

2014 Symposium on Science and Traditional Knowledge in the Eeyou Marine Region (EMR)

March 25-27, 2014

“The islands and the sea saved our lives and took our lives – this is our home”. (Robert Kanatewat)

Purpose

The Eeyou Marine Region Wildlife Board (EMRWB), the Grand Council of the Crees (Eeyou Istchee) and ArcticNet organized a symposium designed to present an overview of traditional and scientific knowledge on the marine and coastal ecosystems of James Bay and eastern Hudson Bay. In addition was the objective to identify fields of research that could be developed to fill the gaps in understanding of the marine and coastal environment needed to ensure the sustainable development and use of resources.

In 2010 the *Eeyou Marine Region Land Claims Agreement (EMRLCA)* was concluded. This Agreement established the EMRWB as the main instrument of wildlife management in the EMR and the main regulator of access to wildlife. In order to fulfill these functions, the EMRWB requires an effective role in research, including identification of research requirements and deficiencies. The Symposium was an important first step in giving definition and direction to this role.

The organizers set out three basic questions for consideration by participants:

- What elements of the marine environment dynamics and resources should be the subject of a research program over the next five years?
- What means should be implemented to achieve this program?
- Which organizations and partners should be invited to participate in this program?

Organization

The Symposium gathered an impressive group of participants representing the range of expertise required for a comprehensive discussion. This included Cree and Inuit active in research and wildlife management, academic and government scientists, policy

specialists, members of the planning and impact review boards created by the EMRLCA and representatives from partner Aboriginal organizations.

The Symposium was organized around a set of sessions dealing with specific themes:

- Session 1: Welcome and Objectives
- Session 2: People, History and Traditional Knowledge
- Session 3: Development and Cooperation in the EMR
- Session 4: Climate, Ice and Oceanography
- Session 5: The Marine Ecosystem
- Session 6: Habitat and Wildlife
- Session 7: New Research Opportunities in the EMR
- Panel Discussion

Summary of Sessions

Session 1 set the stage for the Symposium. Government representatives provided details on the modern day land claims agreements and the EMRLCA in particular. The Cree and Inuit speakers put a 'human face' on the challenges ahead. All spoke of the need to cooperate, share information and be respectful and agreed that the objective was to find a balance between economic development, environmental protection and preserving the way of life of Cree and Inuit.

Session 2 focused on the EMR as the homeland of the Cree and Inuit. Presentations were made on the archeological record, the history of research in the region, working with traditional knowledge and the history of contact and its repercussions. **Brian Craik** (EMRIRB/GCCQ) discussed the history of colonialism in the region and what in more recent times he calls "industrial colonialism". He concluded that the hunting, fishing and trapping way of life will continue for the Cree and Inuit but it will be reshaped and redefined. **David Denton** (CNG) provided an overview of the archeological record as evidence of a dynamic the coastal region and the changing configuration of the coastline. He describes a lovely example of what is now an inland area with traces of the "People of the Sea". **Alan Penn** (EMRPC/CNG) reviewed the history of research in the region noting that very little work was done prior to the arrival of Hydro-Québec and plans for the La Grande Complex. He cautioned that most of the subsequent research was dominated by the context created from hydro development. **Isaac Masty** (CTA) provided insights into how traditional knowledge is acquired through the oral tradition of storytelling and how it is transmitted through day to day actions, guided by values embedded in Cree culture. **Roger Gallant** (COSEWIC) described how traditional knowledge is used in the assessment work done by COSEWIC. **Lucassie**

Arraagutainaq (EMRIRB) gave an overview of the decades of work done in the Sanikiluaq region working with traditional knowledge to better understand the ecological processes at play in the region, particularly with regards to the La Grande Complex and climate change.

Session 3 began with a presentation by **Robin McGinley** (COTA) discussing the tourism potential of the EMR and plans for a coastal route project and work toward developing James Bay and southern Hudson Bay as a sustainable tourism destination. **Pauline Gerrard** (IISD) provided information on the Hudson Bay Inland Sea Initiative, a stakeholder driven effort to coordinate management and create a governance framework for the region. **Graeme Morin** (JBACE) discussed the committee's efforts to engage local communities and access environmental and social data. He reviewed the results of a March 2014 workshop on the subject held in Mistissini. **Alain Tremblay** (Hydro-Québec) discussed a project undertaken by Hydro-Québec on saltwater intrusion in Rupert Bay and efforts to include traditional knowledge.

Session 4 was organized to provide information for current research on climate, ice and oceanography. **Ross Brown** (Environment Canada) provided information on the Integrated Regional Impact Study (IRIS), a collaborative research program to develop models for climate change scenarios across northern Canada. The EMR is considered a 'hot spot' and is projected to have the largest winter warming scenario. **Nadia Saganash** (CNG) and **Thierry Rodon** (Université Laval) reported on their community-based work to record the Cree perspective on climate change and to identify locally observed climatic impacts in Eeyou Istchee. They combined Cree and Western perspectives to examine specific issues of importance to the Cree, particularly the potential impact of climate change on food security. **David Barber** (University of Manitoba) presented the work being done by the Centre for Earth Observation Science in James Bay and Hudson Bay. The focus is on temperature trends, changes in freshwater regimes and sea ice formation with the long term objective of assembling climate models to assist in anticipating changes in ice conditions. **Zou Zou Kuzyk** (University of Manitoba) presented research findings on changes in freshwater sources and distribution in James Bay and Hudson Bay and the effects on ice formation.

Session 5 began with a presentation by **Jean-Éric Tremblay** (Université Laval) on the pelagic marine ecosystem of Hudson Bay and James Bay. Using a variety of assessment and sampling methods, it was determined that the southeast sector of Hudson Bay and the eastern half of James Bay are important areas of primary production. **Monica Mulrennan and Kanwal Dewan** (Concordia University) reviewed their work on subsistence fishing in Wemindji. Working with local Cree, the importance of subsistence fishing was documented. Recommendations for further research to better understand and protect subsistence fishing were presented. Information was also provided on the Wemindji Coastal Fisheries Program which was established

through the 1986 James Bay Mercury Agreement. **Marc Dunn** (Niskamoon Corporation) reported on a research program conducted in collaboration with Hydro-Québec on the ecology of Rupert Bay anadromous cisco and whitefish. Cree traditional knowledge was collected and Cree participated in designing the monitoring programs as part of remediation efforts following the Rupert River diversion. **Colin Scott** (McGill University) reviewed the work leading to the development of the proposed Tawich Marine Protected Area and the productive partnership developed between Cree and university researchers and the variety options available through federal and provincial legislation to provide permanent protection to this area.

Session 6 focused on wildlife and habitat and began with a presentation by **Jessica Labreque** (CNG) on Cree concerns regarding wildlife and management in the context of the new regimes created by the EMRLCA. The Canadian Wildlife Service funded a program to better understand the perspectives of Cree in the coastal communities regarding wildlife, environment and governance. A report sets out a list of research priorities. **Roderick Pacano, George Lameboy and Louie Kanatewat** (Cree Nation of Chisasibi) discussed the relationships between the significant decline in eelgrass beds along the James Bay coast and changes in migratory habits of Canada geese and brant as observed by the Cree. They made a call for research to better understand the causes and then to develop conditions for restoration. **Murray Humphries** (McGill University) discussed the ecology and flora and fauna of the coastal region. He argued that scientific research in the region has been short-lived and fragmented, while Cree and Inuit knowledge is comprehensive, integrated and nuanced. He presented the results of an extensive literature review using an assessment framework based Mode 2: New Production of Knowledge which led to a conclusion that community-led and community partnered research in the natural sciences leads to better results. **Mike Hammill** (Fisheries and Oceans Canada) made a presentation on the ecology and dynamics of marine mammals in the region. He described data collection programs with Inuit communities, aerial surveys and results and the collection of Inuit traditional knowledge on various marine species.

Session 7 discussed new research opportunities in the EMR. **Katherine Scott** (McGill University) traced the history of research in the EMR beginning with the early explorers followed by research to support resource development. The story of James Bay research offers insights into the evolving relationships between Crees and researchers. **Martin Fortier** (ArcticNet) described the operations of the Canadian research icebreaker *CCGS Amundsen* across the Canadian Arctic and plans to extend its work in James Bay. **Kim Juniper** (Oceans Network Canada) provided an overview of the impressive array of technology currently being deployed to gather oceanographic data. He also discussed a community-based initiative in Cambridge Bay and plans to set up a similar program in Rupert's Bay. **Joel Heath** (Arctic Eider Society) described a network

established to conduct community-based research in southeast Hudson Bay and James Bay to investigate cumulative impacts of environmental change and hydroelectric development. Focused on the Belcher Islands region, this work provides an example of a successful collaboration between traditional and scientific knowledge. This approach is now being expanded to other communities in the region to gather and share information.

All presentations and a complete list of participants are available at <http://www.arcticnetmeetings.ca/EMRS2014/>

Panel Discussion

Moderator: Lorraine Brooke

Panelists: Brian Craik, Colin Scot, Martin Fortier, Rodney Pachanos

Introduction by the Moderator

Meetings such as these produce a range of ideas and information. The challenge is to focus thinking on a product from the discussion. In this case the anticipated product is to provide direction, concrete recommendations and priorities for future research in the EMR. Embedded in this task is to give clear guidance for how a research agenda can be developed to fully involve Cree and Inuit knowledge and science, and to shape productive and respectful partnerships. The 'will' is there but the 'how' continues to be a challenge

A list of recommendations emerged from the discussions. These include:

- Determine collectively what we need to know
- Develop partnerships based on respect, trust and collaboration
- More work in James Bay is required
- Research networks, including Cree and Inuit should be encouraged. There are good examples that can be built upon.
- Cannot confine work to the EMR. Need to look at the entire ecoregion.
- Develop a TEK-based EIA process
- Better baseline data is needed
- Understanding ice and water regimes is a priority for Cree and Inuit because of the effect on harvesting
- Work on climate change and develop adaptation strategies
- More work is needed on cumulative effects
- Put effort into monitoring harvest levels and harvest patterns

Brian Craik discussed the sharp divisions that the desire to protect the environment and resources and the need for economic development are creating at the community level. He argued that traditional knowledge and science can assist. Both have in common the search for truth. The goal of traditional knowledge is to sustain people and a way of life but it is lost if not transmitted. Science is more formal and has an academic focus or is driven by political decisions. It is then safeguarded in books and written materials. He continued that industrial colonialism still exists and that Cree still are 'not in the driver's seat in their own land'.

Colin Scot discussed how Cree and Inuit and scientists share a profound curiosity about truth in the world in which we all dwell. Going forward it will be important to consider work as a 'shared project'. The relationship to date has been characterized by a lack of a 'sustained social relationship'. Permanent conversations are required. Both groups share the construct of hypothesis formation moving to analysis. Cree and Inuit need to be engaged in identifying issues that are important to them and science can assist in finding answers. Turbidity is an example. Science can provide methods for modeling and monitoring in which Cree and Inuit can participate.

Martin Fortier stated that this Symposium will greatly assist to establish a research program in the region. There are limited resources so these need to be wisely allocated. He explained how ArcticNet can assist to leverage funding and how important it is to create networks and build on existing work and successes.

Rodney Pachanos set out three questions:

1. Is it time for a different perspective regarding research?
2. Who speaks for the NMR?
3. How will this be carried out?

He offered his own replies as a stimulus for discussion:

1. In the past the focus was 'research for research sake'. There is now a need to shift the focus and engage Cree and Inuit in problem identification.
2. The EMR speaks for itself. We need to listen to the people who live there and accept the way they understand things.
3. Everyone has to have access. Cree and Inuit have been reluctant to provide their knowledge because in the past it has been turned around and used against them. We need to respect knowledge and ownership – intellectual property rights. Work needs to be driven by what the environment and people need, not by money. We need databases from which to monitor change. "Change is the one constant". Relationships must be built on respect. Scientists must be willing to learn and view problems from a different perspective than how they have been

trained. “Open your minds”. Governments must accept the roles of the new Institutions of Public Government created by the EMRLCA.

Questions/Comments from Participants

- Aboriginal peoples are nervous speaking in front of scientists. Our knowledge has often been ridiculed. It is very frustrating to see all of the work that has been done in Hudson Bay but very little in James Bay. Hunters have been noticing significant changes over the past 30 years. Hydro-Québec said it was our imagination when we spoke of the freshwater plume. They always had convenient answers to dismiss our concerns. Through our stories and legends we have thousands of years of research. That is what traditional knowledge is all about. It has time depth and it is valid. I am suspicious of research sponsored by industry. It can't be impartial. We need to build the research agenda together and focus on things that are important to the people living in the region, such as the disappearance of eel grass.
- Who is responsible for the clean-up of fuel drums at Cape Jones dating back to the DEW line? Are there also chemicals involved? This needs to be cleaned up. It affects our food chain. Traditional knowledge is also embedded in our language. Language preserves who we are.
- The EMR is an artificial line vis à vis the ecology of the region. Work cannot be confined to that area. We need to look at the entire ecosystem of James Bay and southern Hudson Bay. Activities in other parts of the Bays will affect the eastern portion. For example, mining in the Mushkekowk Council Region along the western coast of James Bay as well as plans for dams and forestry along the Moose River.
- Everything you do in this region affects Sanikilujuaq. There has been a tremendous amount of work done using traditional knowledge in our region. We have our own database and we are willing to share. Traditional knowledge has been downplayed by proponents in environmental impact assessment. “They have to learn”.
- We can't just rely on traditional knowledge. Change is coming too fast – like a tsunami. We need to be part of a broader network.

Rodney Pachanos made some closing remarks and began by stating that we need a meaningful research program for the people and environment of the EMR. He set out some challenges and opportunities.

- How to engage the youth. They will have to take on the responsibility to protect our homelands.
- How do we get western science and traditional knowledge to work together for the same purpose and the same end?
- How do we build on the messages from this meeting?
- The EMR not just a jurisdiction – it is part of an ecological region. How do we deal with this?
- We need to accept that scientists and Aboriginal peoples should work together and adapt our methods and thinking accordingly.
- We need to do an exhaustive inventory of what already exists to help the IPGs determine what further research is required.
- We need to create networks to do research by building on what already exists, along with users of the land.
- We need to think and act holistically, not in silos as is the tendency with science.
- What is the purpose of monitoring – to watch something disappear (or) intervene?
- The only constant is change.
- Knowledge is one thing – understanding is another. In our world animals are food and this shapes our thinking and our understanding.

He concluded by quoting Chief Sitting Bull: *“Put our minds together and see what future we can create for our children”* and Chief Joseph: *“What you do to the earth you do to yourself”*.

Orientations for Future Research

<p>Session 2: People, History & Traditional Knowledge</p>	<ul style="list-style-type: none"> • Monitoring for cumulative impacts from hydro-electric development, climate change and contaminants. • Establish a network of community-based research and monitoring. • Put regulatory entities into place to maximize positive economic, social and environmental effects of development. • Critical assessment of what can be learned from the hydro-driven research experience and what can be applied to future development projects. • Pursue other ecological issues, e.g., further offshore and in the complex coastal environment of James Bay.
<p>Session 3: Development and Cooperation in the EMR</p>	<ul style="list-style-type: none"> • Establish a joint vision and coordinated management and governance system. • Support information sharing, communications, and collaboration between all stakeholders including jurisdictions, communities and management bodies around the Bay. • Enable policy action for the sustainable development of Hudson Bay through a collaborative approach across the region. • Inventory sites along the coast with tourism potential. • Research to determine sustainability of wildlife views opportunities for tourism. • Develop a knowledge web. • Develop a systematize portal for planning research.
<p>Session 4: Climate, Ice & Oceanography</p>	<ul style="list-style-type: none"> • Monitoring at community and regional scales to enhance understanding of ocean-sea-ice-atmosphere interactions. • Inventory of climate data sources in the Eeyou region to determine data availability and suitability to document observed changes in key variables and climate indicators. • Available climate information for the Eeyou region is fragmentary – work needed to pull this together. • Work with users to define relevant climate

	<p>indicators and integrate local knowledge into results from western science climate monitoring.</p> <ul style="list-style-type: none"> • A synthesis of existing studies would be useful to take stock of work done to date on climate change. • Winter conditions, especially in James Bay and southeast Hudson Bay need to be assessed. • Create new collaborations and partnerships, pooling of resources and a systems approach. • Regional-scale, coherent rather than fragmented, assessment of impacts would provide the foundation for future planning and decision making.
<p>Session 5: The Marine Ecosystem</p>	<ul style="list-style-type: none"> • Revisit past cisco/whitefish studies. • A comprehensive assessment of the contribution of traditional fisheries. • Evaluation of options for supporting traditional fisheries. • Documentation of knowledge and skills associated with fishing. • Use of TEK to assess the impact of climate change on local fishing. • Stock assessment and monitoring. • Orchestrate tools, options and relationships for EMR protection in the context of Eeyou Istchee-wide land and sea use planning, monitoring, management and rehabilitation. • Possible framework for future [palegic marine ecosystem] projects: modeling/in-situ observing/remote sensing.
<p>Session 6: Habitat & Wildlife</p>	<ul style="list-style-type: none"> • More community involvement in research. • Research to understand why eel grass has declined, why its recovery is problematic and then develop a restoration plan. • More dialogue with communities on species at risk. • Restore or create waterfowl feeding grounds. • Monitor the impacts of an increasing eagle population on waterfowl. • Research to better understand changing ice conditions.
<p>Session 7: New Research Opportunities</p>	<ul style="list-style-type: none"> • Community-based monitoring programs to assess cumulative impacts of environmental change.

In the EMR	<ul style="list-style-type: none"> • Address inter-jurisdictional challenges for establishing collaborations to assess cumulative effects. • Develop education and outreach within research programs for TEK holders and youth.
Panel Discussion	<ul style="list-style-type: none"> • Cree and Inuit need to be engaged in identifying issues that are important to them and science can assist in finding answers. • Create networks and build on existing work and successes. • Shift the focus and engage Cree and Inuit in problem identification. • Develop databases from which to monitor change. • Scientists must be willing to learn and view problems from a different perspective than how they have been trained. • Adaptive management and applying the precautionary principle are the place to start. • Build the research agenda together [Cree/Inuit and scientists] and focus on things that are important to the people living in the region, such as the disappearance of eel grass. • Address the entire ecosystem of James Bay and southern Hudson Bay. • Produce an exhaustive inventory of what already exists to help the IPGs determine what further research is required.