledge will be used in decision-making, in order to minimize potential surprises about project outcomes.

The very last step in the documentation process is applying documented TK throughout the resource management process. A best practice to use here is to present TK in formats that are relevant to decision-makers. Resource management as we know often deals with complex issues requiring consideration of multiple lines of evidence in a limited amount of time. The format in which TK is documented and presented really matters. Another key thing to consider is the importance of gatekeepers, and by this I mean individuals that can really help move documented traditional knowledge from communities into the management sphere. These individuals can be Aboriginal representatives sitting at the decision-making table but also anyone that has an interest in traditional knowledge.

Timing is really key for documented TK to be included meaningfully in decisions. Aboriginal communities, scientific researchers, and managers each work with their own timelines, and coordination between the three should be considered carefully for maximizing output in decisions. I'll go over this quickly as I see the time is passing--another best practice when applying TK is to consider, and I won't make too many friends because of the use of these words here, I apologize, consider the spatial and temporal scales of traditional knowledge and scientific information. As we know, traditional knowledge is acquired from the use of the land, from patient and careful observation in specific places and at specific times. And the same applies to scientific research. Each knowledge source has its own strengths in understanding a phenomenon and what's interesting is to see what strengths of each knowledge systems are.

Finally, traditional knowledge is observations but very importantly it's values and beliefs, which should be considered in decision-making. To conclude I hope to have demonstrated throughout this presentation that extractive traditional knowledge documentation is not a good practice to follow, and by this I mean going to communities, taking knowledge, not giving it back or applying tiny bits without putting this knowledge in context. Rather at each step of the documentation process I think I've highlighted that Aboriginal communities and other project partners should be given opportunities to engage in ways they feel comfortable with. Successful approaches for documenting TK should emphasize the building of trustful, mutually beneficial relationships. Honesty, openness, flexibility, and patience are therefore keys to project success.

I'd like to finish this presentation with a quote that came from an unknown but wise individual who said that, "People don't care about how much you know until they know about how much you care." This sentence resonates for me when I'm thinking about how to engage in meaningful traditional knowledge documentation. Thank you for your time. Merci.

Nathan Cardinal, Manager, Resource Conservation, Parks Canada

Thank you. Today I hope to share with you some of the stuff we've been working on in the Southern Gulf Islands. For thousands of years on the BC coast First Nations were shellfish engineers and managers on hundreds of kilometres of these massive rock walls up and down the BC coast. These rock walls increased shellfish production as much as four hundred percent in some areas, and some of these places were right in front of First Nations reserves or what are now First Nations reserves. Virtually all of these areas are no longer in production and it wasn't until about ten or fifteen years ago that they became known to western science. But that knowledge has been living on in First Nations traditional knowledge for millennia.

Imagine being able to take a few of these places and bring them back to life, to inhabit a functioning place that's beneficial for community

members, where we're gaining traditional knowledge and science. Having youth and elders out on these places. I want to tell you a story about the project that we're working on, and take you on this journey that we've been involved in in the Southern Gulf Islands.

This is a satellite photo of the Lower Mainland [slide 3]. Here is Vancouver and down in the bottom left corner are the islands that compose the Southern Gulf Islands. It's a very productive area. We're protected from the Pacific Coast and we've got the massive Fraser River putting nice freshwater nutrient input into the region and we've got this upwelling that comes around from the Pacific Ocean. It's a very dynamic area where lots of really interesting wildlife. For millennia it supported many, many different First Nations people — within that one satellite image there were five different language groups. Tens of thousands if not hundreds of thousands of Aboriginal people were supported within that specific spot.

A lot of these places that exist now were actually managed ecological or ecocultural landscapes. When James Douglas and some of the other first European people came into the region they described these areas as being dropped out of heaven. Little did they know that these were actively managed landscapes that had been worked by First Nations people for a long, long time.It is still a very dynamic area. More people live there now, there's about six million people between Seattle, Vancouver, Lower Mainland and Victoria. But we're seeing a resurgence of Aboriginal people and Aboriginal culture within the region.

In 2003 the Gulf Islands National Park Reserve was established to protect a representative portion of the Southern Strait of Georgia Ecoregion characterized by these at-risk coastal Douglas fir ecosystems and marine ecosystems.There are nineteen different First Nations that have historical and cultural ties to the region.. We work with several First Nations that are involved in the BC treaty process. And we also work with a group of First Nations that are signatories of a series of historic treaties called the Douglas Treaties.

In a park reserve people can continue doing what's described in the National Parks Act as traditional renewable resource harvesting. When I started working at the park reserve a number of years ago one of the things we kept hearing about was clams. Clams have long been an important staple for First Nations people, or so they kept telling me, beating me over the head again and again about the importance of shellfish. There are a couple of researchers, Brian Thom and Karen Fediuk that surveyed Coast Salish members within the region, asking them about their traditional diets and what they were still eating. They found that people still really wanted traditional foods and they still really wanted shellfish. But they weren't getting as much as they wanted. There was a high level of inadequacy in provision of those traditional foods.

They recognized there were a lot of barriers in place for Coast Salish people to get that food. In this bar graph here [slide 5], about thirty percent of barriers identified were government barriers. Issues about regulation, about management, all those sorts of things. There were issues about poverty about knowledge loss. People just not actually being able to get on the land anymore was another problem. When I came to the park reserve we also saw that there were a lot of gaps in knowledge.

There was a lost generation of traditional knowledge in a contemporary frame. And there was little stock assessment. DFO wasn't doing a lot of work looking at the health and abundance of shellfish within the region, so when Parks Canada came in as land managers for the Gulf Islands National Park Reserve we thought, "Well let's do a study together." Kind of a pilot project that looks at getting some knowledge together to inform sustainable and safe shellfish harvest by Coast Salish people within the region. We did some scientific data collection, we started gathering data on health and abundance of shellfish which became part of our ecological integrity or EI monitoring program.

We were gathering data on pollutants and safe shellfish harvesting and similar things that grew out of the community's interest and what they wanted to learn about shellfish. We also worked with them to undertake some traditional knowledge studies about shellfish. We really wanted to focus on looking at how to minimize or get rid of the government barriers identified previously.

The other thing we quickly realized was that traditional knowledge, as we've heard quite a bit this morning, is a holistic sort of knowledge system. It's not just about the species that we're finding in those beaches, but also about the management structures, the values, the culture, the language. All these things are intimately tied together. How do we as a government agency help to bring that holistic system into a collaborative management approach, and give it prominence?

We used these ways of knowing to tell us about the rise and fall of shellfish within the Southern Gulf Islands. And surprise, what did we learn? We have an unhealthy population on our hands. So basically through the EI monitoring, we found that the majority of shellfish weren't doing that well.

The other really interesting thing is that what we often thought of as a natural beach was a manufactured and cultured landscape. These places were being used by First Nations people for a whole variety of purposes, not just for harvesting but for knowledge transmission between elders and youth, for celebratory feasts, for teaching people conservation ethics and bringing them up in the community.

We began to learn about First Nations management of the land. And we learned about clam gardens, beach managed by First Nations people for shellfish production. What they would do is take all the rocks around the beach, move them down to the low tide line and create this rock wall. That did a number of things. It increased the area for shellfish to grow on the beach, it changed the slope of the beach so that it would be of most benefit for a number of shellfish species, it changed flow dynamics.

First Nations people, keep reminding us that this is just one example of what they did in these regions. A whole range of ancient mariculture occurred within the region and the clam garden is just one example.

When we talk about clam gardens we have to think about this wall and this beach but the most important piece is the people. It's the people who are required to keep the clam gardens functioning and working - it's the integration between people and culture and ecology that allows these clam gardens to be what they are.

Clam gardens up and down the coast have ranged in size and distribution. In this photo here the white line there where the rock pile is, that's the clam garden wall. This was one of the bigger ones on the coast. What's remaining there is probably about eight hundred metres long. Originally it was probably over two kilometres long. These walls were anywhere between two metres and five metres wide, and probably anywhere from half a metre to two metres deep. Each of the boulders in that wall are about the size of your two hands together. So you can imagine the number of people involved in creating this structure.

It's interesting to take scientists there, show them the wall and say well this wasn't built by accident, there was a purpose behind this. It's a visceral and very obvious thing to see. They're really, really cool. There's some research coming out of SFU by a woman named Amy Groesbeck looking at the abundance of shellfish within a clam garden area compared to a non-garden area. They were finding that in some of these clam gardens they're getting four times as many shellfish as in the non-clam gardens--especially the shellfish that First Nations people like to eat.

In the Gulf Islands we thought, "Let's do a restoration project. Why don't we work with the local WSÁNE and Hul'q'umi'num Nations to restore a couple of these clam gardens in the park reserve." We thought, "Why do we always need to go to science, to tell us how to manage something, when First Nations people have been doing it for thousands of years in a way that's sustainable?" There are some places where, as sea levels dropped over

millennia they created clam gardens that moved down the tide line, adapting to changing ecosystem conditions. In one specific place, they were able to manage shellfish for over two thousand years – we were able to date some of these structures. It didn't take us long, looking at shellfish management in the 20th century, to really do it disservice.

> We thought, "Why do we always need to go to science, to tell us how to manage something, when First Nations people have been doing it for thousands of years in a way that's sustainable?"
>
> – Nathan Cardinal

We thought we would look at these clam garden structures and restore a couple of them with the community as an experiment, for about five or six years, to have some idea about what these structures do, what their impacts are. At the end of our study we can look at the impact these places had, and provide recommendations to resource managers, not only Parks Canada but also other First Nations and the Department of Fisheries and Oceans, about these structures and the utility they may have in managing ecocultural landscapes.

We're just finishing up the second year of our project. The first year we spent a lot of time building foundations with the community. We spent a good year and a half doing outreach to community members. One of the things that we commonly heard was wanting to get Elders and youth involved out on the land. So we did Elders and youth science and knowledge camps. We did a lot of work in building research partnerships not only with local tribal schools and other school districts but also with SFU, Royal Roads University, with the Northwest Indian College in the States. We've involved different people from archaeologists to geomorphologists, to geologists and ecologists.

We have one person that's looking at the last time particles of sand saw light. They're looking at the photoluminescence to try to date some of these structures. If someone was at a beach and they turned over a shovel of sand and that shovel of sand was in the clam garden and it didn't see light until now, the researcher can date the last time that little grain of sand saw light. So we've got all these really crazy people involved in this project which is really cool.

It's all being led by the First Nations communities and what they want to see out of these sorts of places, what they want to learn about how old these places were and how they were built. We formed two traditional knowledge working groups that are community-driven, made up of experts identified by the community to help guide us in restoring these places and managing them. We have experts in languages, and experts in ecology. We've got people with long-term baseline information and community knowledge holders that hold different stories. These working groups help to guide the work, they participate in restoration activities like the grade one language class in tribal school; the knowledge holders come out and help guide the actions of the little kids. These experts are basically creating a series of traditional knowledge guidelines that will help to guide the project over time.

This winter we'll be going out at the low tides that occur at two in the morning in the month of January, managing the clam gardens just like people did in the past. Instead of working the usual nine to five we'll be working nine pm to five am.

One of the really cool things has been the wall restoration. This a photo [slide 11] of the clam garden site in 2008 on the left, and on the right, a photo in 2015 after over two hundred volunteers came out on the clam garden – about 90 percent were First Nations elders and youth – and recreated this wall structure here with hard work.

We quickly realized as a government agency that we would never be able to provide the protection of knowledge that our Aboriginal partners were demanding. We wanted them to have the power to collect that information and to hold that information and share what they felt comfortable with. That requires a level of trust on both sides. From a government perspective it was a change of pace for us. We also established terms of reference between the First Nations communities and Parks Canada to help guide what sort of information we were looking to access.

We conducted field visits with Elders and youth, doing individual interviews both in the field and back in local band offices.In group workshops local knowledge holders would talk about what was being shared, and whether there was a consensus about that. Our restoration project built on some of the successes within our shellfish project in terms of handing over control, and getting these expert working groups up and running.

Now we're taking the information from those working groups and operationalizing how we manage the clam gardens--when they need to be harvested, when they need to be turned over, all those sort of things. And the restoration groups are providing cultural guidance. For some of the kids who come out, this is the first time they've seen shellfish, so to be out there, to harvest and to see these structures reconfirms the expertise that exists within their own community. That has been rewarding for everybody.

Some of the successes and challenges we have had - in terms of successes, the project really is relationship-based. We've been working to create a level of trust between Parks Canada and the local Nations. It takes a lot of time. And through that process, that relationship, we've been learning how to be respectful and how to gather knowledge appropriately. If it wasn't for that relationship we wouldn't know how to gather traditional knowledge, we wouldn't know how to be respectful, we wouldn't know how to properly manage these places. The participants in this project are equals from the outset, they are resource managers, they are shellfish engineers, they are experts just as much as, even more so, than some of the scientists and ecologists that we're working with.

I spent years of saying yes. When I first started fifteen years ago I would be taking out three or four community members to go do some ecological-based projects. Last year on one day we had eighty people from the community helping out on our clam garden project. It was just years of listening, years of them beating me over the head telling me what we needed to be doing.

It has been really important for us as a government agency to acknowledge barriers so that we can overcome them. There are challenges around protection of knowledge. There are other challenges. How do we as a government overcome the barrier to paying people respectfully and appropriately and providing an honorarium for sharing their knowledge? As a government agency we need to have their social insurance numbers. Their banking information needs to go into our vendor system. That's not very respectful, so how do we overcome those challenges and work in a way that we can address those appropriately. And again turning over control I think was, is, a big part of that.

Another challenge is discerning meaning - do we understand what people are telling us? There are always challenges between timelines - the community's timelines as opposed to research timelines. Sometimes there's the challenge of lack of knowledge, be it scientific knowledge of the species or traditional knowledge. Sometimes have two traditional knowledge groups that are telling us different things. How do we resolve that? How do we move forward? There's always the issue of trust. How do we continually re-engage and ensure trust is there?

There's always a challenge as a government organization; we don't want to co-opt this project, we don't want to be the owners. This is something that has bloomed from the community and we want to continue engaging. How do

we walk that balance? And then there's the concern over overlapping territory. We work with nineteen different First Nations. The BC treaty process that has created some complications around the relationships amongst Nations, so how do we address that within our project?

We've spent a lot of time building relationships, not only between Parks Canada and First Nations but also at a project level. It's an intergenerational relationship as well, where all of us are working together to do some really cool things that benefit not only the ecology, which is a big focus of Parks Canada, but also the community, and does it in a way where these things are fused together. We see multiple benefits across the board for culture, for ecosystems, for organizations, for capacity.

I'm really honoured to be able to share that story with you. It's not my story, it's the story of the Nations I work with so I hope I have done them justice. I hope too you see some ideas you could take to your own home territories as well. Thank you for your time, I appreciate it.

Jennifer Parrot, Spatial Projects Coordinator, Inuvialuit Regional Corporation

Today I would like to talk frankly about the considerations and concerns around different technology methods in relation to traditional knowledge. Throughout my presentation I'll mention lots of case studies and examples, focused on the Inuvialuit Settlement Region, and then we'll talk a bit about lessons learned. But first I'd like to talk about the type of data that we're collecting and the application of those types of data to technology. I'll look at some new approaches and best practices and focus on data collection, data storage, access and sharing.

As we all know in the room, not all traditional knowledge is the same. Traditional knowledge can be captured along a spectrum, from a singular data entry point, all the way along through information and onto wisdom. You may be thinking to yourself, aren't those synonyms for the same thing? But if I can use an example: if someone who is looking to acquire traditional knowledge walks into a community and says, would you let me know of an area where traditionally fish was being harvested? An individual could respond with a very singular answer, like Husky Lakes, something that could be very easily mapped, put into a database and then stored and archived. We would use a very traditional type of technology to capture this information and store it.

The next level would be information-based, where we're adding additional meaning and it's not just one singular data point. This could be something around the type of species being collected, maybe the time periods, maybe some more specific locations around Husky Lakes. So now we're already looking at collecting a lot more information, just to answer the same type of question. And we need to develop a more complex database or form of technology in order to include that type of information.

The next piece is wisdom. This is what we often think about when we think about traditional knowledge. By wisdom,with regards to that same question, we could be talking about habitat conditions, how those types of habitat have changed over time. Maybe more specific locations, and more specifically around the times of year as well. Now we're looking at an even more complex type of system that would need to be applied in order to accurately do justice to the information that we're collecting. What I'm trying to say here is that not all types of technology apply to all types of

traditional knowledge. We need to consider the type of information we're collecting and the type of decisions we're trying to make by applying these types of technology.

Another piece is spatial versus non-spatial data. By spatial data I mean any type of information with an address or GPS coordinates. This will be stored, again, using different technology that can be linked to the non-spatial data. We need to be aware of the type of questions we're answering with regards to the information we're collecting.

The next piece is methods. Inevitably, with the introduction of technology, we're getting further and further away from that original oral transfer of traditional knowledge. This is inevitably going to have cultural impacts and it's going to have impacts around the understanding of this information. It's important to consider this, both to give justice to the information we're collecting, as well as having a holistic understanding when we're applying the information. We're looking at transfer of informaton from oral into written and then onto electronic recording devices and onto computers, and onto the internet. And just remember the potential effects of this.

Now we've thought about those introductory considerations with applying technology. Next we'll go onto data collection. The most recent technological innovation significant for the Inuvialuit Settlement Region is the migration away from traditional maps or paper surveys to the use of electronic applications. For example, anything from GPSs to field collection tools such as smart phones or different types of electronic means to transfer the information to electronic maps.Taking georeferenced images – that is, taking the photo, video or audio recordings and linking it to a place that you could then put on a map. There's a ton of new potential with applying these new types of technologies.

The technology is being used successfully in the region already. In 2015, ISR Fisheries and Oceans Canada developed a field collection tool that could be used on tablets to calculate beluga health with information from various communities. Like any new change in methodology there are positives and negatives. It's important that we acknowledge both of those.

On the positives, there are efficiencies and standardizations introduced with this type of technology. We make sure that the questions that are being asked are the same. You can introduce drop downs and make sure the type of information that you're collecting can all be analyzed and graphed. What you may already be starting to think is, "If we're looking at data, information and wisdom, this type of technology may not properly capture the wisdom pieces, it may only be able to be applied at this point to data and information."

A concern could be around security and cost. It isn't cheap. It's new technology, it takes time and expertise. You have to weigh the pros and cons of adopting this type of technology with regard to budgets, overall plans and security. Where is this information going once it's collected? It's really easy to look at oral tradition. We've got a knowledge holder; we've got a knowledge receiver. We know where they live, where to find the information. But as soon as you start to bring in other pieces of technology, you start to think to yourself, "Hey wait a second, where's this information going? How can I access it? How can I verify it? How can I bring it back to the original data holder?" These are considerations that need to be thought through before we adopt these technologies.

After we've collected the spatial information and non-spatial information the next piece is storing it. So the most recent

technological innovation I can think that would apply for the ISR would be the emerging database and storage solutions. The biggest one is cloud technology or cloud storage, which is a bit of an abstract concept. The easiest way to explain it is you're taking your computer, and the hard drive associated with your computer, and you're putting it through the internet and storing it somewhere else. You you can access it from your smart phone, you can access it from anywhere in the world using any device that you like.

We're breaking down a lot of barriers around information access all of a sudden.Instead of knocking on someone's door and saying, "Hey can you tell me that story, you know, I forgot or I need another piece of information?" Now researchers or policy members or people from other areas can access this information through cloud technology. There are also multi-relationship databases, for example, linking a photo to a place that's then linked to a story. Now we have the technology to be able to do that.

An example of this type of initiative happening in the ISR this year is the TLK database website that was developed through the Joint Secretariat and championed by the Inuvialuit Game Council; a really unique way of storing or cataloguing information that can then be accessed through the web.
We've got over 250 data records on there.

Again there are pros and cons to this type of technology. The pros are reduced cost and ease of analysis and archiving. When you've got all the spatial information or non-spatial information sorted in a similar manner in a similar location it's easier to determine the trends, to determine what's going on in the area and to store it in a way that can be accessed later.

The cons are some of the cultural impacts associated with this type of technology. As I mentioned earlier you're getting further and further away from that original oral transfer of information. Now, instead of the knowledge holder and the knowledge receiver being human beings, you almost have to think about it as a piece of technology. That's sort of cold, doesn't have a lot of feeling, and may not be how we want to be sharing and storing our information. We need to be aware of that as we're developing our studies. And again, there's the theme of security. We need to make sure there's a lot of thought put into how we're storing this type of information.

Lastly, let's look at data sharing and access. The most recent innovation is that information storage is internet-based providing instant access to information that can be shared globally. Traditional knowledge can be accessed by community members all the way up to community corps, HTCs, different co-management bodies, and federal and territorial governments. Sometimes we hear different federal departments or agencies say, well we can't access TK, we don't know what's out there. With the new type of data sharing and access we're breaking down barriers and removing the excuse to not consider this type of information.

To illustrate, a good example would be the geospatial platforms or web applications that are currently available. There are lots of initiatives taking place in the ISR region right now. I'd like to highlight a few, like the Inuvialuit Atlas, that's again championed by

the Inuvialuit Game Council through the Joint Secretariat. The Community-Based Monitoring Program (CBMP) through the Joint Secretariat has developed a web mapping tool where you can easily see what type of community-based monitoring is happening in the ISR. There's the Beaufort Sea online platform, championed by Fisheries and Oceans Canada, through the Beaufort Sea Partnership to link community members, HTCs, and community corps with industry. It has the potential to include 53 interested parties within the ISR.

Again, there are pros and cons. One pro: data is probably as accessible as it ever was. But there are some cons and the one I'd like to highlight is giving participants and data holders acknowledgement, versus privacy. This is a really hard conundrum. With an oral transfer you've got a knowledge holder and a knowledge receiver and you know where the information came from. We heard a little bit about that in the first panel. Many of the gentlemen who were sitting up here were saying, "I can acknowledge a variety of people for who I am today and the type of traditional knowledge I hold and would like to pass onto others."

As we start to collect traditional knowledge from various sources and various individuals and amalgamate it and share it and re-share it on different platforms,we're getting further and further away from the human beings who are the whole reason we're here. How we can acknowledge those human beings but also think about the privacy piece. With new privacy legislation, can we mention their names? Can we mention the true passion and heart behind this information? Or do we have to protect their identities while still acknowledging them? There's no easy solution but on a case-by-case basis we need to consider where the knowledge has come from, where it's going, and acknowledge the people associated with it.

That concludes the section of my talk around innovations and case studies. Now I want to talk a bit about lessons learned. For the past few years I've had the wonderful opportunity of working with traditional knowledge in the Inuvialuit Settlement Region. Over the course of the years I've heard lots of wonderful stories and a lot of not so nice stories. I'd like to just frankly touch on some of these lessons learned, because they need to be considered for the relationship between TK and technology to work properly.

The first lesson learned is, ensure the selected technology complements the project objectives. I don't think that it makes a lot of sense to apply something or purchase something just because it's cool or because it's new or because somebody else tells you that it's awesome. You really have to spend a lot of time thinking about what you're trying to do in your study. What's the point? The technology you select needs to make practical sense or else it's going to end up being a waste of money and probably a lot of frustration.

The next lessons learned is, develop agreements between all participants before beginning the project, especially when contractors are involved. I've seen so many projects over the years where you've got individuals that are coming in externally and doing work and there aren't any formal agreements in place, you don't know where the data is, you know they're keeping it, they're not giving it to you, they're charging more money to get it back. And this can be a scary hole. So please make sure that whenever a contractor or an external source through a partnership is being used that everyone understands and has signed off. Where is this information? Who owns it? Who can access it? Who can possess it? And where is it going? Because it can be a big headache and cost a lot more money than you expected. Communication is key and agreements are key.

Dominique mentioned, in her presentation, training and in-house capacity building. This is a crucial idea. When you've got the in-house capacity and knowledge to develop a contract for a contractor or to review deliverables, you want to make sure that you're strengthening your co-management bodies or other organizations so that the people there can make meaningful decisions around technology and TK. It's really important to spend the time on strengthening your own organizations and making sure that you're focusing on the people who are part of your organization.

The fourth lesson is about archiving. There are lots of examples of initiatives over the last few years where there was historical information collected and stored, using products that don't exist anymore and software you can't access anymore. people spent all this time and effort and money on this amazing project that should develop change or be used for decision-making and all of a sudden they can't access it. I can't stress enough that archiving is so important. What's great is archiving is super cheap now, it's really straightforward and maintaining it doesn't require a lot of work. You don't need to hire a contractor.

I know I've talked a lot about considerations and concerns and a bit of negativity around the idea of technology. But that's because there is a ton to consider. This isn't an easy decision to make. Traditional knowledge is super complex in itself and when we're looking at applying technology, also potentially very complex, it raises even more issues. But there is a future that is pro-technology and TK.

I have some tips, and I appreciate any feedback if anyone in the room doesn't agree. The first one is, collaborate whenever possible to minimize overlapping initiatives, especially within the Inuvialuit Settlement Region. It's a good idea to work together if there are similar objectives, similar methods being used and a similar way of relaying the information at the end. I'm not saying give out all your information and trust everyone in the room but at least consider working together so we don't have so many redundancies around the information that we're collecting.

The next one is selecting inter-operable technology that can integrate with existing infrastructure. Okay that's a ton of huge words. What I'm trying to say is when you're adopting technology please consider what you already have. If you have a business or a co-management body or a federal agency that's using MACs consider not adopting a PC solution for your field collection because it won't make a lot of sense down the road. Or let's say all of your partners use Androids for their phones and you're developing a MAC-based field collection tool. Consider aligning with what you've already got and with what the people that will be using your information.have. You'll save a lot of money, you'll save a lot of time, and it makes logical sense to do it that way.

The third tip is, ensure all technology-driven initiatives are accompanied with best practices documentation. Developing best practices and data sharing agreements, make sure that everyone's on the same page, make sure that your study is repeatable and has credit. By doing that you can develop best practices and policy documents. The last thing you want to do is collect a whole bunch of stuff, try to analyze it and then realize, "Hey wait a second. I didn't use consistent methods, I didn't get data sharing agreements, not everyone in the study was aware of what's going on or I've changed my objectives halfway through." Try to minimize those types of things.

And the last tip, and really at the end of the day what my suggestion would be, is cautiously embrace technology. I do think that technology and TK have a future, and I did purposely write cautiously because there were a lot of considerations in this presentation and a lot of concerns. But technology can really, really strengthen how TK is being collected, stored and shared. I hope you guys feel the same way. Thanks for your time.

Kim Heinemeyer, Lead Scientist, Round River Conservation Studies

I'm really honoured to be invited to the conference and to present with John Ward of the Taku River Tlingit. I've had the honour of working with the Taku River Tlingit for going on 17 years and it's been a great experience and some great friendships have evolved from it.

Today we were asked to talk about some of the ways in which the Taku River Tlingit have applied their traditional knowledge to meet their land planning and management goals. So John and I thought I would present some of the information on how we used the Taku River Tlingit traditional knowledge and then he would provide the perspective on what that has meant to the community and the management of their land.

The Taku River Tlingit traditional territory is nestled up against the Yukon border in the northwest portion of BC. The territory is large, 4.1 million hectares. There's a road coming down to Atlin from the Alaska Highway and some roads emanating out from Atlin to the east for an area that's been placer mined in the past and serves many purposes today for cultural reasons and resource collection. Essentially the rest of the territory is roadless wilderness. This includes the Taku River itself which is about a two-million hectare watershed with about five thousand kilometres of wild salmon rivers.

The territory has a natural, functioning salmon-grizzly bear system and all the environmental values that those salmon bring, as well as really high cultural values associated with the salmon historically and currently harvested by the Tlingit. The Taku River goes through the southern portion of the territory out through Juneau, Alaska and is one of the largest salmon-producing rivers of Southeast Alaska. It's a very important river internationally as well.

The territory is much larger than the coastally-influenced areas and goes into boreal- influenced landscapes. Those forest and alpine habitats still boast natural disturbance regimes. I come from the States, originally from California, so the first time I flew over this region I was amazed at the natural fire disturbance regimes that create the mosaic of habitats and landscapes across the territory. We few in this fixed wing for two or three hours and I never saw roads or any sign of human development, just these natural disturbance regimes. You from the North are kind of used to that, but coming from the South that was a novelty to me, and speaks to the incredible value of these landscapes.

Thr region has healthy wildlife populations and the Tlingit have a strong land-use economy and culture. The Round River Conservation Study is a non-profit organization based down in the States. We work with communities to help them meet their land planning and conservation goals by providing whaever technical assistance in we can. The Tlingit invited us in to help them meet some of their land conservation and land planning goals, such as: maintain natural conditions to sustain biodiversity and Tlingit traditional use; provide opportunities for compatible low intensity developments (the Tlingit didn't wanted to prohibit developments, but wanted appropriate developments in their territory); and to use Tlingit knowledge to achieve these goals and to manage the land.

I think John might talk about this more, but, similar to many First Nations in BC, their treaty hasn't been settled, so the Tlingit continue to manage across the entirety of their traditional territory. We came back in 1998 to help them develop conservation assessments of their area, help them understand where the most important areas ecologically and culturally are across this vast territory and to develop a community-based land plan.

I'm going to talk about a few aspects of where we brought in traditional knowledge to help us understand that large landscape. I think some of the unique parts of what the Tlingit have asked us to do was to use the traditional knowledge combined with scientific tools that can leverage that traditional knowledge and meet their goals. I was fresh out of college when I landed in Atlin with this big project. We were working with the Tlingit trying to figure out what we needed and how to go about it. We needed a series of maps that would depict the values of interest across their territory, and this included for example a series of habitat maps of various important species. We just naturally used traditional knowledge, without making it very complicated, because that was clearly the best available information for the region and we wanted to produce the best products to help the Tlingit achieve their goals.

> We just naturally used traditional knowledge, without making it very complicated, because that was clearly the best available information for the region.
>
> – Kim Heinemeyer

When we started to develop the traditional knowledge-based wildlife maps, we said lets ask the users of the land to tell us, for example, where important moose habitat is. The reality is the users of the land are very careful to only share what they're certain about. What they're very certain about is where they spend their time, and contemporary land users spend most of their time around Atlin and the more accessible parts of the territory.

So, when we got done with the initial mapping of moose habitat the maps would show a lot of blank area outside of where people felt their highest expertise was. But what we figured out in the interviews is that people had these very rich descriptions of what good moose winter habitat and good moose summer habitat was. Verbally they could describe it, whereas on a map they were only willing to identify where they personally knew those places existed. But, we used the verbal descriptions they provided to develop models to apply traditional knowledge across their whole territory.

This is just a quick example. In an interview with Brian Jack, where we ask him about grizzly bear spring habitat, he says "When they come out of their dens the first thing they do is go for the crocuses. The east and south side of the mountain is where the crocuses come out, so that's where you're going to find bears first." Well, he would only be able to map a few of those slopes that he knew about, but we can map using geographic information systems..We can map those south and east side slopes to capture his knowledge across the entirety of his traditional territory.

So we conducted interviews and asked a bunch of questions about each of the species we were interested in and the characteristics of the habitats for each of the seasons. The characteristics that people told us were important for grizzly bears in the springtime were floodplains for salmon carcases, open hills with new growth grass and bear root--east and particularly east and south facing slopes, as I mentioned earlier. Many of those we can capture in a GIS system. For example, we know the salmon spawning areas, because it's a very important salmon system that's been well mapped. So we could capture the traditional knowledge verbally, and translate that into habitat models that were basically across the territory of the Taku River Tlingit.

These were completed for five species in multiple seasons--moose, caribou, sheep, goat and grizzly bear and three to four seasons; winter, spring, summer and or fall. This became the basis for land planning and management for

the species. We found then that the mapped work was important, and we used the maps. We were capturing appropriately the verbal traditional knowledge information so we could use that for verification, but, the verbal information, the oral knowledge was what was so powerful in this case to create these maps.

These maps, these habitat models have undergone what I would suggest has been pretty rigorous testing. We went back to the community multiple times and to each interviewee making sure we captured their information correctly, so there was a lot of one-on-one validation that we had captured people's work. But we also sent it out to to regional biologists, and some may be in this room, to have them review the models from a Western science perspective. We compared the data where it was possible to collar data so we could validate that those animals were spending time where these TK-based models were predicting high quality habitat. We also brought on a grad student who developed a quantitative model for caribou. There were a lot of caribou GPS collar locations in the area, so she built a resource-selection model and compared that to the TK based model to see how different they were. She found out that indeed they were quite similar. They're shown here on the map [slide 14], the left side showing the TK-based model and the right side showing the quantitative model. The colours are a bit different, but, if you look at the pattern, if red is the high-valued habitat, you see the same areas are popping out whether you're using GPS collar locations or traditional knowledge.

That work has been published in a fairly conservative peer review journal, "The Journal of Wildlife Management" which actually published this work. That's a win for traditional knowledge, that it's in a scientific journal that shows TK stands shoulder to shoulder with the most cutting-edge standards of Western science approaches to habitat modelling. In the end, the most important thing was that these models have been used jointly by the British Columbia government and the Taku River Tlingit as the habitat maps that guided land use planning for the traditional territory and a joint government-to-government land use planning process.

I'll go through one other example of how the Tlingit have used TK- and TU-based of modelling approaches to create powerful products that have helped them meet their land claim objectives. Another piece of important cultural information they had was a large database of more traditional use information, like hunting and fishing areas, berry picking areas, trails, archaeological sites, old village sites, grave sites and other high-use areas. They were in the form of what we call spaghetti maps, and the challenge was how to use all that information in a way that supported the Tlingit and the land use process that identified areas important to maintain for their cultural use into the future.

There are a couple of ways that we tried to summarize and synthesize the information. Here in the upper panel [slide 16] I show camps and cabins across the territory, hundreds and hundreds of sites across the region. One way you could summarize that is by a density analysis within each water shed, pulling out those areas where there are more camps in a water shed. If you do that you'd get the map in lower panel, showing in the darker browns the areas where there's higher concentrated use. But the risk here is that these are only the camps that are documented in the database. We know that historically the Tlingit used the whole of their territory, they're contemporarily more limited because of the expense of going to some of the more remote regions of the area.

The Tlingit didn't necessarily want to use something so limited to the contemporary knowledge, because there's a lot more work to do to capture their work historically. We basically developed what we affectionately call the Tlingit habitat use model, using habitat modelling techniques, the camps and cabins and other features of cultural interest, to identify the kinds of landscapes that the Tlingit used, to come up with what we call a Tlingit land-use model instead of a Tlingit habitat model. The map doesn't show it well, but, the areas of green are the areas identified as high-valued Tlingit landscapes. In the land planning process, this got us away from having a bunch of points on a map where you draw a circle around a point and say

we're protecting your cultural interests by drawing a circle. The point isn't what's important, the landscape is, the landscape that brought the people to that area, and the values of the landscape.

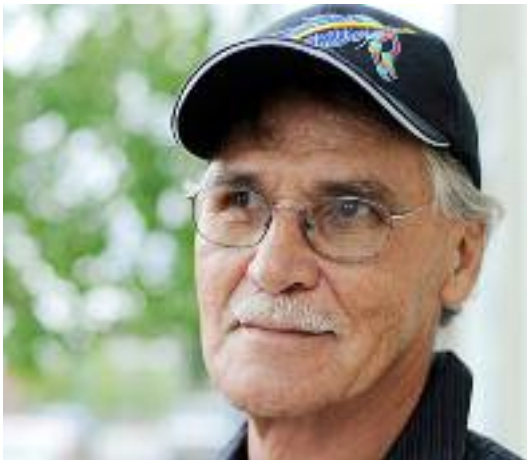
This map better portrayed Tlingit land use than a scatter of points or a series of polygons. The Tlingit used the map in the land-use planning process; a lot more went into the process but certainly these products these TK and TU-based products were foundational to the work we and the Tlingit were able to do. I use "we" colloquially in this work.

Just briefly, the land-use planning process produced a series of land designations,of protected areas and special management areas across the landscape. TK-based processes identified important ecological and cultural landscapes as priority areas. Another important outcome was the shared decision-making arrangement, which John will likely touch upon, between the Tlingit and the BC government using traditional knowledge. In summary there's a rich array of TK and traditional use, that the Tlingit have used in combination with scientific tools to build some pretty powerful planning products. I think the approach has highlighted the power of TK. With that, I'd like to invite John to add some perspective on what that has meant for the Tlingit.

John Ward, Taku River First Nation

Well, it's been a great day. Thank you very much Kim. I also really appreciate and value people for their hard work and their vision to carry this kind of work on. I wore my vest today to honour them for that; we know what it's like to go through those times, we went all the way to the Supreme Court to validate our traditional knowledge of our territory and to validate our very existence and our connection to our land. To give a little background to all of this wonderful work, back in the early '80s, Pierre Elliot Trudeau days, we'd opened the doors for settling the land question.

We started with the British Columbian government, who had their doors closed and refused to engage until a decade later. So we started talking amongst ourselves and with our elders: "How do we do this, how do we deal with modern day treaty making?" Treaties are not strange to our culture and our history. We had oral treaties, but this is a modern day treaty and so much has changed since back then. So we discussed this for a number of months and we finally came up with a land plan. That's the way to do it; it's a step towards treaty making. Those days there were so many stake holders, miners and loggers and other commercial users, and they outnumbered us. We sat at those tables, we got dominated so quickly, so we refused to enter into the land use planning processes of the day. Our people wanted land protection planning. We've got to protect our land to protect our way of life, we're actually protecting ourselves. I've been hearing some of that today.



So along comes this mine, while we were in the planning process, wanting to open up our traditional territory for industrial development. The battle was on. It was like a collision of who we are, what we're about and our connection to our lands, and them wanting to use those lands for their benefit. So we really couldn't work that out. The scientists in those days with the environmentalist assessment office had the job of assessing those matters to recommend to the government decision-makers, yes or no? We were involved in that process and we weren't shy. Because we didn't have a whole lot of education, we didn't worry about science, we didn't worry about academics, we worried about our traditional knowledge and our way of life and sought help to communicate that. That's what was really going on. We joined the environmental

assessment process on those particular mines, which included a 100-mile road from Altin British Columbia to this mine site which would literally open up the territory.

We looked at the science, but, the science of that day was to list "how do we make this happen?" That was their goal, the science was kind of polarized to that goal which really didn't give much weight to our traditional knowledge or our concerns. We wrote our own reports to the decision makers, which they ignored. They didn't want to give any weight at all so we finally said "Look, we don't want this mine to go through and let's do a joint land use plan first and then we'll make some considerations."

The BC government's position then was, "Well you have to prove that you have rights. The only way you can prove that you have any rights is to have a treaty. That's where those rights are defined. Or you can go to court and the results of that will define your rights. Other than that, our position is that you have no rights." We really couldn't go forward on that basis, that would be a terrible precedent to set for the rest of the country, to agree to this project under those terms. They basically forced us into court. So after winning in British Columbia court they appealed, it went to the Supreme Court of Canada and we won that too, in 2004, seven judges to zip said "The Taku River Tlingit's don't have to prove anything, they do have those rights and you better deal with them."

The judges said the BC government was going to have to accommodate the Tlingit now. In two areas they were really strong; they said you must complete a joint land use plan and negotiate a joint authority. To me that term is really important. It was a new drum beat coming out of the Supreme Court. We put our trust in the justice system. We weren't getting anywhere politically or we couldn't convince the bureaucracy or the technical people. We've been ignored for generations, but all of a sudden we show up so they have to cooperate now. But we had to get ourselves organized on this end too, we saw the responsibilities we had. So we got help to be responsible.

So what drove us to this? Well, we wanted to see a treaty, we wanted to see our traditional knowledge incorporated and our language incorporated in these documents; those are really important for future generations. We want to be responsible to future generations; we want to leave them something. That's what really drove us. Of course many of us believe we're going to have to give an account to our creator sooner or later for how well we've been stewarding what he gave us. That's what we were thinking at home.

People like Round River, who we've partnered with, took away a lot of the intimidation about the differences between traditional knowledge and academics and highly technical experts. We were able to sit and just be people. In going through the process with the BC government, they were legally obligated, they had to sit there and work this out with us. There were times when we both sat on the same side of the table looking at the problem to come up with solutions and when it was done, they did make some changes. Some. It doesn't mean it switched around to favour us totally. It's a work in progress.

I have a mechanical background, so sometimes I relate a problem to mechanics. If you're going to build a machine and determine what this machine is going to do, you have to ask what is it built for? It has to do exactly what it's built for. In this case we built a system. We need to hire the best operators to operate that machine; otherwise it's not doing what it's meant to do and it's a waste of time and a waste of money. One of the things that saved the Taku River Tlingit is we developed our own constitution with a set of principles embedded in that constitution and we live by them and we make our decisions by them, because we're bound by it. Those of us who had differences in the community, in the nation, had to acknowledge those principles and go forward.

This is a picture immediately after signing the joint authority with the Premier of British Columbia. My people came down, and we danced. That's another thing my people have to learn, is how to celebrate. It's been such a rough haul for so many generations. We have to learn to start celebrating these little victories, these accomplishments. But I believe the evolution is still in progress. We're not completely

there yet until we have some relaxation about those terms that we're hearing today, about trust. That's a big one, when we can trust. Respect is a big one; that's what my people wanted. They just wanted to be respected for who we are and what we're about and to be visible, to be actually seen.

I went forward basically leading and guiding two processes within my own people and through the process of land use planning, the court case and so on. That included the political, the legal and the technical, a three-pronged approach. We moved forward a step at a time; we'd take a step, something would happen, we'd stop, take time to analyze according to those three prongs and then plan the next step. That's how it went forward. The other side was going back to the community, consistently giving them updates, not even waiting for milestones to talk with the Elders about what was going on.

We need new terminology, we're in a new drum beat that requires a whole new language. The Bible says "You can't hold new wine with old wine skins." It falls apart. We're in a day where we need new terms and the terms need to come from our people. How we manage and stay connected to our lands. One of my friends said "As indigenous peoples we looked after our lands for generations and generations and the newcomers come and within five centuries it's almost destroyed." We're a little bit worried about these future generations. So, we've got to turn this around and create this whole new language and processes and systems to have sustainability. So with that, gunalchish. Thank you very much.

Bryan Evans

Thank you very much John and Kim. I will just open the floor briefly for any questions or comments flowing from the panel presentations this afternoon.

Unidentified Speaker

Thank you. First of all I'd like to thank the panel for the presentation this afternoon. I have a question for Dominique. Towards the end of your report you mentioned a scientist will consider values and beliefs as part of TK. I'm wondering at what point in time will the scientists decide when our tradition and knowledge become valuable to the work that is being done? What would happen if we told the scientists " we value your beliefs, but I still believe we're right?" Can you explain or let me know if the scientist will value our beliefs?

Dominique Henri

Thank you for the comment and for the opportunity to provide clarifications. Perhaps the word 'consider' was not the most appropriate to use in the context of my presentation. What I'd like to emphasize is that often times, mostly in resource management, it's the ecological observation aspect of traditional knowledge that is used to inform decision-making. I think this is incomplete; this is an incomplete approach to take. When thinking about making decisions based on traditional knowledge there needs to be consideration for the wider values and belief systems embedded in TK. I think Brenda was also speaking to this, when presenting a graph about the different levels of meaning embedded in TK. With the time I have now, let me provide you with an example for polar bear management which as we know can be a contentious issue at times. In that context I think traditional knowledge holders can provide information on population trends, for example, but, very importantly they can provide value-based perspectives on what's achievable. Harvest rate, for example, what they view as good level for polar bear

abundance. They can also provide value-based perspectives on the ethics of doing scientific research. Observations from TK are important, but values and beliefs are equally critical and often overlooked. I hope I addressed your comment and thank you.

Unidentified Speaker

Sorry to be picking on Dominique, but, I'll have something for you in a second. First I would like to congratulate and commend Taku River First Nations, along with John Ward and Kim for the work that you're doing. In dealing with the provincial and federal governments, to get that far. You said you have to learn to congratulate yourselves and celebrate those victories although they may be small at times, or you may think they're small. We all over Canada hear about these victories, about Indigenous peoples winning battles in courts so, you're not alone in that matter, but, again I commend you and congratulate you.

Now for Dominique I have a question that pertains to identification of management issues. One of my colleagues Jerry he's always mentioned to me that one of the first things you should do is, consult with communities first. Hopefully that's one of your first steps. Science might know something outside of the community, that the community doesn't know could be a problem, but, you must come and consult first and not just say "Here's the problem that your community is facing, here's what we're going to do." Hopefully the first thing you do is consult with the community.

Dominique Henri

Point taken. Thanks for the comment and I think I completely agree with you that consultation should be a key step and engaging with those that could be interested in the issue also can be a key step. There are various situations and the order in which things are done can vary, but, the bottom line is consult early, communicate early and that's the basis for agreeing later on, so thanks.

Boogie Pokiak

I just wanted to come up here and say to John, thank you for coming. We've come a long way as an Inuit people. I'd like to thank all the people who've come to be a part of our process here and it's good to hear that at least you're getting somewhere. I really appreciate the information that you give us. Thank you for wearing your vest. On behalf of our regional corporation, our chairman couldn't be here, so she asked me to come and observe because we've got our claim too, but, we have to take a step back to see, are we winning yet? It's a whole process, our claim was just a start and we've got to build on it. So I really appreciate your presence. Thank you.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Day Two: Wednesday, September 30

Bryan Evans

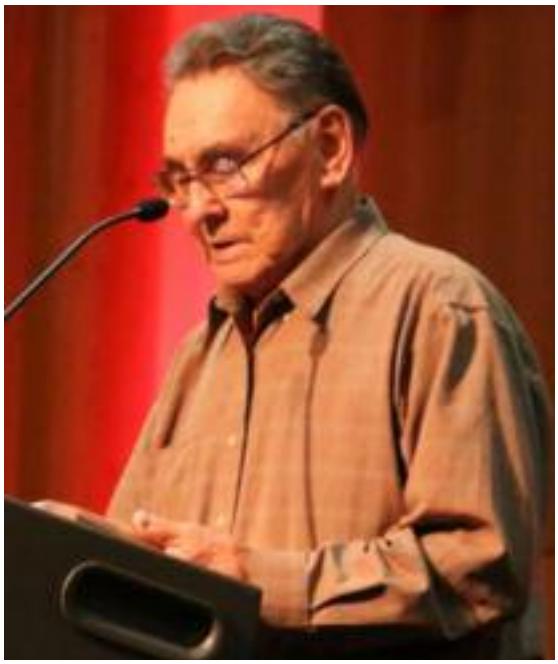
Welcome to Day 2 of the North Slope TK Conference. I have a couple of introductory comments before we start the day, but was hoping I could invite Charles Pokiak up to the stage. He's offered to start the day with a bit of a story and some bird songs. I think he might ask if there are any women in the room with their .22s, if they could put those away because he will be doing a ptarmigan impression, so please put your guns away. Thank you.

Charles Pokiak

Hi. I'm going to do a little story first, a fishing story. You know, I go out with my brothers quite a bit, out to Husky Lake. This one time me and James, he went to Diamond Point and I stayed at Little Bay. This was after I lost my arm, about 28 years ago. I was fishing, catching fish but I couldn't pull them out and I was wondering how the hell I'm going to do this. I had a 20 foot line, eh, and it was deep around there. So I decided to pull it up walking backwards. This was a big fish. It must have been about this much halfway out of the hole. And it just took off. I lost it, I couldn't run back fast enough. [Audience laughter] Yeah, I was about a hundred pounds more then. Maybe that's why. And my moon boots were big. Anyway, I decided this time I'm not going to lose this one. So I started putting the line around my neck, putting it around, wrapping it up. And the next thing, I got about 8 feet, actually I got it, so I jumped up. [Laughter] I was pulling it up and I put the line in my mouth. I had about 8 feet left and it got caught so I wrapped the line around my hand. I had ithe fish I could see it, so I jumped and I threw it back [over my shoulder]. I forgot about that line in my mouth. [Laughter] Blood all over. Yeah, couldn't take out that line for a long time. I don't know I don't know who was bleeding more, me or the fish. [Audience cheering.]

I'm going to do a few bird calls, I hope you don't mind. First one is a swan. [Several more bird calls.] Okay, thank you.

Bryan Evans



Thank you very much, Charles. Just before we get started, most people, I think, attended the North Slope Conservation Awards last night. It was a wonderful dinner and a wonderful presentation. For those who missed it, three individuals were recognized for their outstanding contribution to North Slope conservation and I just want to acknowledge them again this morning. They were Marsha Branigan, Bob DeLury, and Danny Gordon. Please join me in congratulating them.

We had a panel presentation yesterday afternoon, as you remember. Hopefully that hasn't drifted out of your minds already. I'm going to ask Lindsay to give a quick recap of where we were at the end of the day yesterday, to lead into the break out discussions today.

Lindsay Staples

Good morning, everybody. I'll be very brief, but the idea is to try and reduce the disconnect between 8:30 today and 4:30 yesterday.

I thought we had really great presentations yesterday. We had a diverse set of views expressed on diverse aspects of the collection and documentation and communication of TK. This afternoon's Panel Three is looking at what I would call the tail end: once you've got the TK documented or you're in a position to have it orally presented, who's going to hear it, who's going to use it? Panel Three is about is how do you treat TK once it has, in fact, been documented or articulated. If you're a tribunal, a court, a resource manager, how do you hear it, how do you approach it, how do you navigate these cross cultural differences. Many of our co management regimes by definition now are half Aboriginal people, at least that gives you some comfort that half the people you're speaking to, are introducing your evidence to, are your own people. This whole issue of governance is basically about the issue of power and control and how that affects the treatment of TK. I think Panel Three this afternoon is really about that question of power and control and the treatment of TK.

Yesterday morning's discussion was more along the lines of what do we understand TK to be, how is TK as a knowledge system different Western science bodies of knowledge and how do we navigate through the difference. Again, there was this cross cultural element. Yesterday afternoon's discussion, though, was quite different, it lies between the first panel, which is how do we understand it and the third panel, how do we treat it. The middle point is how do we collect it, document it, how can we capture it in a way that respects the nature of that body of knowledge and the people who are providing it.

There was a lot of talk yesterday about trust and respect, about long term relationships and clearly that's part of it. In her presentation Dominique Henri walked us step by step through that first contact, the very first conversation around what it is we're looking to get a grip on from a TK perspective, what are the issues, what's that body of knowledge, what are the important questions. She took us through that quite nicely. And then the whole business of, once you've established the relationship, how do you best capture or document TK? And she talked a little bit about that as well. Beyond that there's the whole business of communication. Validation, too, is a really important issue and I hope you talk a bit about that in your break out groups.

And then finally, how is TK transmitted? I was delighted with Jen Parrott's presentation because it really got into how the digital world affects how we're working with TK and can work with it in very powerful ways. At a practical level, one question I hope people in the break-out group think about, particularly the TK holders in the room, is, what are people most comfortable with? You can work with paper maps, you can work with full on digital maps on a tablet or a computer screen. Or you're out in the bush and you've got a smart phone and there's a little map on your phone. Some of you, are going out with GPS loaded with your maps.. And then there's using a combination of the two. So from a TK perspective, depending on the purpose that you're going to put it to, do you want to walk away from paper or are there people in your community who still want to sit down and see 1:250s, or 1:50s on the table. Do you want to get your pen and ink out and start drawing, is that what you're most comfortable with, or do you want to pull out a tablet or an iPad and start working off that? If we can get that out of this next workshop, that would be really helpful.

Similarly when it comes to documenting TK and you're sitting down with TK holders, are people comfortable with cameras, audiovisual, strictly audio? Dominique mentioned the idea, and many of us have done this, of taking young people or someone in the community along with a non Native researcher so you're working as a team and you're building capacity through the work. Again, those are the kind of things that I hope you might talk about.

Really, what this next working group is about is how can we improve the state of the practice? And part of that is, what do you think we've done badly in the past? What kind of practices have not worked well for us and we want to move away from? I make no apologies for the fact that maybe 15 years ago, to collect TK was basically to know there was an elder in the community who may not have much longer and you just walked in the door and started running tape. You had no questions, you had no research design, you just wanted to get what you could. In the circumstances that may be all that's available to you and the best way to do it. There are obviously better ways but that's better than not doing it at all. I don't think there's any shame in doing things, for the purposes of getting what you can. Again I hope you'll talk a bit about that.

Nathan gave us a really interesting case study of the work that he's doing in a coastal environment, and what comes out of that is clearly the power of the relationship between those who are collecting the information and those who are providing it. He did a wonderful job of showing how a large government agency like Parks Canada has worked with a group of people and established a very personal relationship. It's not an impersonal one, it's not a sterile one, it's a really rich relationship and I think Nathan did a wonderful job of painting that.

At the end of the day we had that terrific presentation from Kim and John. You know, I think John closed yesterday in a very powerful way and I think we were all really quite moved by what he had to say and the way that he said it. What is unique about the Taku study is the notion of how we can use TK for the purposes of habitat mapping and conservation. We're not using TK in that context with regard to an industrial development, we're not using it for population status assessments, we're looking at it in terms of protecting the land base. Yesterday morning when Bob DeLury began, he was talking about the power of these modern day agreements and how it's not just about wildlife but it's about the habitat that wildlife depend upon. I thought the work that Kim at Round River and others are doing in the Taku is a really good example of how we can use TK in some really innovative ways.

So I'll leave it at that. This really is about innovation. It was a rich session yesterday and I'm looking forward to hearing what you have to say out of the breakout groups. Thank you.

Breakout Group Summary: Best Practices and Documenting TK

What innovations have been introduced in the collection, documentation and communication of TK?

- Innovation in social media–there are now more opportunities for TK holders to document the information themselves, and info is less distorted because it comes from the information-holders themselves.
- Example of project in Aklavik--use of video cameras made the project interesting because the youth were also involved.
- Storytelling was very important in the past–-we remember the people who tell the stories and what they stand for, because people speak from the heart.
- Better technology and ability to store the data means that it doesn't just sit on the shelf and gather dust, TK is actually being used.
- Archiving original data (e.g. cultural institutes).
- Connecting with TK holders to make sure we're accessing the right information.
- Berger inquiry and land claims negotiation brought awareness of the importance of TK
- Photo, voice and video documentation go a long ways for ownership in collecting TK.
- GIS and using mapping technology (topographic maps).
- Polar Bear TK study is a good example of innovation. It used a lot of improved techniques, rather than totally new tools (e.g. multiple validation processes). It also had a well-thought-out strategy for sharing of information.

What do you consider to be best practices in the documentation of TK?

- There are existing policies and frameworks that can help guide best practices: Ownership, Control, Access, Possession (national principals guiding the collection of TK), research advisors, research permits and agreements that are done right with a thoughtful process done with the communities, TK ethics panels that guide Universities.
- Best practices in designing research:
    - Co-design project (including methodology, data-sharing agreements, ownership of data) from the start and ensure transparency in the process.
    - Trust must be built from the start.
    - Need to look for partnerships in regards to funding. The best practices for partners are a) those who are really interested, and b) really sensitive to what they're doing and who they're working with (rather than partners who take information and run).
    - Access archival information so you don't have to start from the beginning.
    - Researchers need to know the area that they're going into and be familiar with the land claims.

- Communities or local organizations need to be the decision-makers for how much is enough TK. Those local organizations/communities are owners of how and when it is to be used--might need to be capacity building in communities to make sure there is that ownership
- Need for protocols to guide the work that people are doing and how they engage with the community

- Best practices in collecting data:
  - Whoever is gathering the information must be culturally sensitive, and sensitive to the lifestyle of whom they are collecting information from.
  - TK must be documented in language people are comfortable with. It needs to be documented like it's said.
  - Listen to the whole story, even if it means coming back. Elders like to tell you stories before they give you the information that you want. This doesn't fit well with people who have a limited timeframe. You have to be prepared--you can't go into a community and think you will be there a day
  - Visual aids are good: e.g. maps.
  - Interview multiple generations of people that have different types of knowledge–Elders have passed on knowledge to young people.
  - Interview tips: use a variety of people rather than going to same people repeatedly, communicate with community so they understand interview questions and get community input into questions, interviewees should have questions so they know what is coming, workshop group discussions are better than just asking and answering questions, involve youth in TK workshops, keep questions open-ended.
  - Different generations may need different approaches--e.g. Elders may be more comfortable with speaking directly with people--which is why Elder-youth collaboration is so important.
  - Need to keep up with technological changes.
  - Encourage use of audio, because video can make interviewees nervous.
  - The right people should be participating in the research process–need to build capacity, train and involve youth, hire community coordinators, get advice from guiding committees.

- Best practices after data has been collected:
  - Verification of TK--use a peer review process whereby TK holders review the TK that has been collected. TK and science are different frameworks so they may require different verification processes.
  - Transcripts must be readable.
  - Co-analysis--coming back to the community and doing analysis together so results are consistent with TK that was given.
  - It is disappointing when TK is gathered and not used--sometimes scientists aren't equipped with tools or knowledge to take advantage of using TK. It is often the case that biologists have to do social science, which is why it is important to just start the conversation.
  - Don't dilute TK ("books not tweets").
  - Different communities have different approaches to educating youth.
  - Make people comfortable when you get information to them.

- Best practices in data stewardship:
  - Make information accessible to people who have provided it.
  - Security of data so things aren't lost.
  - Balance complex programs for data management and making it accessible.
  - Consider where information will be housed and by whom in the long term (e.g. what happens if the organization holding the information folds?). Programs must remain manageable and maintained so that data is available in the long term.
  - Archiving requires infrastructure to store data and allow it to be usable.

What current practices should be discouraged or prohibited and where are improvements needed?

- Practices to be discouraged or prohibited:
  - Fly-in fly-out research.
  - Not using Indigenous academics or youth involvement.
  - No verification process.
  - Over-reliance on public meetings.
  - Need to make sure some data isn't prioritized over others, because knowledge has lots of different formats--information associated with a place, stories, legends.
  - Innovation could be less expensive. Funding is always a problem, and there is not enough money to build capacity in the community.
  - Information shouldn't be altered to meet the needs of the person receiving the information–it has to be gathered and documented in the language of the TK holder.

- Improvements:
  - Better protection of TK over third party use (e.g. Greenpeace)--how do we make sure not just anyone can use it in ways that aren't appropriate?
  - Researchers often conduct literature review–need same type of review done in TK so we can use what has already been collected rather than asking same questions over and over again.
  - Ownership of information remains with the person, community, region, etc.
  - Need to have the ability to use legislation wherever we can to protect the work of TK.
  - Could be improvements in consistency and processes (e.g. who researchers contact in the community).
  - Information needs to be stored locally, which has implications for infrastructure that will be used to house information.
  - Better permitting process.
  - Make sure there are no language barriers and that people are in a comfortable setting.
  - TK is out there but not well archived or catalogued (difficult to find).
  - Connect ethics approval with community so they can review it to make sure it fits .
  - There is danger in relying on technology instead of focusing on the information that you're looking for.

- Student programs should be developed.
- Consistent reporting on the whole project.
- Clear agreements with governing body and community.
- Mechanisms to enforce licensing and OCAP.
- Involve community through whole process.
- “Living documents” like community conservation plans can continue to be built upon..

What methods of collection and documentation best respect the nature of TK?

- Documenting stories in the language--a lot of the TK is in the language.
- Spending time with people before the interview and getting to know them
- Need for cultural orientation training–people conducting interview should have social science training and cultural training (e.g. Nunavut has training via Literacy Coalition).
- Community is part of developing methods and methodology.
- Examples--video, photovoice, small documentaries so that they can knowledge can be educational tools.
- Use best tool for collecting data and reporting data according to circumstance, and this varies (e.g. technology may be appropriate depending on who you are interviewing).
- Culture camps get Elders and youth on the land.

Panel Three: Traditional Knowledge in Research and Management Planning

Bryan Evans

Thank you to all the presenters who came up and all the input. Obviously people took the guidance this morning very well and came back with a lot of concrete recommendations and guidance. Now we're shifting gears into the third theme of the workshop. The intent here is to raise the bar around the use of traditional knowledge in resource management and decision making, so really where the rubber meets the road. We have four presenters,. Our first presenter is John Donihee, legal counsel to the Inuvialuit Joint Secretariat.

John Donihee, Legal Counsel to Inuvialuit Joint Secretariat

Good morning. I would like to start by thanking Lindsay and the organizers of the conference for the honour to be here and for the kind invitation to make a presentation to you. I have the privilege to act as counsel to the Joint Secretariat and to assist the Inuvialuit Game Council from time to time. And I act for other co management tribunals in the Mackenzie Valley as well. And so the question of how, when, why, and how much traditional knowledge should make its way into those sorts of proceedings, these are questions that I have dealt with on many occasions with my clients. They're extremely important and I hope to share some of my experience with you and leave you with some things to think about before the conference ends.

I do want to emphasize that the presentation you're about to see represents my thoughts and that to the extent that you consider any of them to be abysmally stupid, you shouldn't assign any of that blame to any of my clients. I want to start as well by acknowledging that we're in the traditional territory of the Kwanlin Dün First Nation and – and to say it's always a pleasure to be in Whitehorse and what a wonderful facility we're in.

What I will talk about is integrating traditional knowledge into decision making through co management tribunals. I'm going to run through a quick introduction and give you some examples of the way the law has required this kind of effort on behalf of co management tribunals. Then I want to talk some about the co management tribunals as a vehicle or mechanism for attempting to achieve this integration and to point out some of the strengths and weaknesses that come with choosing administrative tribunals as the the tool that we use to integrate traditional knowledge. Then then I will finish with some thoughts and recommendations.

Steven Ellis, who worked in Lutsel K'e: just after Brenda Parlee left, wrote a very interesting paper in the journal Arctic in 2005 and he

talked about the ways that traditional knowledge can and is used in the overall decision making process. He broke it down into what he called the bottom up or the top down approach. If you've never had the chance to read his article, I commend it to you, but what he's saying is that we need to approach the use of TK both from the top and the bottom. For the last day and a half we've really been talking about what Mr. Ellis calls the bottom up approach, which is building community capacity, getting clear protocols and a clear framework for the development, use and integration of traditional knowledge from the community level and using it both for the benefit of the community and future generations and in the decision making process. That's the bottom up approach, if you will.

The top down approach is what I'm going to talk about for the next 15 minutes or so. The top down approach is really based on legal requirements. Lindsay mentioned earlier that in fact the law seems to have gotten out ahead of our capacity to develop and use TK. Some of these laws have been around for quite a while. I think that much of the good work related to traditional knowledge has taken a bit of time to generate momentum. Notwithstanding those challenges, the law has required the integration of TK to the extent possible in decision making and that's the top down approach. That's saying you've got to do it without actually telling you how to do it.

The Inuvialuit land claim is a precursor to much of this and I was interested to go back and read section 14(5). It doesn't use the words "traditional knowledge", of course, but, nevertheless, the stipulation that's set out in the IFA is quite clear: "The relevant knowledge and experience of both Inuvialuit and the scientific communities should be employed in order to achieve conservation." Bob could correct me on this if I'm wrong, but of course the agreement in principle on the IFA was 1978. I don't know whether there was a change in this particular section between 1978 and 1984, but no matter how you look at it the Inuvialuit were there early in the game. This requirement precedes all of the other requirements that we're going to talk about in the next few minutes.

Now, the more recent land claims have picked up, of course, on this idea that it's important to the co management framework, it's important in order to achieve the outcomes that you want, that traditional knowledge be part of the decision making framework. They tend to use the more recent language.

Starting with the James Bay Agreement and the IFA, we also saw the emergence of co management institutions and I need to spend a moment or two talking about that as well. It's hard to look at land claims nowadays and understand why the IFA looks the way it does or, for example, why the Tlicho Agreement or one of the self government agreements from the Yukon look the way they do. In part that has to do with the fact that chugging along in the background, as land claims were being negotiated--most of them take a decade or more from beginning to end, some more than a decade – the litigation machine was working in the background.

In 1982 Canada decided it would include section 35 in the Constitution Act and the federal policy related to land claims has evolved over that period. At the time the IFA was negotiated, self-government was not on the table. There was no possibility of negotiating an Inuvialuit final agreement and self-government agreement. And so the promise was extracted, of course, that if things changed in terms of federal policy, Inuvialuit could come to that later and they now have.

So you have to think then about what the folks who negotiated the land claim tried to do at the table. The federal model at the time was cede and release, so the Aboriginal rights, titles and interests had to be ceded, in other words given up, and the exchange was – well, it included the rights set out in the land claim agreement itself, it included money, it included land, and it included co management. I want to focus on the co management element for the moment. When you have Aboriginal interests in a million square miles of land and you have a land claim that's going to give you ownership of 25,000 square miles of land, and you are the representatives of a people who use the whole area, it's very likely that you're going to want in the end to have some influence over those areas that you can't own when the land claim is settled. And the way to do that, at least based on the framework that was available at the time under the claims negotiation framework, was co management. And that's why co management is so important.

Having had the privilege to work with and represent co management tribunals in the North over the last 20 years or so, I want to say, based on my own personal experience, that it makes a difference. The difference between--and with no disrespect meant to anybody--but the difference between having a bunch of bureaucrats in a back room making a decision about how we ought to manage this fisheries resource or those marine mammals or that area of land and having a co management tribunal with representatives of the Aboriginal organization that represents those that lived and worked and in many instances were buried there over the years. That makes a big difference in kind of decision making that you get. And that's why I want to say to you that it's important to look at this question about how does co-management integrate traditional knowledge.

Land claims have really driven the legislative agenda across all three of the territories. They've reshaped wildlife, environmental impact assessment, land and water and other laws, and co management plays a central role in the decisions about all of these resources under all of those kinds of laws. When you create a co management tribunal, then you create a situation where that tribunal needs certain kinds of information; lawyers call it evidence. It's essential to the decision makers to get the right kind of information if you want to get the right kinds of decisions out. That's the context in which I will talk about TK.

Let's just do a quick run-through of some of the legislative areas where it's required. We've actually been quite successful in getting the requirements for TK in the legislation, but unfortunately I think we did better at getting the bare requirements in than we have in bringing the framework and process to generate that information and affect those decisions. This conference will be a big help.

These are just some examples to show you how widely TK is required in legislation. In the Northwest Territories in the Species at Risk Act--I make no suggestion that this is comprehensive in any way--traditional knowledge is identified in the preamble. Not very helpful, preambles aren't binding, but for the establishment of the Species at Risk Committee there is a requirement that nominees have traditional knowledge and that they use traditional knowledge in the decision making process.

The Mackenzie Resource Management Act deals with environment impact assessment, and land and water management in the land and water sections. The land and water boards have to use any traditional knowledge and scientific information made available to it, and in section 115(1) which is in the environmental impact assessment section, you see the same language, information that is made available to it. They have a regular auditing requirement every five years in the Mackenzie Valley and traditional knowledge plays a role there as well.

In the Yukon the state of the environment reporting requires the incorporation of traditional knowledge of Yukon First Nations. In the Forest Resources Act of the Yukon the definition of "forest resources management" includes references to traditional knowledge. In the new Nunavut Planning and Assessment Act, the NIRB, Nunavut Impact Review Board, is required in its review of a project to take into account any traditional knowledge or community knowledge provided to it. Again, it has to use it when it comes, but the legislative provisions stop short of saying you have to go out and get it.

The new Canadian Environmental Assessment Act, says take into account community knowledge and Aboriginal traditional knowledge. Again, there's very wide recognition, in the context of these legislative tools that are going to be operative in the North where land claims have been settled, or even elsewhere, where Canada has to identify and deal with the effects of large scale development on Aboriginal peoples and their lands or reserves in the south, traditional knowledge is very important and that recognition is in the statute.

Let's talk about co management tribunals a little bit. While “such TK as may be available” is help, it's not taking us to the goal line. There are some other ways, in the context of co management, that the parties to land claims can try to ensure that traditional knowledge is actually a central part of what the tribunals are going to be dealing with. One

way to do that is to appoint members to the tribunal who are traditional knowledge holders themselves. They are people with a history of hunting, fishing, living on the land. Make sure that they end up on the board or on the council, I guess I should say I use the word "tribunal" as kind of a generic term here. The way to make sure that tribunal gives some time and attention to the specific geographic area that's affected and the activities of people who are using that area is to ensure that those people are on the tribunal.

The other important point about having TK holders or Aboriginal people on co management tribunals is that very often they will speak their own language. If they're going into the communities for hearings and elders or traditional knowledge holders are speaking their language, whatever it may be, the community can understand that presentation directly. They don't have to listen to it through earpieces as it goes through a translator and comes back out in English. The reality is that from a cultural and a linguistic perspective, English doesn't really do justice to the concepts that are being spoken about in the Aboriginal language. You do the best you can with translation, but I would not suggest in any way that it's picking up all the nuances or concepts that are so important culturally in the language directly. So, having a language speaker on the board is also very important.

Just to give you a sense of how broadly co management touches everything from a resource management standpoint, under the IFA, there are the two wildlife management advisory councils, a Fisheries Joint Management Council and the screening and review boards in the Mackenzie Valley. There are renewable resources boards, they're essentially wildlife boards with some involvement in forest and plant management. Then you have impact assessment, land and water, and land use planning. That's the number of boards you're going to have and what they're required to do is going to depend directly on the land claim. These tribunals are not set up out of the goodness of the government's heart, they are required by the land claims. In most instances legislation that determines how they operate from one day to the next has got to be driven by the land claim as well.

I want to come back to the idea about our reach exceeding our grasp. If you looked at the make up of the tribunals--50 percent Aboriginal peoples or nominees of Aboriginal peoples--if you looked at the number of places in the law that it says traditional knowledge has to be involved, you'd think we've made it, we're pretty close to the goal line in all of thus. But Graham White, a U of T political scientist, points out, however, and these are his words, "If we measure how well tribunals actually incorporate TK into their operations and decisions, we see clear limits on the extent of TK's influence." That's why this conference is important. That's why it's important not just to focus on the top down approach, it's very important, coming out of this conference, to focus on that bottom up approach that Steve Ellis talked about. Because in the end if we can't get the information to the tribunals that have to make these important decisions about wildlife and environment, then we're going to get decisions that we don't like and that's not where we want to be.

There are some limits, as I said at the start, in terms of co management. I talked about the co management tribunals being a vehicle. They are a tool. They've had breathtaking success in the way that they've been picked up in all the land claims, even in those places where self-government is in place. I am most familiar with NWT--the Tlicho Agreement still has a renewable resources board, they still have, at least for the moment, a land and water board, and an environmental impact assessment board. So even though you have self government over a smaller area of influence, you may still want to have influence over how the resources and environment are managed in the total area of your traditional occupation. That's why co management continues to exist in the self government context, and that's why those co management tribunals are still important. If you're managing wildlife, it goes without saying that managing wildlife on this 30,000 square mile pinprick on the map is not going to help you if you're talking about caribou that has a range of hundreds of thousands of square miles. So that's why that broader perspective for co management is still important.

With administrative tribunals, co management boards, we're into a branch of the law called administrative law and its creations. This context comes out of English and Canadian law, it's not an Aboriginal context. They're subject to supervision by the courts. They have to be fair, among other things, and the rules applicable to their operation really are going to depend on the nature of the work they're doing. That's an administrative law principle; I'll explain it a bit more in a second.

The more court like these tribunals are, the more formal their processes have to be. What I mean by that is, if you're a wildlife management advisory council, for example, and you work a lot directly with resource managers, wildlife managers, you're doing policy work, and you're not making decisions very often about things that really entrench onto the rights of individuals, then the odds are the requirements for formality in terms of what you're doing are reduced.

Contrast that with the Environmental Impact Review Board, which more often than not is going to recommend to a minister whether or not a project ought to go forward. That project may have come to the board after the expenditure of millions of millions of dollars of exploration funding, legal rights are affected, and there are big public interest issues associated with whether or not the development goes forward. And so what you end up with in an environmental assessment hearing ends up looking much more court like. People sit on different sides of the room, the board sits at the front, witnesses may be sworn, cross examination may happen. That's very court like when you compare that to the operation of a WMAC. And that's all well and good, it fits in the administrative law spectrum. The way that the courts have tended to characterize the level of formality required really depends on the factors that I have mentioned, rights, interests affected, and that sort of thing versus policy or administrative type decisions on the far end of that spectrum.

How you use traditional knowledge or can use traditional knowledge in the context of a co management tribunal, has a lot to do with which end of that spectrum you're on. A formal court like process doesn't generate its own evidence. So the tribunal is there to hear what people tell them about the affects of a development. They're not there to generate their own traditional knowledge evidence. What that means is that at the formal end of this spectrum you're going to need to have a bottom up approach that generates good TK that can be presented to the tribunal in a way that affects and influences the decision that it's going to make. Because, again, like any court like situation, that tribunal is balancing out the pros and cons of the stories, if you will, that are told to it by way of evidence from the participants.

At the formal end of the spectrum you're going to need to have a bottom up approach that generates good TK that can be presented to the tribunal in a way that affects and influences the decision that it's going to make. – John Donihee

I want to give you an example. A company called Dominion Diamonds Ekati Corporation wants to expand the Ekati Mine in the Northwest Territories. As you've heard today, or know anyway, the Bathurst caribou herd is at an all-time low and this mine is right on the migratory route of the Bathurst herd. The mine retained consultants who ran a bunch of models. I confess to being totally bamboozled by models but what I do know is that the modelling

outcomes indicated that the mine would have no impact on caribou. So the communities all came and presented traditional knowledge, the board involved went out and had hearings in three or four small communities as well as a whole day on caribou in their technical sessions. Every single community that presented to the board disagreed categorically with the conclusions drawn by the company about the significance of the impacts of the expansion on caribou, and they brought traditional knowledge holders to the hearings in order to support those positions.

I've seen these sorts of differences many times over the years, but I have never seen one where the situation is as dire as it is with respect to the future of that herd, and where the evidence was as black and white on the two different sides. I can't say much more than that about it. The record isn't even closed in the hearing. But it's a classic situation of a co management tribunal. There are three Aboriginal members on the panel that participated in the hearing. They are Aboriginal language speakers. They were addressed in their own language on numerous occasions in the hearing. And very, very concerned, as everyone is, and to be fair, the company is extremely concerned about what's happening to that caribou herd as well, and everybody is hoping to find a good answer at the end of the hearing.

What I want to point out is how did that tribunal try to shape the evidence that came to it in order that it could make a decision? Well, the MVEIRB, if you ever have been to their website, have a very nice set of TK guidelines. They developed an internal document that identifies how traditional knowledge ought to be organized and presented in the context of their proceedings. They have a public engagement policy which requires that a developer actually bring evidence into the hearing to show that they have engaged directly on all of the major issues with the communities.They won't go forward in the proceeding unless their engagement policy has been satisfied.

The board also used its terms of reference for the development of the environmental impact statement in a way that was very explicit in its directions with regard to how traditional knowledge ought to be presented and organized. They heard, as I mentioned a moment ago, the evidence in front of the board and they are now left with conflicting views about impact based on TK and science.

Well, I've taken more time than I probably should have, but to kind of bring this home, I want to say the Aboriginal parties to land claims have to insist on better outcomes. We talked about bottom up, but when I say Aboriginal parties I'm talking about the IRC, the Game Council, not the tribunals themselves, because the tribunals are institutions of public government. They are, in effect, a creation of statute and funded by the government. The tribunals can do quite a lot on their own, but I think I'd be remiss if I didn't say today that the Aboriginal parties to land claims need to be advocating for more and better use of traditional knowledge.

For the tribunals themselves there's lots of room for additional focus on their own rules, their own process, with a view to answering the question of how we can use this top down approach better, to ensure that TK is better represented in our decisions and that we're more comfortable with where we get to because we know we've done a good job with TK. Tribunals are masters of their own procedures and they can and should do better. No one is opposed to this. That's the overarching message, nobody is opposed to this. In fact, the laws that create the tribunals in the first place say that this ought to happen. So it's really a matter of a more work to connect the dots.

But tribunals can't produce their own evidence, particularly the ones at the formal end of the spectrum. So the Aboriginal groups that are interested in getting good decisions need to be sure that there is good TK presented to them.

So finally, what can we do? We need systematic, rigorous tracking of the collection, use and integration of TK. I have identified the tools that are available. I think we need to test the outcomes. Land claims and legislation have made the use of this information a requirement. And in the co management and legal context, I think it's very possible for us to do a much better job. I'll leave it at that. Thank you.

Bryan Evans

Thank you very much, John. I'd like to now invite our second speaker, David Lee, a wildlife biologist for Nunavut Tunngavik Incorporated.

David Lee, Wildlife Biologist, Nunavut Tunngavik Incorporated

Thank you to Kwanlin Dun First Nation for allowing me to be here, and thank youl WMAC, for the invitation. I wanted to mention that last night Lindsay Staples also received a reward, for those of you that weren't here last evening, because that wasn't mentioned this morning. And also a new name, but I won't tell you that name, you'll have to ask him yourself. The other person I wanted to acknowledge, because I've worked with her so closely, is Marsha Branigan. She also received an award and she's one of the hardest workers that I have had the privilege to work with on multiple issues and files.

As mentioned I am currently a wildlife biologist for Nunavut Tunngavik Incorporated. This is an organization responsible for the implementation of the Nunavut Land Claims Agreement. The mission of NTI is to promote the economic, spiritual and cultural well being of Inuit in Nunavut. I have to admit that I really struggled with what I would present today because I have worked with many of the individuals in this room, and I feel that there is a wealth of knowledge and expertise in this room that certainly surpasses mine. Initially this was going to be a co presentation with my director, Paul Irngaut and unfortunately he wasn't able to make it, but he provided me with some quotations, and hopefully I'll be able to convey to you some of the underlying challenges that exist and provoke some thought when it comes to the themes of the third panel.

What institutional arrangements and prejudices exist that undermine or disadvantage the treatment and use of TK in research and resource management and decision-making? And the first quotation that Paul gave me was, "Inuit knew their knowledge when they were growing up and they weren't afraid." I have to admit when I read that I was very confused. I didn't know what it meant, where the context was, and I had long discussions with Paul. And of course I have experienced it. I've been to public hearings where I've heard Inuit elders cry because they had to hide their game from the RCMP officers because of the Migratory Bird Act. I have been to unbelievably emotional public hearings and tribunals..What Paul wanted me to relay with this quotation is that when non Inuit came into their communities and introduced their knowledge and their knowledge systems, a lot of Inuit just decided not to speak up anymore.

However, what the Nunavut Land Claims Agreement has done, from a Inuit centric perspective, is allowed Inuit to recognize their rights and to start speaking up for themselves. As John mentioned, we have numerous institutions of public government, we have hunters and trappers organizations, we have regional wildlife organizations. These are all embedded in the Nunavut Land Claims Agreement. Inuit have rights and with those rights they can assert their own voice on these management decisions. And that was one of the main messages that Paul wanted me to convey.

Another quotation that I wanted to share with you is from another Inuk. "The mentalities of Inuit and Quallunaat are in conflict with each other all the time. Quallunaat think that our way of doing things is wrong and theirs is right, but we think that their way of doing things is wrong. How can we reconcile this?" The reason I bring this is up is I am also a member of and used to co chair the Polar Bear Technical Committee, which is a federal type of institution. A number of individuals on that committee, especially the Inuit and Inuvialuit, Frank, Larry and others have unbelievably patient with me. The amount of frustration they felt, and you' heard them express it yesterday, about the perspectives that are presented by polar bear biologists has been very difficult for them, especially

because for some of these individuals they were once friends. They worked together. They took these individuals out, they shared all their knowledge with them. And I think part of that emotion is a feeling of betrayal. Obviously that's something that I can't necessarily reconcile, but I do feel some responsibility in being able to communicate some of that frustration to you.

What I feel from my experiences from this and also co chairing an Eastern Arctic Bowhead Recovery Team is that it's very easy to hold polarized views. It's much more difficult and challenging to work in the middle, to work where most of you work, where I work, where we're trying to communicate to each other meaningfully, where it's not just lip service, where we can turn some of our beliefs into action.

This goes back to the questions that this conference raises, which is the institutions that we operate within are often quite constraining, and most of the federal institutions are generally hierarchy-enhancing, meaning they try to absorb and maintain and control power. They serve a certain purpose in our society as well. They are a stabilizing force. But they're generally fairly resistant to change. I won't go into the institutions of public government because I know that there is a lot of positivity and I think that should be retained, but generally my experience with IPGs in Nunavut has been negative. We have tried as an Inuit organization, as John had suggested, to bring Inuit Qaujimajatuqangit, IQ, to the table, but there are incredible challenges within the board to consider different sources of knowledge. Often the weight of evidence lies with that which is most documented. Everyone here has gone through or has received 10 volumes from an environmental impact assessment and just felt overwhelmed by it all. So I'll leave that there.

The other notion that I'll just touch on is in Nunavut the term Inuit Qaujimajatuqangit was constructed, and I'll just quote from the Inuit that were involved in its construction. "When IQ was introduced, we all agreed to stay away from the notion of traditional knowledge as much as possible because of the way it has been interpreted by researchers and other scientists."

Here are two principles of IQ; these principles are in the Nunavut Wildlife Act, in the legislation. The first principle states that, "People who wish to resolve important matters or any differences of interest must treat each other with respect and discuss them in a meaningful way, keeping in mind that just because a person is silent does not necessarily mean he or she agrees." The first time I read that, the light just clicked for me and I thought, this is what IQ can bring, this is what Inuit can bring to the fast pace of everything these organizations are being challenged with. I'm hoping that we'll be able to continue to address these challenges by focusing on youth and the connection of youth to elders. We have tried to hire as many Inuit youth as possible within our organization because we've realized that they are the future for Nunavut. Qujannamiik.

Bryan Evans

Thank you, David. Rather than push on to the next presentation I'd like to invite John to come back up onto the stage and we can entertain some questions or comments to these first two speakers, and then we'll bring the second two speakers after the lunch break..

Unidentified Speaker

Thank you, Brian. Thank you for your presentations. They were real good. I've got a question for John. You made a comment that TK doesn't quite us bring us to the goal. I was hoping you could expand on that a little bit more.

John Donihee

Thank you. I think what I was trying to say was that the requirements that have been set out in law to this point,which require that TK be included in all these decision making processes, still haven't got us to the goal line. I'm not advocating for one form of knowledge over another, I'm advocating that we ought to have a fair representation of knowledge from both perspectives in order to get good decision making. And I just don't think that the bare legal requirements that are set out in statute to this point have entirely gotten that job done.

Unidentified Speaker

A question for John. We use what you're saying, the Mackenzie Valley Act, and how we get that traditional knowledge there is through the Impact Review Board. When a project application comes, we get to review it. So we apply our traditional knowledge when we push it in front of the Impact Review Board's or the Land and Water Board's face and they have to consider it because there's a legal word there and it's "shall". That means they have to do something once they receive it. And that's a big difference. And we also use TK because we used it for BC Hydro. We asked them for money so we go down and do a public presentation on Site C, the new proposed dam. And we took traditional knowledge users and technology, which we're talking about here today, we interviewed a bunch of elders with a video camera. And we used the ones that recognized the water levels pre-Bennett Dam to where they are today. So there are some good tools out there. We're fortunate in the NWT to have the Mackenzie Valley Act helping us. That's how we get our TK pushed forward.

John Donihee

I agree entirely. The opportunity for First Nations in particular that have settled claims to refer things to Environmental Assessment is a very important aspect of that legislation. I would just finish by saying once you get in front of the Environmental Assessment panel, then your example from the Site C is a good one. Certainly I have seen some excellent presentations like that over the last couple of years and hopefully we'll see more of them.

Unidentified Speaker

Thanks to both of you for giving these presentations. I've got a question for John. Multiple times in your presentation you said this phrase that for me seems to fly in the face of common sense, and so I was hoping you could explain its origin in legal tradition, that "tribunals cannot create their own evidence". That just seems a bit ridiculous. The example that I can think of is that in Nunavut I witnessed a coroner's inquest, so it's not at all natural resources related, but there was a lawyer for the coroner and the coroner, for example, was calling witnesses and eliciting information from them. Proponents for environmental impact or proponents for projects and a tribunal, let's say the Nunavut Impact Review Board, their responsibilities aren't the same, right? Their objectives aren't the same. So for me it sort of seems illogical that these tribunals can't initiate things. I was just wondering if you could explain that a little bit. Thank you.

John Donihee

Tthank you very much for that question. I'm sure everyone in the room would be horrified by the thought that law and common sense don't always intersect. What I really meant in saying that tribunals can't create their own evidence is that more often than not when you're having a hearing the purpose of the hearing is for the people who represent the different points of view about what ought to happen. Should a development take place or not? The people who represent the different points of view, some really want to see it happen, some may be horrified by it, there may be other people in between. And the board's role is to hear from everybody and in the best way possible, to try to ensure that they take the best information they can to make a decision. That decision will depend on their mandate, for example, to protect land, water, and wildlife. What I meant was, it's not that they can't try to ensure that the information that they need gets presented to them, it's that they don't generate their own information.

The reason I said it in that way was simply to encourage those of you that are thinking about better ways to document and present traditional knowledge, so that decision makers can make better decisions, to encourage you to exert some effort to get that information in front of these tribunals. That's much easier to do with the WMAC or a policy oriented tribunal, but once you get to that far end of the spectrum the tribunals are only supposed to know what people tell them, and they're only supposed to base their decisions on that information. So that's why I said they can't make their own evidence.

Unidentified Speaker

This actually segues from earlier questions. I wanted to begin by acknowledging the critical and central role that having traditional knowledge holders at the hearings brings to the hearings themselves. My question is, in an ideal context, whose responsibility is it to bring that kind of systematic and rigorous traditional knowledge using the best practices that this conference has been talking about? Whose role or whose responsibility is it to bring that TK to those co management boards or tribunals or public hearings?

John Donihee

I think that it's everybody's responsibility and I'm not trying to be, you know, trite here, but government itself very often will have policies that say traditional knowledge ought to be identified, ought to be used in its own decision making. So if you have a government wildlife department appearing in front of a tribunal my view would be that that government wildlife department, to the extent that they have it available to them or can get it, should use traditional knowledge as well as the models and the other things that the technical scientists and others will do.

The company that is seeking an approval from the tribunal probably has a vested interest in going out and trying to get traditional knowledge as well. In fact, in most instances that I am familiar with, the rules that these tribunals put in place will require that company to get that information and to show where and how they've used it in the design of their project.

A good example of that at Ekati, for example, is the way they're now designing roads so that caribou can cross them without problems. In the early years the roads were quite high on the landscape, they had quite a sub base of some sort, big rocks, and then gravel on the top, right? And the Elders were saying that the caribou were having problems with these big rock piles getting across the road, so now they've designed them with a lower profile and more gravel. Well, there's an example of a company actually adapting the way that it builds a road to try to ensure wildlife protection and that's TK in action. So companies have a vested interest as well.

All of this costs, I'm not naive about any of this. We're now seeing in the Mackenzie Valley, the Tlicho government—they've been very good at it-- have a lands department that works a lot with traditional knowledge and they organize and present TK reports as part of the hearing. They tell the story from the standpoint of the traditional knowledge holders about the impacts of the project. That's why I say it's everybody's job. Where the problems come in, as I've seen in the last while, is that the way it's collected and used is not systematic and rigorous. You can't track backwards from the recommendation that's being made to the traditional knowledge so that you can actually test to see whether that knowledge was used well or appropriately.

David Lee

I'll just add a little bit of my experience with that question. Where I draw direction is from the Nunavut Land Claims Agreement, where there are principles, and I think this one is 5.1.2(e), to promote public participation. The Nunavut Wildlife Management Board has done a fairly good job in trying to at least provide the financial support for delegates to attend the public hearings. Our organization also tries to support delegates. We often cost-share with the Government of Nunavut. Basically if it's in our interests to make sure that knowledge is presented, because the tribunal cannot generate their own information, then we'll do what we can within our financial means to make sure that those people can participate in a meaningful way.

Lindsay Staples

I have a brief comment and then a question for David. With respect to this discussion we're having about finding the sweet spot between the burden on a tribunal to gather information or see it gathered, and the burden on those who have got a vested interest in the outcome to present that information, I think there's an interesting discussion to be had there.

Having said that, some of you know that I did labour away for the Mackenzie Gas Project Joint Review Panel for a number of years and we were really conscious of the appeal decision regarding the Cheviot mine, which basically said, on the matter of cumulative effects, that the panel itself had not been proactive enough in collecting the available information that could have informed their decision. They were instructed by the court to go back, get out there and see that information collected.

Some of us working for the panel took that to heart, and if we were aware of a piece of information or a body of evidence that for whatever reason no one was bringing forward, we didn't hesitate to suggest to an intervener that they file that piece of evidence so that it's on the registry and the board or the panel can read it. It speaks to the make up of these boards and whether they choose to be completely reactive or somewhat proactive, recognizing at the same time you don't want to be prejudicing the outcome of these reviews.

Having said that, David, I had a quick question for you before lunch. I really appreciate your candour in expressing some dismay with respect to the institutions that you've been involved in in different capacities and notwithstanding the great promise. Without getting into the details of the reasons for the dismay, I'm curious if you could give us, from your standpoint and your experience, suggestions for actions that might alleviate your dismay.

David Lee

Thanks for that question, Lindsay. That's something that I struggle with everyday and what I presented to you is my rationalization. What I did not get to express, and there are so many things that I wanted to express, is that I think it's easy to be focused on individual personalities and we've probably all run into them, especially because we often work in a small working environment. When a personality has a lot of power it can play a role in polarization That's the other aspect of this afternoon's panel, it really is about power, who has it, who wants to retain it, who wants to distribute it. Typically Inuit organizations are hierarchy-attenuating, meaning that they're trying to distribute some of that power, but that's not always consistent across the entire organization.

But to get back to your question, Lindsay, unfortunately there isn't a quick response but I am encouraged that there are individuals, some of whom are in this room, that work for DFO and other institutions that are trying to make changes. And if we can support those individuals, locate positions from Ottawa to the Arctic, I think that would go a long way in assisting us with coming to a better understanding and reaching that middle ground you're talking about. Thanks.

Bryan Evans

If there are no more questions, we will break for lunch. We'll see you back here at 1:45.

Welcome back, folks. We have two more speakers before we move back to our final breakout group discussions on this theme of raising the bar for the use of traditional knowledge in resource management and decision-making.

Just before we go to those speakers, I have my orange coat on for a reason. I wanted to acknowledge that today, September 30th, is National Orange Shirt Day. It's the second annual national orange shirt day and it's a day to honour and recognize the residential school survivors. So if you could take a moment today to reflect on the ongoing pain and suffering that the residential school survivors are dealing with and if you have an opportunity to help them on their journey of healing and recovery that I encourage you to take a moment to do that.

With that, I'd like now to invite Hannah Askew, Staff Counsel with West Coat Environmental Law to do a presentation. We'll have one more after that and then we'll have a short Q&A with those two presenters before we move to our breakout. Thank you.

Hannah Askew, West Coast Environmental Law

Good afternoon, everyone. I just wanted to start by thanking the Kwanlin Dun First Nation for having me on their territory. It's my first time here and it's so beautiful. I'm feeling really fortunate to be here. I also wanted to thank Lindsay and the other conference organizers for inviting me to participate in this conference. It's a huge honour to be here in the midst of so much expertise and I've really benefitted from the rich presentations and discussions that we've had so far.

I was asked to talk about the treatment of TK by Canadian Courts and specifically BC courts. As I was preparing the presentation over the last week, the question that was really on my mind was a question articulated yesterday by one woman in particular, but by many people in different ways throughout the day, and it was the frustration that people are feeling about TK having to fit into a Western framework in so many instance, and the tension and challenges that bring. That's a theme through my presentation.

I'm going to divide my brief talk into four parts. I want to begin by situating myself as a non-Indigenous person doing this work. Then I want to talk about Indigenous knowledge in the Canadian courts, specifically in the context of the Tsilhqot'in title case decision that came down from the Supreme Court of Canada last year. Thirdly, I'll be talking in terms of a specific case study, the Tsleil-waututh First Nation's recent and ongoing battle around the proposed expansion of the Kinder Morgan project on their territory, and their participation in the National Energy Board process around that. Finally I want to finish by talking about some extraordinary work that's happening around the revitalization of Indigenous legal orders being led by some Indigenous legal scholars.

Specifically, I'm going to talk about John Borrows, who's an Anishinabe law scholar at the University of Victoria, and Val Napoleon, who's a Cree legal scholar also at the University of Victoria. I also wanted to give a shout-out to my friend, Chris Statnick, who is doing amazing work in this area. He is a young Gwich'in member from Old Crow and I know that there's some Old Crow community members here. Some of you may know him. He's really taking a leadership role in this work. He's a lawyer at Mandell Pinder in Vancouver right now. So that's the order of my presentation.

I want to talk a about my journey into the area of Indigenous law. About eight or nine years ago, I was hired as an instructor at the Native Education College, a First Nations educational institution in Vancouver. My ancestry is Scottish and English. My family's been here for about three generations, spread out between Coast Sailish, Okanagan and Secwepemc Territory. I lived most of my life not having been exposed to a lot of Indigenous knowledge or ways of seeing the world and now that I've had the chance to learn I think my life was really impoverished as a result of not having exposure to that knowledge.

When I was a teacher in that college, I would get sent out to reserves to live for six to eight weeks at a time to teach courses. Really, I was the one who was the student because it was my students technically in my classes who would take me out on the land, who taught me bits about their language, who told me some of their stories. That's where I first started to shift my relationship to the land and to understand my place on it as a settler.

It was that journey that led me to law school. I became a lawyer just over a year ago. I went into law school specifically to learn more about Indigenous law and how to work on the kinds of land issues that my students in the communities were facing. When I was in law school, I was really fortunate to get hired by Val Napoleon, who's the Cree legal scholar I mentioned. She had just gotten a grant through the Truth and Reconciliation Commission to hire a bunch of legal researchers to go into First Nations communities across the country and work with them on revitalizing aspects of their laws.

I was the only non-Indigenous student on that project. Chris Statnick who I mentioned was one of them. Also Estella Charleson, who's a Hesquiaht woman, who is also a leader in this field. You may have seen her picture on the front page of the Vancouver Sun a week or two ago she was called to the bar in BC and she was wearing her traditional Hesquiaht clothing.

Because of that work, I ended up getting periods of training in both Anishinabe and Coast Salish law. I lived in an Anishinabe community for four months and I've been back there many times since, learning about Anishinabe law from a team of Elders and other knowledge holders on that community. I had the opportunity to do some work learning Coast Sailish law with the Nanaimo community and the Chief at the time, Doug White, on Vancouver Island. So that's a bit about my background in learning this area.

I want to say something about the title of my slide there [slide 3]. I said I described myself as a stranger and newcomer into Indigenous Law. That phrase is taken from a speech that former Chief Justice Finch gave a few years ago at a conference on Indigenous Law; he's also a non-Indigenous person. He wrote a really great paper and gave a speech saying that he thinks that all legal professionals have a duty to learn about Indigenous Law. That's something I take seriously,

Doing that work with Val Napoleon was the first time that I began to understand myself as an immigrant to the territories that I was living in. It was an amazing experience to start understanding the Indigenous laws that govern the territories I lived in, and to start changing the way that I conduct myself as a citizen within those territories because of that knowledge.

The Tsilhqot'in decision which I'm sure most of you, if not everyone, in the room is aware of, was a landmark Supreme Court of Canada decision handed down in June 2014. In that decision title was granted for the first time in Canadian history to the Tsilhqot'in nation and a portion of their traditional territory was recognized as theirs.

There were a lot of important rulings in that decision from the Canadian court. Some of it deals with the way that Indigenous knowledge and traditional knowledge is dealt with in the Canadian court system. That decision reaffirmed that in order for First Nations to prove Aboriginal title, there are three criteria of occupation. One is sufficiency of occupation, the second is continuity, where present occupation is relied on, and the third is exclusivity.

In terms of proving those three components, traditional knowledge would play an important role. As many of you are aware, in a prior Supreme Court of Canada decision, the Delgamuukw decision in 1997, the court found that oral history should be weighted equally with other kinds of evidence, written evidence that the court is used to dealing with That was a big change in the way that the court deals with evidence.

In this case, in order to make their successful title claim, the Tsilhqot'in Nation brought in a knowledge keepers who had expert knowledge about the land and how it had been used in the past and the present. At the trial level, Justice Vickers asked the Tsilhqot'in counsel to explain to the court what the Tsilhqot'in's own procedures around reliable evidence were. He asked them how do you decide who is a reputable knowledge keeper, and what are the procedures that the community has for ensuring the integrity of that.

The important thing is that Justice Vickers respected the Tsilhqot'in Nation's own procedures, their own laws around how evidence is kept within their community. He respected that and followed their guidance in his decision. That was a really positive development. It's still a situation where the Tsilhqot'in Nation were making a claim on their own territory where they've been since long before any of the Europeans were. They still had to put years and years of work into going into the Canadian court system to get that acknowledgement from the Canadian system that that was their land. That was still a frustrating aspect, even though such a good and inspiring result.

It's also possible within the Supreme Court of Canada's ruling to prove your title through Indigenous laws--the Supreme Court of Canada has actually said on several occasions that a morally and politically defensible conception of Aboriginal rights and Aboriginal titles must incorporate both a common law and an Indigenous legal point of view. That's quite a radical statement and maybe more so than the court realized when it said that. We have to take into account the common law interpretation and the European interpretation but we also have to take into account the Indigenous interpretation, the Indigenous laws that govern those questions.

The really challenging part is just how the courts are going to do that when so few of the judges and lawyers working in the system have had training in any Indigenous legal orders, let alone the one that they're dealing with in a particular case. One of the big challenges in the Canadian legal system

right now is how to address that? More and more, there's this growing consensus that Indigenous perspectives, Indigenous laws have to be taken into account. How is the court going to be able to hear that, how are non-Indigenous lawyers and judges going to be able to understand the laws and ideas that are presented to them?

Going back to that 1997 Delgamuukw decision, there's an infamous thing that happened during that trial. Some of the house leaders needed to sing a part of their laws to the court because that's how the rights of their property were transferred. In order to properly present it to the court, they needed to be able to sing it.

Justice McEachern, the judge at the trial level in that case, was really resistant to that. He said,, "No, please don't sing." The lawyer said, "It's really important, they need to." So the hereditary leaders sang and Justice McEachern didn't take it into account at all in his final decision. He said, "I have a tin ear. I can't hear these songs. I can't hear this law."

I think a lot of us who are non-Indigenous in the Canadian legal system have, to different degrees, tin ears. We haven't been trained how to listen, how to recognize Indigenous laws and Indigenous evidence. So it's a huge challenge for us in the Canadian legal system.

Some of you may be aware that the Truth and Reconciliation Commission issued a whole bunch of recommendations a while ago and number 27 and 28 of those recommendations give a lot of guidance to the law societies and law schools on how they can start to better educate upcoming and current legal practitioners on how to understand and learn Indigenous law. As all of you in the room know, it's not a quick process. I have been really lucky over the last 8 or 9 years to have a lot of time in communities and a lot of amazing Indigenous teachers who've put a lot of patience and time into teaching me. And even so I still feel like I only know a tiny bit.

Each Indigenous legal order like the Cree Legal Order or the Coast Salish Legal Order, is as complex and difficult to learn as the Canadian legal system. And I just finished that one, and I know it's lot of work. It takes four years of training just to become a junior lawyer. I wanted to cite that as a big challenge the Canadian legal system is grappling with right now.

I wanted to talk briefly about the Tsleil-waututh Nation and their struggle with Kinder Morgan. So the Tsleil-waututh Nation are the people of the Burrard Inlet and right now Kinder Morgan has a proposal to greatly expand tanker traffic through the Inlet and to put in a new terminal. The Tsleil-waututh are opposed to this and they participated last year in the National Energy Board hearings.

Their approach was inspiring. This is on the public record. They said in their opening statement to the National Energy Board that their presence there didn't mean they accepted the jurisdiction of National Energy Board. To the contrary, they understand themselves to be the owners and the guardians of their own territory. But they did want to share the traditional knowledge that they have about their territory, about how to care for it, with the Board. And they did that beautifully in the three hours or so they had allotted to them. They followed their own legal protocols in and they presented both in their language, in Halkomelem, and in English. They translated for the court.

They told stories and explained the meaning of them to the panel and they sang. There was one moment I thought was extraordinary. It wasn't their system they were presenting to and fitting their knowledge into, but they did their best to create a space that reflected their own legal principles, of which respect is a really big one, and inclusion.

At one point one of the knowledge keepers started singing a song that had relevance to how to care for the land. Other people from Tsleil-waututh in the audience knew the song and stood up to sing it, and then others of us who were there to support stood up. The very last ones were the panel and they were kind of looking around, not sure. Then they smiled and stood up too. It was inspiring to see how the Tsleil-waututh, even though they'd been forced to participate in a system that wasn't theirs, were able in a respectful, gentle and powerful way to reclaim that space.

The other thing they did, because they don't recognize the authority of the Board to make that decision for their territory, is conduct their own environmental assessment based on their own laws. They hired scientists to do research, they value scientific knowledge and that was a large part of their assessment. They also consulted with their own TK holders and conducted the process according to their own laws. I think when they spoke about it to the media, they described it as grounded in truth and backed by science. In that case, they fit scientific knowledge into their framework.

I'm pretty much out of time here but I wanted to say that there is amazing work happening around the revitalizing of Indigenous legal traditions. We had a moment of silence to remember the residential school survivors. And as everyone here is aware, there was so much knowledge that was unheard or lost because of the residential schools and other aspects of colonization. Even though lots of parts of different Indigenous legal orders are still strong, there are also parts that have been hurt or in part lost.

There's work being led by the two Indigenous legal scholars I mentioned earlier to revitalize that. Val Napoleon,who's been one of my main mentors and teachers, is an extraordinary woman.She went to law school when she was a grandmother and she says every grandmother should go to law school. She graduated the top of her class as a Director of Indigenous Legal Studies in University of Victoria.

Another person is John Burrows. He wrote a great book called Canada's Indigenous Constitution, that's also talking about Indigenous legal orders taking its place again in the governance of this country. I think I will stop there. Thank you all.

Bryan Evans

Thank you so much, Hannah. I'm sure there will be a lot of questions, which I'd ask you to hold for a moment. We have one more presenter, Anne Kendrick with the Inuit Tapiriit Kanatami, the national organization that represent the Inuit in Canada.

Anne Kendrik, Policy Advisor, Inuit Tapiriit Kanatami

I would like to echo those kind words to the incredible speakers at this conference. I feel very humbled to be invited to speak at this conference, and in a way to be a voice for an initiative of a number of organizations, federal departments and wildlife management boards that has been ongoing for a number of years now. And grateful to have the chance to share some of the work that tremendous network of people has been involved with.

As mentioned I work with the Inuit Tapiriit Kanatami, they are the national Inuit organization governed by the leaders of the four Inuit land claims across Canada. I've felt privileged to be able to work with ITK for the last several years as a policy advisor on environmental and wildlife issues.

What I was asked to present to you was a sense of the kind of collaboration an effort to develop a national protocol for polar bear research management and conservation represents. In many ways this effort – and I have the good fortune to have digested in part some of the wisdom that has been shared by other speakers at this conference – is an effort to engage in those bottom-up and top-down approaches that John Donihee mentioned earlier.

To situate that effort in that context, I'll give you a sense of what this collaboration of groups has been trying to achieve. It's important to remember that at a top-down level, there have been a number of international commitments to include Indigenous peoples and their knowledge in research and conservation efforts.

That includes the United Nations Declaration on the Rights of Indigenous peoples; the Convention on Biological Diversity, a convention that has been in existence for a number of decades now; in the efforts of the World Conservation Union or IUCN, that has also been in existence for a number of decades now; The United Nations Permanent Forum; and the Arctic Council whose Sustainable Development Working Group has recently engaged permanent participants in the Arctic Council in the development of a number of principles for traditional knowledge inclusion. And in recent work, a recently created institution, the Inter-Governmental Platform on Biodiversity and Ecosystem Services, which has incidentally an Indigenous and local knowledge task force, is working on principles and a mechanism for the inclusion of traditional knowledge and local knowledge in its work.

There are a number of groups and individuals within this room who have worked very hard to ensure that sustainable use principles are part of international, national and regional mechanisms and work. Those principles, that inform both top-down and bottom-up approaches, are part of the context of this group's work to develop and ensure Aboriginal traditional knowledge is included within polar bear research management and conservation.

To reiterate what an ambitious undertaking that is, Inuit Nunangat, or the area that covers all four Inuit regions, is vast. Everybody in the room is aware of that, but it always helps to remind ourselves of just how vast that area is and of the diversity of interest, knowledge and communities that exist within that vast geography.

Within that vast geography are a number of established institutions who are involved in polar bear research management and conservation. It's a complex system, a complex number of organizations and individuals who have come together to collaborate on the use of traditional knowledge and the linking of traditional knowledge and science within their work.

In 2009, the Federal Minster of the Environment held a roundtable on the polar bear. It led to a commitment to find ways to better use and link Aboriginal traditional knowledge and science. Two years after that, not to ignore the dialogue and workshops that also came between 2009 and 2011, but in 2011there was a workshop held in Inuvik to follow up on a commitment made at the Ministerial Roundtable in 2009 to further examine those issues of Aboriginal traditional knowledge use and the links between traditional knowledge and science in polar bear research and management.

It was a three-day workshop co-chaired by Environment Canada and ITK. There were 27 delegates who came from across Inuit Nunangat and from territorial and federal government departments to further galvanize the kind of work that was happening informally, and to lay the ground work of a national protocol to formalize that work.It's interesting to see, going back to the results of that workshop, how many of the incredible insights that group brought to that workshop reverberate with many of the ideas of insights that have come together at this conference.

Some of the key outcomes of that Inuvik workshop were to better link Aboriginal traditional knowledge and science, to better utilize Aboriginal traditional knowledge and to strengthen the conduct of Aboriginal Traditional Knowledge research and studies to support polar bear management decision-making. There were some frank discussions of the challenges involved with getting to those goals. Some of those challenges included creating robust and defensible methods to document and validate Aboriginal traditional knowledge. Among some of the follow-up since since 2011, are the incredibly valuable guidelines WMAC has developed. I would encourage you, if you haven't yet had the chance, to have a look at them.

Another challenge was to identify the differences in capacity, both human and financial, to produce and apply Aboriginal traditional knowledge and scientific knowledge to management decisions; to create dialogue on different perspectives on polar bear ecology and scientific research ethics; to address communication and trust needs; and to understand the potential partnerships between Aboriginal traditional knowledge, science and community-based monitoring leading to improved polar bear management.

Some of the key principles identified at that workshop for linking Aboriginal traditional knowledge and science included the principle that shared research planning is key from the get go. That there is a need to create mutual understanding and respect by developing robust and transparent methods and validation processes. Another was the recognition that the design and completion of adequate Aboriginal traditional knowledge study instruments takes time and takes incredible investment on the part of the organization and individuals involved. And another key principle was the recognition that differences in research results and interpretation can lead to meaningful and constructive dialogue when culturally sensitive means of examining knowledge are in place.

I'll just give you a few more examples. But some of the key principles were also, learning and building on evolving Aboriginal traditional knowledge documentation methods; recognize ATK can provide precise spatial & temporal observations if documented well; offer unique historical baseline information; contribute to monitoring and to the design & formulation of research hypotheses and identification of future research priorities; to understand what the drivers are behind ATK documentation programs; to develop cross organizational dialogues on capacity issues; and to develop ATK and scientific approaches focused on complementary scales.

So that group did go on to identify potential national objectives. I realize we're running short of time, so I won't go through those at length other than to give you a quick read. But one of the dynamics important to mention is another layer of work or dynamic that overlays this kind of collaborative effort, particularly in regard to Arctic species. And that's the impact of some of the messaging or the global attention on the Arctic, especially in recent years, and the impact on Inuit and conservation efforts. I created a slide [slide 13]of some of the headlines that give a sense of the messaging that this dynamic is challenged by, that creates an extra burden on the work involved. And I won't read those out but this is some recent, fairly charged messaging that definitely has an influence on the dynamics of this work.

So again, thank you very much. I feel very honoured and privileged to be here to learn from folks here and give a bit of a tribute to the recent publication of the WMAC polar bear traditional knowledge study. Thanks very much.

Bryan Evans

We're going to now move into the last breakout session of the conference, on the theme of raising the bar in the use of TK and resource management in decision-making.

Breakout Group Summary: Traditional Knowledge in Research and Management Decision-Making

What institutional arrangements and prejudices exist that undermine or disadvantage the treatment and use of TK in research and resource-management decision-making?

- There is no obvious way that these two forms of knowledge can be integrated--this is part of an education process, but also an evolution.
- There may not be TK holders at every level in the decision-making hierarchy.
- TK gets less funding.
- Issues on what type of compensation and how much compensation is appropriate for TK providers--must be decided on a case by case basis.
- TK not being seen as credible.
- The main bureaucracy has more of a relationship with decision-makers than with the communities. Need to get more people thinking about TK within governments.
- Reduction in funding over the past few years for community-based or TK projects reflects political changes.
- Seems very confrontational.
- Right now there are no mechanisms to enforce recommendations that have been made in the review process.
- Governance structures--within Western governance, information is sent to managers and they make decisions. But in communities, TK is held within a community and decisions are made via consensus.
- Different priorities, mandates, and timelines.
- Stories and song aren't always accepted by governance structures or management frameworks.
- Having a degree = being done, but learning is a continuous process.
- Bias--need to pay for TK to be done, having middle party to present results to boards and organizations.
- Tribunal process is rigid and doesn't allow for TK to be integrated – bringing these panels to the communities helps, as well as bringing them to schools to involve youth.
- Administrative frameworks like tribunals can constrain the inclusion of TK – the frameworks themselves are largely foreign for Indigenous people and aren't always welcoming to TK holders, can be confrontational.
- At a political level, political will seems to be lacking in terms of inclusion of TK.
- Institutional prejudices based on settler-based ideals (e.g. administrative boundaries can be divisive), don't incorporate or respect Indigenous thinking: "science trumps."
- Understanding the world through Indigenous eyes is a new idea.
- Next generation doesn't get to spend as much time on the land as people used to.
- Loss of language ("use it or lose it").

How could these obstacles be overcome?

- There are basic steps you need to get right throughout the entire processes before you get to decision-making.
- Have more of a culture of TK embedded in institutions that don't have that now.
- Reverse the paradigm--how does science fit into TK rather than vice versa?
- There needs to be a fundamental shift in perspective. In this room we consider them on equal status, and we need to bring that into management frameworks.
- have to think about different decision-making framework. Are these types of knowledge addressing the same question?
- Direct research towards decision-makers needs.
- Education around land claims and history/culture.
- Increase transparency around where decisions are made so people can feed into decision points.
- Better communication within Aboriginal organizations themselves so feedback is brought back to communities.
- Communities need to be involved from the bottom-up--this is the only way things will work
- Mutual respect.
- There are shades of grey--may not be TK or science, but something in between depending on your goal.
- Could have training sessions before tribunals to let TK holders know what it will be like--might help alleviate stress of these processes.
- Need to take time and effort to make frameworks work better and to ensure they are being inclusive as they can--there is some self-evaluation in this.
- Could recommend that there could be TK knowledge holder evaluation process – those involved in processes could have their own evaluation for how they felt their input was included in the process, and then do analysis to compare what processes are working from TK holder perspective and where there are gaps.
- Education for politicians on land claims processes and TK.
- Should take the time to increase the education for the youth on the land claims agreements and their history, the context they were derived from, because youth will be future decision-makers.
- Need to share holistic worldview.
- Ensure right groups have right funding--e.g. funding for TK studies should be in the hands of the communities that they're in.
- Bring decision-makers to special places--this takes a lot of trust.
- Important to teach Canadians about Indigenous values, have those values be part of Canadian culture.
- In Universities there is currently a demand for students wanting the skills to go into communities.
- Allow for opportunities for Aboriginal peoples to bring values into settler-based thinking.
- When we're involved in court cases or negotiate with industry, our organizations get a kick at the can every time.
- Cross-cultural training--we're falling short of this at the community level

What approaches and practices could apply to better integrate science and TK-based knowledge and research in decision-making?

- Several existing documents that highlight multiple inputs.
- Increasing transparency at decision-making points.
- Emphasizing co-design, addressing whole body of questions or just one specific one
- Multi-level approach.
- How does government acknowledge traditional law? How does this work?
- On some of the co-management bodies, there is representation from different levels of government so at that level TK is shared.
- Communication is very important right from the start
- When a decision is made, we need to know what they considered, how did they approach it? If it doesn't involve TK, we should have the ability to say "go back and get that information".
- Use TK as the baseline foundation for projects, use it to guide policy and the review process
- There are some good news stories out there–they are successful when communities take ownership over projects and have been involved from the start
- Need to engage 100%
- Sometimes communities just want a straight answer about what is going on.
- There is a need to communicate science and TK in plain language to bring them to the same level.
- There is powerful legislation in place, but it's only as powerful as those who know it.
- Resource centers are in place that aren't being utilized--when projects are being developed, they should put the search through the resource centers and libraries to look for gaps
- We get to pick and choose how we want to design research because we have that process under our claim.

Where findings from science and TK-based research conflict, how could these differences be addressed by decision-makers and other users of this information, as well as researchers?

- Give public time to digest science and TK, create room and space for public processes (e.g. Berger inquiry).
- Re-orient differences so they're not confrontational – how can you look at it differently so narrative can go further?
- Consensus development rather than labelling it black and white.
- Validation – check for flaws in project design, verify science and TK.
- Recognize appropriate manner in which knowledge is applied – where each kind of knowledge does best.
- Move away from using TK as observations and consider TK and the values it brings to decision-making itself (e.g. moose and salmon conversations that are happening in the Yukon).
- People in the sciences need to be educated about other ways of knowing. There also needs to be an understanding that science has something to offer as well, although there are some challenges in teaching science at the community level.
- Ensure that youth and communities respect and understand science. We won't always agree, but mutual respect is important.

- Take a second look at the data--have someone reinterpret it, maybe there is something that was missed.
- Use best available information.
- Conflicts can blow up, but there are a lot of positives to conflict as well--can promote change, test the strength of the relationship being built.
- Decision-makers need to allow the time and space to resolve the conflicts in the process.
- If decisions are required, make preliminary decisions that can be revisited in the future and that respect the conflict and both sides of the argument.
    - Ensure peer-review and validation on both sides.
- Bring in other community structures to advise (e.g. Elders committees).
- An ideal is to have co-production of information or evidence--even if there is a conflict, there should be people in the room who can work together to find a solution
- Both parties keep open minds in pursuit of knowledge.

Bryan Evans

That concludes the reporting back from our breakout groups. Thank you very much for the outstanding participation of everybody over the last couple of days. It has really been an amazing conference. We're going to move now to closing and I would like to invite Todd Powell to say a few words on behalf of the Yukon Government.

Closing Comments

Todd Powell, Manager, Biodiversity Programs, Fish and Wildlife Branch, Yukon Government; Member, WMAC (NS) Council

Thanks, Brian. On behalf of Yukon, we've been very privileged to be able to hold this conference here in Whitehorse. I'd like to reiterate our thanks to the Kwanlin Dun people for welcoming us to their traditional territory to hold these important conversations. Thank you very much as well to the presenters. I've been kidding Marsha about needing to buy a house in Whitehorse because she spends lots of time here. But recognizing that many people are spending quite a bit of time away from their home, their families and their other work, we genuinely thank them for this time. Their presence here demonstrates the commitment to this topic as well as the dedication that we all feel to what we're working on here today.

I'd also like to thank very specifically Stephanie Muckenheim, Jennifer Smith and Christine Cleghorn. They have been doing some seriously heavy lifting to allow us to have what we have here today. The number of people here and the investment in the conversations speaks volumes to the efforts that they've made for our benefit.

Lindsay Staples

I'd like to take 10 minutes if we could for a conversation with two individuals who gave us a lot to think about yesterday. I'd like to call up Boogie Pokiak and John Ward to the stage.

This is a real conversation – is this a real conversation was the question. Yes, it is. We have covered a lot of ground in the conference, and one of the things that struck me from both Boogie and John's remarks yesterday was the period of great change that we've living in, and the great challenges that traditional knowledge is facing. Boogie yesterday talked about tremendous changes that are going on in the landscape, much of which is driven by climate change. He made the very important point that much of your knowledge comes from animals, and just as the animals are now are struggling to understand what's happening, so you as TK holders are struggling to make sense of what these changes mean.

In John's case, he talked about the challenges of pushing forward, as traditional knowledge holders and keepers, in the face of great institutional challenges and obstacles. So I guess what I'm looking for from you both as we are leaving to go our different ways is any parting words you could leave us with, to think about how we might meet those challenges and how we can better equip ourselves to face them. Boogie, would you like to start?

Boogie Pokiak

Thanks, Lindsay. I'll try to answer in this way. I'd like to make a comment before I give you my answer. You know all this about science and traditional knowledge that we've been through for the last couple of days, it reminds me of an Inuvialuit when the whalers were at Herschel Island and engaging in the whaling industry. An anthropologist by the name of Vilhjalmur Stefansson was starting to do some work. And his mentality was okay, there's going to be a lot of changes once resource development starts within the region. He was going to try to document, before things changed, just what the Inuvialuit knew before the whalers came and fur traders.

His first trip, he learned to speak Inuvialuit and he came to our region looking for Elders and he was going to ask these questions. There were already Elders you know by early 1900s, and they directed him to an Elder. They said, "Go speak to that guy over there, he knows lots. He put a lot of time in his life on the land and with wildlife." Stefansson had the guy had come to him and asked him what he thought of the changes going on around him, the same way we're going to be dealing with climate change, you know? And Stefansson was expecting right away to be hearing a lot of things but the Elder was quiet for a while, looking around and he looked at him and he says to him, "Does your mother know you're here?"

So that's the importance again, our Elders had, the importance of mothers, which was spoken about here. They're the true keepers of sharpening the TK, that you learn in your younger years. And we teach a lot of things as husbands and fathers but the mothers are the ones that really sharpen that knowledge. All that knowledge is really important for the woman to hear because they have more conversations with each other than we as men because most of times we're out on the land, nobody to talk to, you know? The women do a lot of talking and they pass along a lot of knowledge.

It's the same thing here with the climate change that we're dealing with and it's been a big concern of our people for quite some time, since the mid 80s when everything just --all of sudden we're waiting, waiting, waiting, you know? For trapping, we've been waiting, waiting, waiting and when we go out, the environment has changed so much that one year we just couldn't trap. We had to give up by Christmas time because there was so much overflow and back-up of water and whole valleys were getting to be lakes.

Things were changing very rapidly. I've seen with my family going over the land in Husky Lakes there and I know there's no lakes up there and yet when you go driving through with the boat you start seeing a stream coming down into the lake. And it's permafrost melting, just draining right down to the lake. So there's been a lot of changes, like landslides, and we're in all of this together.

This is the first time where scientists and TK holders are on the same footing, in the same environment, dealing with the same questions, the same concerns and I think this is where there's a chance, while you're at that stage between scientists and TK holders trying to understand what's going on, to work together.

I think there should be some serious thought, negotiated between government and the people that are to these conferences, that a young person from each of our community should attend with the delegate that's been appointed to come to the conference and the delegate should be as a mentor to them.

The next generation and like I said, a lot of them we don't have to teach about the land and the wildlife and the environment, they've got to look people in the face that have been taking part, they've got to take a look at the people that are running their lives and running the lives of their people at the harvest. Nothing is as important at this stage as getting them involved. Thank you.

John Ward

I'm a bit at a disadvantage to give really good answers here. But I've been here for two days listening quite intently, and feel honoured that the Inuvialuit people see some value in me being here and sharing our experiences. Over the last couple of days, I've been able to see there's opportunity for the Inuvialuit people to really take a strong lead in addressing this big concern that's global warming. You know your institutions are relatively new and the IFA is relatively new. I look at it as when you build a new home, you don't move in right there. There's things to to be done, you got to clean up, you got to adjust things a little bit, do some fine tuning, get ready to move into the house. I think that's what I'm hearing especially today from the breakout sessions.

They're really given some good pointers as to where those tweaks need to take place and I think it's not a whole lot of work. There's really strong potential and opportunity there. I think the global warming issue is a good one to process through these institutions and systems that are in place and really start taking the lead.

After all, in the North it's just more visible how global warming affects us on the ground. The people in the South, they're too busy having fun, or they're too busy making a living and they depend on watching the news at night to see what's going on. But up North, it's every day you see it, because you live right in it. You're reading the animals, you're reading the birds, you're reading the fish and you know, the environment is giving you a message and you want to convey that message. That's traditional knowledge.

Up North, it's every day you see [global warming] because you live right in it. You're reading the animals, you're reading the birds, you're reading the fish and you know, the environment is giving you a message and you want to convey that message. That's traditional knowledge. – John Ward

I think you do have the mechanisms in place to process that appropriately and put on a red alert through these systems. And I would use other systems, places like CPAC and Ottawa and have good presentations there.

We've utilized the Parliamentary Committees, we went and gave them notice and it's all official government business and if nothing was being done that was evidence for court later and so on. But I think the important thing is you're in such a good position. I just can't see the Inuvialuit people sitting back and saying, "Well, let's see what happens next." I think you're in a position to make that next step and actually drastically change the way people think and approach things.

I think other little things can be done; like continue teaching the youth about the values of your traditional use and approaches to things. And that way, you know you're doing your part. The rest of world needs to kind of come into line with those beliefs and values. TK, the base, the very foundation of is a belief, it's based on the nationhood, what the nation itself believes in and what they value.

What does science do? It has to be a chameleon basically. To come to my territory, they're going to have to work with what we believe in and value and in other places, they've got to do the same. I spent seven years with the Pacific Salmon Commission and listened to some pretty high profile biologists that specialize in coho and salmon species. They've got no answers. But yet our Elders, they talk like they do have the answers. You're already in the Yukon, you have quite a great rapport, those ones that have treaties in the Yukon, just start getting a forum going. I'm sure that NGOs would love to fund that as well. Get other people involved and just start building a tidal wave. And whatever you go with to the parliamentary committees in Ottawa, I think you look at ways to hold them accountable for that information you left with them because you're going to present them with a lot of solutions that come from TK. How's that?

Lindsay Staples

Thanks very much. A round of applause for his contribution. As John was talking, I was thinking back to around 1968 when I was in front of the US Embassy in Toronto protesting the war in Vietnam. There were thousands of us out on the street looking for a major change in US foreign policy in Vietnam. And it didn't exactly take overnight as many people know about that war but someone referred me to a book that has been with me ever since. It was called The Long March Through the Institutions. I have a feeling that's what we're embarked upon here. It takes time. In the last couple of weeks, I found myself also using the phrase, it's a game of inches. Sometimes I think that's very much the case.

We do want to keep moving forward. Our intention with the conference was to treat it as a working conference. I've said many times throughout that we were relying on the working groups in particular and the talent in those working groups to give us a lot to work with and you a lot to work with because we're all in this together. I can't thank you enough for what's come back through these working group reports and the conversations that you had. They're truly substantial.

I want to acknowledge all the presenters. People came from Bozeman, Montana; Arctic Quebec; Nunavut, Vancouver, Ottawa, all over the country. I really can't thank these folks enough for what they've contributed here. I'd like to acknowledge Billy and Danny – these folks did a lot of heavy lifting for us.

Thanks to the facilitators, Mike, Chris, Craig, Todd, Evelyn, Gregor, Ramona and Amy, you guys were on your feet for at least 3 hours out of the conference in your working groups. Again, much of this conference took place in the working groups and I couldn't have been more thrilled with the kind of facilitation that these folks provided.

Much of my gratitude is reserved for those who made trek to get here and participate in the conference. Many of you come a long way and I can't thank you enough for having made the journey. I hope you feel it was worthwhile.

The other thing I'd like to acknowledge, and Todd made this point, is that our families support us in a great way. Some of you have been here for two solid weeks. I can tell you, I haven't been away from home for two solid weeks in a long time without calling it a holiday. Thank you. It's a reflection of your commitment to the work.

Having Bob DeLury, formerly a negotiator with COPE, with us as Chair has been a special honour.. I want to acknowledge Bob's contribution and his willingness to be part of this conference. Thanks to Bryan Evans so much for all of your wonderful work here.

I'd like to acknowledge the contributions of the North Slope council members, you guys have been great. We really appreciate the support you've given us. It's kind of an unusual thing. I'd like to thank my daughter Keri for the break-out group summaries, Miche Genest for doing the notes from the proceedings, and Meagan Perry for producing a podcast of the proceedings. Thanks to the audio tech, the Kwanlin Dun Cultural Centre staff and High Country Catering, for providing the facility and the services.

We owe a great debt to the people of Kwanlin Dun and the Ta'an Kwach'an who've shared their traditional territory with us over the last two days. My thank you to the citizens and the governments of those First Nations.

Three individuals who stand out in making all of this happen are Stephanie Muckenhaim who works for Yukon Government and handled all the logistical work associated with the conference, the facilities. I gave her a special note of thanks last night for the oyster bar. Finally, Christine Cleghorn and Jennifer Smith put the program together. I can't speak enough of what a joy it is for me to work with these two guys.

To close off the conference, I'm going to invite to the stage, Frank Pokiak, Chair of the Game Council, who assisted us in opening the conference.

Frank Pokiak

Thanks Lindsay. I'd like to thank the Kwanlin Dun for being in their territory. I think this conference's been very, very good. I'd like to thank the organizers, Lindsay and the presenters and the TK group that sat up here. Dougie, I don't know if Dougie's here but you know he's quite an intelligent young fellah. I also would like to thank all the youth, that partook in all of the discussions. You know Lenny Payton, I worked with him in Hendrickson Island and Kate Snow. They're turning out to be great people. Thank you very much.

Lindsay Staples

Bob, if you'd like to start making your way to the stage. As I said during the opening moments of the conference, we've been blessed with some really distinguished honorary chair people of the conference over the years. For many people, having Bob has been truly a thrill, particularly people from the ISR whom Bob represented one way or another for a good 20 years. It's been a chance to, among other things, have your photo taken with a celebrity and a person whom a lot of people only know by name. I was really struck by the number of people who were seeking photos and autographs over the last couple of days. Please give a round of recognition and applause to Bob.

Bob DeLury

Thank you very much. I want to reiterate how grateful I am to be here. It is an honour. It has been a long, long time since I've seen this much knowledge and experience and dedication. It's really exciting. Now I told you when I came here I didn't know anything about what you were dealing with because my life was a lot simpler. There was only one knowledge, and that was the Inuvialuit knowledge. You've really taught me a lot,

If you will indulge a little bit, I'd love to thank everyone. I think everyone's been thanked but this is a very personal thing for me. I haven't seen Inuvialuit in 20 years and most of them look older. Some of their parents that I worked with weren't here, but I found children, grandchildren and they knew me. I didn't know them but I knew their parents.

Lindsay was talking about the pictures being taken--I don't know how many wanted to get a picture of me so they could send to their parents. That was very personally rewarding. Now one of the things I took out of this personally is just how proud and honoured I am to have worked with the Inuvialuit. They were special people in my view and it was reinforced over and over and over again. And when you haven't been with old friends for 20 years, there's a lot to catch up on. I had an opportunity to do that and I guess from a personal basis, the other thing that was very difficult for me was I'm not used to being honoured and I'm not used to being praised and I get very emotional about it. I guess one of the reasons I'm not is, when you spend 20 to 25 years beating your head against the bureaucracies, you get used to taking punishment but nothing else.

That was something that was very important for me--they honoured me and they appreciated me. I thought for the Inuvialuit I'd give them a little story that I don't think I've told them before about our federal negotiator, Simon Reisman. If you're not Inuvialuit, you may not know who he is, but he was a retired Deputy Minister of Finance, the most powerful bureaucrat in Ottawa for about 20 years.

He was known as a real rough, tough negotiator, smart. Before our agreement he negotiated the Auto Pact which was considered absolutely impossible to do. He was given our file because it was considered

impossible to do and after he did that, he went on to do Free Trade. He was highly, highly respected but he had a reputation of being a real mean, tough negotiator.

We talked about it for a while and we said, "Well, we asked for a good negotiator because we're getting absolutely nowhere with Indian Affairs. So I think we can work with this man." So we did, and he spent the first—oh, four to five months really beating me up. And he started to come around. He said, "Boy, these people are really nice. Inuvialuit, they're good people." He went and visited them and everything we said to him made sense. We weren't timid, we could take all the punishment he could give us. We'd get the odd shot in once in a while.

Anyway, he said, "Bob, I don't know what's going on here." He said, "When I took this job, I was briefed by Indian Affairs and they spent all their time talking about you." I said, "Oh, I don't know what they've got to say." "Well," he said "You're the Anti-Christ." Well, I didn't have to look up Anti-Christ, I got the idea. But interestingly, this went right after a briefing by the Deputy Minister, Paul Tellier. So I made quite an impression down there.

I'm very proud of the legacy, to be a friend and a champion for the Inuvialuit, and I'm very proud to be an Anti-Christ for Indian Affairs. We all live by our values, and my dad was really the value-setter in our family and he was my best friend and my mentor. And he was Irish. He said, "Look, your job in life is two things. One is you work for the betterment of humanity and two, you have to leave the world a better place than when you found it." And after yesterday, after last night, I'm good to go.

The other really personal emotional thing that I knew was going to come up is when you get the old team together, what's left of them, and you start talking about the good old days and the funny things that happened in negotiations, you can't help missing all the people that aren't here that were so important in those negotiations. That was hard on all of us because we had so many memories of these good people. The first real loss I think we had was Bertram Pokiak, he was a real tower of strength in this land claims process. And then we loss Andy Carpenter. We lost Nelson Greene, we lost Sam Raddy and we lost many of the other really, really solid people in the communities that we relied so heavily upon. I was just thinking about this last night. All of the teams felt they owed these people something. And you know what they owed them? It was to employ their wisdom, their knowledge, their determination with the values of humility, honesty, humanity and dignity and I think we've all tried to live that.

Well, before I start crying here, I did want to give a special thanks to Lindsay. I think he's done just a superlative job. He got a new name for those of you weren't there last night, Inuvialuit name, which is "The Anchor." He has been the anchor for a long, long time. I think he's one of the bulldogs, eh? He's called the anchor because he keeps things on the straight and narrow, keeps the boat moving in the right direction. When it drifts off course, he brings it back, all with patience and good humour. And I'd really like to thank Lindsay. I've honoured his friendship for over 40 years and he's a very fine man. I'd like to thank him for giving us all a fantastic opportunity here.

Thank you very much. So I guess with the power and authority invested in me, I would like to declare this conference a success. Thank you very much.

Appendix 1

Theme and Program Sessions

2015 Yukon North Slope Conference

Best Practices in the Use of Aboriginal Traditional Knowledge in Resource Management

September 29 – 30, 2015, Whitehorse, Yukon

Theme and Program Sessions

Conference Theme

The 2015 Conference Theme is "Best Practices in the Use of Aboriginal Traditional Knowledge in Resource Management". Modern day land claim agreements between state governments and aboriginal peoples and more recent case law have paid special attention to the role of indigenous traditional knowledge in environmental management and wildlife research. After several decades of discussions, research studies, policy papers and workshops and conferences, traditional knowledge (or "TK") has arrived in mainstream conversations about the state of wildlife and the environment – at least in most regions of the circumpolar arctic.

TK has been represented as "aboriginal traditional knowledge (or "ATK")," "traditional ecological knowledge (or "TEK"), "local ecological knowledge" (or LEK") and "Inuit Qaujimajatuqangit" (or "IQ") - to name but a few. Generally, these forms consider TK as a practical craft knowledge acquired through direct experience and by watching, listening to, travelling, and harvesting with experienced people on the land, ice, and water. TK and TK studies provide information about the surrounding environment, with or without reference to the role of humans in using and shaping that environment, associated cultural views and practices and the structure of knowledge and how it is accumulated, transmitted, and used by individuals and within a group.

The 2015 Yukon North Slope Conference is focused on assessing the current state of the art in the communication, collection, documentation and application of TK. These are important subjects and should be matters of central concern to anyone involved in wildlife management and research today. Although there are strong legal cases for the use of traditional knowledge in modern-day environmental management, strong institutional prejudices remain and assigning full weight to TK as body of knowledge and evidence has been challenging both in Canada and internationally.

At the same time, as greater weight is attached to the consideration of TK in wildlife decisions about resource development, environmental assessment and wildlife

population assessments, so TK has come under greater scrutiny. As with science-based research, the applied methods and the resulting research findings are examined with an increasingly critical eye. This is particularly true for high profile species, like polar bears, caribou, and whales, where international attention is focused on the management of these species in Canada and assessments about the health of these and other species.

In many cases, where the findings of science-based and TK-based research are at odds, there is little guidance for how conflicting multiple lines of evidence could and should be resolved, and better inform the decisions that result if they can't be.

The methods and technologies for documenting and communicating TK have never before provided such a wealth of possibilities for understanding TK and what it has to offer a wide range of audiences from young people to other TK holders to natural resource researchers, managers and decision-makers.

This conference is devoted to addressing the state of practice, means and methods for improvement and the "gold" standard to which TK researchers and users should strive in the collection, documentation, communication and application of TK. It's aim is to advance the practice of incorporating traditional knowledge into resource management decisions through an examination of challenges and case studies that look specifically at best practices and lessons learned in the course of undertaking traditional knowledge studies and advancing study results into decision making.

The results of this discussion should benefit individuals and organizations directly involved in the application of TK - knowledge-holders, "practitioners," and decision-makers from the Yukon North Slope to the Torngat of Labrador.

Conference Format

The conference is organized in a "workshop" format to produce tangible guidance and direction for the development of protocols and standards that will contribute to defining best practices in the treatment of TK. The conference format is generally informal to promote dialogue. Several small panels of veteran observers will share their views to stimulate discussions in small break-out groups. The views from these small group discussions will be discussed in the larger conference plenary session and contribute to recommended best practices and standards.

The results of this conference depend heavily on the contributions of the participants. The approach is practical, collaborative and results-oriented. A conference report will be circulated to all participants and interested parties for their reference and use. We believe that all regions can learn from one another and benefit from informed and frank discussion.

Conference Discussion Sessions

Session 1: Mobilizing Knowledge

This session discusses aboriginal traditional knowledge and how we can learn from this knowledge and ways of knowing. It examines similarities and differences between TK and scientific knowledge and where they can complement one another and where they diverge. It explores how TK can contribute to our understanding of wildlife, ecology and climate and how TK is being communicated and transmitted in new and innovative ways.

Session 2: Best Practices and Documenting Traditional Knowledge

As traditional knowledge studies come under increasing scrutiny, the methods employed and the resulting research findings will be tested for their rigor, reliability and associated credibility. This session will explore best practices in the documentation and treatment and of traditional knowledge.

Session 3: Management Decision-making: Resolving Differences and Addressing Disagreements Between TK and Science

This session will address the institutional prejudices that continue to exist in the science-based research community and with management authorities towards TK-based knowledge and research findings. It will discuss approaches to overcoming these obstacles. It will also consider approaches for resource management decision-makers to consider in weighing multiple lines of evidence from disparate sources (such as TK and science), especially when their management implications disagree.

Appendix 2

Speaker Biographies

Robert. T. DeLury, 2015 Yukon North Slope Conference Chair

Robert holds a Bsc. of Zoology from UBC. He did further research in evolution at the Institute of Animal Resource Ecology, UBC. He formed a consulting company designing research and statistical analysis in environmental and bio-medical sciences. He has conducted fisheries research with the Province of Ontario and the Fisheries Research Board in Nanaimo. He also conducted Environmental Impact Assessments in the Province of BC Peace River Hydro Development and, between 1970 and 1974, the

Federal Fisheries McKenzie Valley Pipeline Assessment for Northern Yukon. In 1975 he was Resource Biologist with COPE, supported by CARC, and from 1977 to 1994 played a major role in negotiating and implementing the Inuvialuit Final Agreement for the Inuvialuit people.

Bryan Evans, Chief Facilitator

Bryan has a Masters in Natural Resource Management from Simon Fraser University and a Bachelor of Commerce in Finance (Honours) from UBC. Bryan has over 20 years consulting experience on a wide variety of projects for the provincial and federal governments, First Nations, non-profit groups, and the private sector. His primary interest is community-based land use planning and natural resource management. Bryan is known as a proficient planner, researcher, writer and facilitator.

Panel One: Mobilizing Knowledge

Danny C Gordon

Danny Gordon is currently a director of the Aklavik Hunters and Trappers Committee. A resident of Aklavik, Danny is an active hunter and trapper and is highly involved in his community. Originally from Barter Island, Alaska, he made the long journey to the Mackenzie Delta by foot and dog team as a young boy. Danny worked for the government in Aklavik for many years, but always made time to spend on the land. The partnership between his people and the Yukon government has made it possible for his people to be an important part of the management of Herschel. He has been part of WMAC NS for a really long time.

James Pokiak

James Pokiak is from Tuktuyaktuk NWT. He is married with three children and seven grandchildren. He is a very active harvester--80 percent of his family's food comes from the land and ocean. He is very active outdoors year round and is a TLK holder in many areas.

Douglas Esagok

Douglas Joe Esagok is a well-known young Inuvialuit hunter from Inuvik. He is a member of the Inuvialuit Game Council. He has travelled widely in the western Arctic, both for traditional activities, and as an advisor and assistant to scientists. He has been a hunter for over twenty years, and has travelled on the North Slope and the Beaufort Sea in all seasons. He is an experienced Canadian Ranger, and regularly wins awards as regional champion marksman. He has visited Herschel Island over six times with scientific parties. In September he published a paper in the journal Arctic, in collaboration with Steve Kokelj, one of the scientists with whom he has worked frequently.

Billy Archie

Billy Archie was born and raised in the Beaufort Delta Region of the Northwest Territories, Canada. Billy grew up and was educated in the traditional ways of his Inuvialuit parents, grandparent and relatives. Whether it was harvesting whales, fishing and living off the land and sea with his ancestors or observing and participating in family hunting and trapping during the winter months, Billy was heavily influenced by family values and embraced stewardship values for the environment, wildlife and community. This respect for the land, animals and nature impacted Billy and made him keenly aware of the importance of traditional knowledge. Billy's formal education also impressed on him the importance of a formal education and the need to balance the contemporary education with his ancestors' traditional knowledge education values.

As Aklavik moved from a traditional economy, where hunting and trapping were the founding pillars of the community, towards a mixed economy increasingly influenced by wage employment, Billy observed his community change. As Inuvialuit and Gwich'in citizens moved off the land and into communities like Aklavik to engage in education, health care, housing and wage employment, Billy saw firsthand the rapid cultural changes impacting his people. Employment opportunities in the oil and gas exploration industry and other areas provided him with an appreciation for the potential of co-existence and good sustainable practices in non-renewable resource development. Billy has also been heavily involved in initiating and supporting various important human health, environmental, cultural and educational research projects for his community and the Western Arctic.

Randall (Boogie) Pokiak

Boogie Pokiak lives in Tuktoyaktuk NWT. He was a member of the Inuvialuit negotiating team for the Inuvialuit Final Agreement, a past president of the Inuvialuit Development Corporation, a member of the Inuvialuit Game Council and a director of the Tuk Hunters and Trappers Committee. For many years he has been a sports hunting guide and an active harvester. He has extensive traditional and local knowledge of the land, sea and ice and the wildlife that depend upon them. He has a deep attachment to the land and sea and has shared this experience as a speaker at a number of North Slope Conferences.

Brenda Parlee

Brenda Parlee is Associate Professor and Canada Research Chair in the Faculty of Agricultural, Life and Environmental Sciences at the University of Alberta. Over the last twenty-two years, she has collaborated with many different organizations and communities in the Northwest Territories and elsewhere on a diverse number of

research projects dealing with themes of social and environmental sustainability. An important aim of these research activities has been to recognize and respect the multi-generational knowledge held by northern Indigenous peoples. A major focus of community-based research and collaboration in the Northwest Territories has been around the impacts and responses of northern communities to environmental changes such as barren ground population change, natural resource development and climate change. She is currently leading a project focused on the importance of local and traditional knowledge to the governance of the Mackenzie River Basin.

Panel 2: Best Practices and Documenting Traditional Knowledge

Dominique Henri

Dominique Henri is a Wildlife Science and Traditional Knowledge Specialist at Environment Canada. She conducts collaborative ecological research combining traditional and scientific knowledge, and provides policy and program advice on the use of Aboriginal knowledge in wildlife research and management. Dominique holds a DPhil (PhD) in Geography and the Environment from Oxford University. She has taught graduate classes and published on the application of Aboriginal knowledge and science to wildlife conservation. She has also worked as a consultant, conducting environmental and social impact assessments for mining, energy and transportation projects involving northern Aboriginal communities.

Jennifer Parrott

Jennifer Parrott has been working as Spatial Project Coordinator for the Inuvialuit Regional Corporation (IRC) since 2015. She is responsible for supporting all geospatial initiatives developed by Inuvialuit Final Agreement natural resource management agencies (Inuvialuit Game Council, Joint Secretariat co-management bodies, and the Inuvialuit Land Administration). Her duties include project management and implementation, GIS capacity building, user support, strategic planning and the development of best practices. Currently, Jennifer is working on the Inuvialuit Atlas, Community-Based Monitoring Program Harvest Study, Community Conservation Plan Revision, as well as many other collaborative initiatives lead by external agencies. Additionally, she teaches in the 'Ontario Learn' program and owns Geonamics Consulting. Prior to working with the IRC, Jennifer was a GIS Analyst with Fisheries & Oceans Canada in Central & Arctic Region and was responsible for developing the Beaufort Sea Online Platform. She is currently living in Inuvik, NT.

Nathan Cardinal

Nathan Cardinal is a Cree Metis person from northern Alberta, and is currently the resource conservation manager at Gulf Islands National Park Reserve in southwestern BC where he has worked for the past 9 years. Prior to that he worked in a variety of positions working with Aboriginal people in Canada on various resource management-related projects, including fisheries management on the Fraser River and gathering traditional knowledge on wolverines in northern Canada. In his current work with Parks Canada, he works on various projects from species at risk assessment, ecological restoration, invasive species management, shellfish management, archaeology, and prescribed fires. Many of these projects involve working in close collaboration and partnership with the local Coast Salish people who call the Gulf Islands home. He currently lives on Salt Spring Island with hiswife, three-year-old son and seven-month-old daughter.

Kimberly Heinemeyer

Kimberly Heinemeyer received her Ph.D. in Environmental Studies with a focus in Conservation Biology from the University of California, Santa Cruz in 2003. As a lead conservation scientist for Round River, she has led or collaborated on multiple analyses of regional landscape patterns in ecological values to support informed land management including in British Columbia and Namibia. Through these efforts, she has developed an interest and focus on sustaining aboriginal cultural values and land uses which are often tightly linked to ecological values across landscapes. Kim has also led or collaborated on a diversity of applied research and monitoring efforts on rare, declining or vulnerable species including on fisher, American marten, wolverine, grizzly bears, northern woodland caribou and Stone's sheep as well as African ungulates in Namibia and Botswana. Kim has worked for Round River since 1998.

John Ward

John served as Spokesperson for the Taku River Tlingit First Nation throughout their 20 plus years of effort to achieve a meaningful management of their own lands. Through his private consulting firm, today he provides land planning and organizational assistance to First Nations in British Columbia and the Yukon Territory.

Panel 3- Traditional Knowledge in Research and Management Decision Making

David Lee

David Lee is a wildlife biologist for Nunavut Tunngavik Incorporated (NTI). NTI coordinates and manages Inuit responsibilities set out in the Nunavut Land Claims Agreement. David is currently a member of the Federal-Provincial-Territorial Polar Bear Technical Committee (PBTC). The PBTC considers both traditional knowledge and western science to inform the status of polar bear subpopulations in Canada. David has also served as co-chair of the Eastern Arctic Bowhead recovery team, a forum in which both science and Inuit knowledge of bowhead whales was shared and discussed. David currently serves as the co-chair of the Marine Mammals Subcommittee of the Committee on the Status of Endangered Wildlife in Canada.

John Donihee

John Donihee has over 30 years of northern environmental management and legal experience. His clients include governments, aboriginal organizations and public institutions in the Northwest Territories and Nunavut. He has worked extensively on wildlife matters including the drafting of new wildlife legislation in both NWT and Nunavut. He works regularly with environmental assessment and regulatory co-managers who make their decisions on the basis of both scientific and traditional knowledge. John is currently counsel with Williams & Shier Environmental Lawyers LLP.

Hannah Askew

Hannah Askew is a part of West Coast Environmental Law's Aboriginal and Natural Resources law team. Prior to joining West Coast, Hannah produced legal syntheses on Coast Salish and Annishinabek law for the University of Victoria's Indigenous Law Research Unit and the Accessing Justice and Reconciliation Project on "Revitalizing Indigenous Laws." She holds a JD from Osgoode Hall Law School and articled with Crown Law Office--Criminal where she participated in the Implementation Committee to address the recommendations of the Honourable Frank Iacobucci in his report on First Nations Representation on Ontario Juries.

Hannah holds two masters degrees in history and anthropology and prior to law school taught in the Aboriginal Justice Studies program at the Native Education College in Vancouver. She also worked at the Centre for Minority Rights Development in Nairobi, Kenya where she assisted in drafting policy recommendations to facilitate the devolution of land-use governance authority back to Indigenous communities, as required by Kenya's 2010 Constitution.

Anne Kendrik

Anne Kendrick is a senior policy advisor for the Inuit Tapiriit Kanatami, the national representational organization for Canada's 60 000 Inuit. Anne works on species at risk, sustainable use and climate change issues and has served on the policy and planning subcommittee of the National Aboriginal Council on Species at Risk and as the coordinator of the National Inuit Climate Change Committee. Before entering into national policy work Anne worked for more than 15 years on a variety of local research projects in Nunavut and the Northwest Territories and has an interdisciplinary background in community-based resource management.

Appendix Three

Delegate List

Miranda Allison
Program Advisor, Water Resources Branch
Environment, Government of Yukon

Ron D. Antoine
Traditional Knowledge Coordinator
Government of Northwest Territories

Billy Archie
Aklavik Community Corporation

Dean Arey
President, Aklavik Hunters and Trappers Committee

Hannah Askew
Lawyer, West Coast Enviornmental Law

Steve Baryluk
Resource Management Coordinator
Inuvialuit Game Council

Jody Beaumont
Traditional Knowledge Specialist
Trondek Hwech'in

Richard Binder
Coordinator, Environmental Impact Review Board

Leta Blackjack
Deputy Chief
Little Salmon Carmacks First Nation

Connie Blakeston
ISR Program Coordinator
Fisheries and Oceans

Marsha Branigan
Manager, Wildlife Inuvik
Environment & Natural Resources

Kaitlin Breton-Honeyman
Wildlife Biologist
Nunavik Marine Region Wildlife

Rosa Brown
Lands Manager
Vuntut Gwitch'in Government

Nathan Cardinal
Resource Conservation
Parks Canada

Larry Carpenter
Chair, Wildlife Management Advisory Council

Darrell Christie
Environmental Assessment
Environmental Impact Screening Committee

Karin Clark
Wildlife Biologist
Government of Northwest Territories

Douglas Clark
Associate Professor & Centerrial Research Chair
University of Saskatchewan

Christine Cleghorn
Wildlife Management Advisory Council

Catherine Cockney
Environmental Impact Review Board

Rudy Cockney
Director, Environmental Impact Screening Committee

Maurice Colpron
Manager, Regional Bedrock Geology
Yukon Geological Survey

Dorothy Cooley
Professional Services
Teslin Tlingit Council

Danica Crystal
Wildlife Management Biologist
Nunavut Wildlife Management Board

Tracy Davison
Regional Biologist
Environment Natural Resources

John Day Sr.
Director
Inuvik Hunters and Trappers

Maggie de Haan
Manager, Priorities
Canadian Coast Guard

Mary DeLury
President, Coastline Consulting Inc.

Robert DeLury

Janice Dickson
Dan Keyl Renewable Resources Council

Nicole Dion
Aquatic Quality Scientist
Government of Northwest Territories

Cameron Eckert
Conservation Biologist
Yukon Parks

Issiac Elanik
Director, Inuvialuit Game Council

Marie-Anik Elie
Hearing Manager
Environmental Impact Review Board

Brett Elkin
Manager, Wildlife Research
Government of Northwest Territories

Douglas Esagok
Director, Inuvialuit Game Council

Bryan Evans
Principal, Dovetail Consulting Group

Tip Evans
Director, Heritage Teslin Tlingit Council

Michael Fabijan
Vice President, Kavik-Stantec

Jane Fitzgerald
Environmental Monitoring Specialist
Government of Northwest Territories

Suzanne Flumerfelt
Co-Chair, Dan Keyi Renewable Resources

Katie Fraser
Assessment Officer
YESAB

Gregor Gilbert
Resource Management Coordinator
Makivik Corporation

Gina Gill
Language and Culture Coordinator
Selkirk First Nation

Vic Gillman
Chair, Fisheries Joint Management Committee

Hillary Gladish
Assessment Officer, YESAB

Richard R. Gordon
Senior Park Ranger
Environment, Government of Yukon

Danny Gordon
Wildlife Management Advisory Council North Slope

Charles Gruben
Director, Inuvialuit Game Council

Richard Gruben
Director, Tuktoyaktuk Hunters and Trappers Committee

Michelle Gruben
Wildlife Management Advisory Council

Linda Gully
Office Manager
Joint Secretariat, Government of Northwest Territories

Peter Hale
Polar Bear Specialist
Environment Canada

Joseph Haluksit
Inuvialuit Game Council

Kimberly Heinemeyer
Lead Scientist
Roundriver Conservation Studies

Dominique Henri
Wildlife Science
Environment Canada

Tim Heron
Steering Committee
NWT Cumulative Impact

Deanna Higginson
Socio-Economic
Hemmera

Lolita Hughes
A/Operations Manager
Yukon Parks

Elliot Hulet
Board Member
Round River Conservation Studies

Christopher Hunter
Member for Government of Canada
Wildlife Management Advisory Council North Slope

Kristin Hynes
Fisheries Resource Specialist
Fisheries Joint Management Committee

Joe Illasiak Jr.
Director, Paulatuk Hunters and Trappers Committee

Gerald Inglangasuk
Director, Fisheries Joint Management Committee

Albert James
Co-Chair, Carcross Tagish Renewable Resources Council

Frank James
Land Manager, Carcross Tagish First Nation

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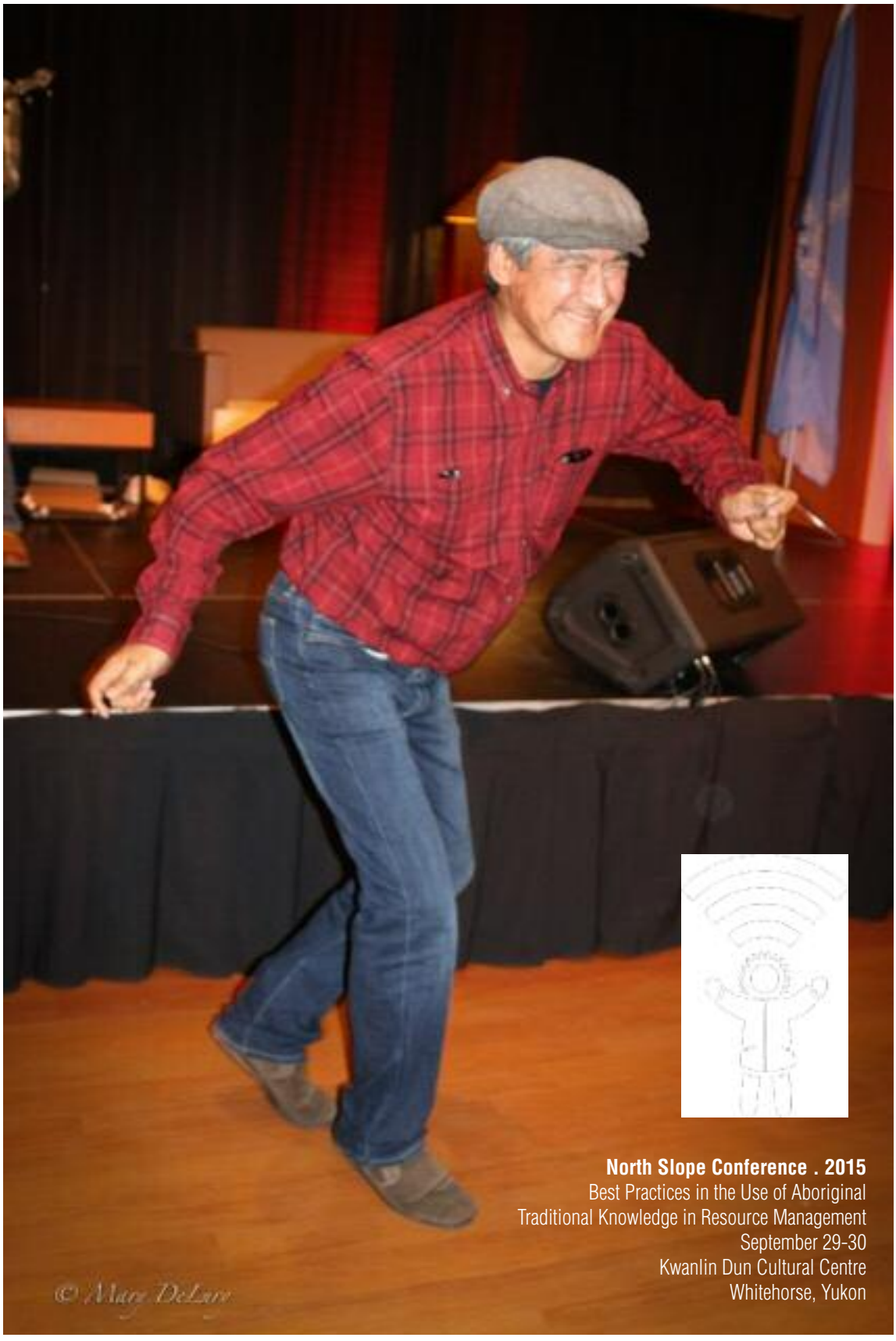

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