

Bringing Together Indigenous & Western Ways of Coastal & Ocean Observing



CIOOS ATLANTIC

Regional Association of the
Canadian Integrated Ocean Observing System

Guest speakers generously shared their knowledge during this Discussion Series; with permission, their words have been documented in this report and the speakers have been cited as the sources of the information throughout the report. Please do not alter the knowledge that has been shared and documented in this report, and always acknowledge the people from where the knowledge originated.

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Pjila'si Welcome

“In keeping with my teachings from many wonderful people in my community, I want to welcome you to our unceded Mi'kmaq territory, and share with you some of the knowledge that I have been lucky to be part of. As Sarah Denny of Eskasoni taught me, we always sing before a gathering in celebration and to welcome all Nations, and today I'm going to do that in honour of not only Sarah Denny but all those that kept our traditions alive and our culture, and our songs and our language during a time that it was against the law here in Canada.

The drum represents the heartbeat of Mother Earth and also the heartbeat of our mother. And like Mother Earth, when we hear the heartbeat we are listening to a language that we once all knew when we were inside the womb of our mother, inside of those sacred waters just like Mother Earth's womb, the ocean. And this is what we all heard and if we go back to remembering that time inside of our mother's womb, we can all understand one another because as I've been always taught – speak from your heart and you're going to speak the truth. Because that's the language of your mother and the language of the heart.”

Catherine Martin

Director of Indigenous Community Engagement

Dalhousie University

Opening Prayer

“Creator, I come before you in a humble way, I thank you for this day. I give thanks for the four directions and the four winds. I give thanks for allowing me one more day to walk upon Mother Earth. Creator, I give greetings to Mother Earth. I ask Her to continue to sustain me and all other life. I tell Her one day my body will return to Her. Creator, I give thanks and give greetings to Father Sky and give great thanks for the warmth Father Sun brings as He travels from the East to the West. I give thanks for the light that allows me to see the great beauty of Mother Earth. Creator, I give thanks and ask you to watch over my relatives, the four legged. I give thanks for what they have given us. Creator, I give thanks for the birds, the winged ones. I give thanks for the beauty and songs that fill the air. I honour the trees and the herbs, plants and herbs, that hold so much knowledge of life in guidance. I give thanks for all they have taught us and still today, they continue to teach. Creator, for the water, the giver of life, I give great thanks indeed. I give thanks for all that is on, above and upon Mother Earth. Now Creator, my most humble prayer is for the two legged, the human beings. They are out of balance and need to be returned to the old ways, to find love, harmony, peace and spiritual awakening. I ask you Creator, to reach down and touch our hearts so that we can all still lead a good life before the pathway of this life is no more. Creator, accept my love, continue to walk with me upon this pathway and help me in my work. For it is the work of every human being to help and to love each other. We give great thanks indeed.”

Elder Albert Marshall

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INTRODUCTION

The Canadian Integrated Ocean Observing System ([CIOOS](#))³ is a national, online data platform that supports coastal and ocean stewardship, economic innovation, and marine safety and navigation by providing access to high quality coastal and ocean information and data. Three Regional Associations located in the [Pacific](#)⁴, the [Gulf of St. Lawrence](#)⁵, and the [Atlantic](#)⁶ are working together to increase discovery and access to coastal and ocean data and information.

The Atlantic Regional Association of the Canadian Integrated Ocean Observing System (CIOOS Atlantic) is committed to engaging meaningfully and respectfully with Indigenous peoples and organizations in the development of this system.

In January and February 2021, CIOOS Atlantic hosted a three-part Discussion Series to learn where our goals may align with Indigenous organizations and how we could collaborate to advance our shared ocean observing goals.

This Series brought together individuals who are stewards of Indigenous data and work with coastal and ocean observations to strengthen existing networks, create new connections, and discuss opportunities for collaboratively developing approaches to exchange coastal and ocean data and information.

As part of our commitment to educating ourselves, CIOOS Atlantic has produced a Literature Review, summary and presentation that look at case studies where Indigenous knowledge was digitized, what factors enabled successful outcomes, and the inherent risks and limitations involved in the digitization of Indigenous knowledge. These documents can be accessed [here](#).⁷

This Discussion Series and the Literature Review were made possible with the generous support of the Ocean Frontier Institute and Canada's Ocean Supercluster.



Wela'lin Woliwon Thank You

Thank you to the guest speakers who shared their time and knowledge with us so generously. Thank you to the people who attended the Discussion Series to listen, ask questions and learn.

Orientation to this Document

For each of the three Discussions in this series a summary is provided along with quotes from the guest speakers. For Discussions 2 and 3, these quotes are grouped by key themes that CIOOS Atlantic staff identified when reviewing the video recordings in the process of preparing this report. To preserve the integrity of what was shared by guest speakers, the quotes are true to the words of the speakers and are not edited. The full video recordings can be found [here](#).⁸

GREETINGS

"I would like to bring greetings from the East. Since we are the ones who have been here the longest. But unfortunately, the task that was given to us was taken away from us. We were assigned to be the gatekeepers, but unfortunately, that responsibility was taken away from us. And we lost control. Because everyone that came to our territory had to agree to live by the principles how our people were able to sustain themselves for thousands and thousands and thousands of years. And eventually those were actually referred to as Angugamwe'l, the Treaties. And as these people were arriving, first of all they were welcomed, and then they were made to agree that if they are going to live here, then they have to abide by some of the principles, principles like Netukulimk, in which as they would be going about sustaining themselves they will not in any shape or form compromise the ecological integrity of the area. And that they would always pledge, that they would always use the gifts and knowledges that the Creator has given all of us to be used for the ones that cannot defend themselves in human form."

Elder Albert Marshall

"Good Morning from Pauquachin First Nation, Vancouver Island"

David Sema

"Greetings from Nogojiwanong (Peterborough), Ontario!"

MaryJane Proulx

"Hello from Kijipuktuk"

Oliver Handspiker

"Kia ora, Greetings from Whakatohea nation in Aotearoa, New Zealand"

Maui Hudson

"Happy to be here from NunatuKavut, Labrador"

Stanley Oliver

Elders Gathering: Observing Coasts and Oceans

DISCUSSION

January 19, 2021: 1:00 - 3:00 p.m. AST

Mi'kmaq Elder Albert Marshall and Maliseet Elder Edward Perley shared ways of observing the coasts and oceans.

Recording available here:

[CIOOS Atlantic YouTube Channel](#)⁹

Catherine Martin

Director of Indigenous Community Engagement, Dalhousie University

Mi'kmaq Elder Albert Marshall

Maliseet Elder Edward Perley

SUMMARY

Elder Albert Marshall and Elder Edward Perley have shared their point of view on what is required to enter into collaborative work with Indigenous people. They have graciously spoken their truth from their hearts about what is important to them. They have shared about their world view and their Indigenous knowledge. We have heard about respect, collaboration, and partnership and what it takes to achieve that type of relationship. They have spoken about how Nature has rights and humans have responsibilities to care for the earth and use its resources sustainably, in ways that do not compromise the abilities of future generations. That humans need to obey the law of nature, and allow human laws to fall second to the importance of the health of the earth which supports the existence of all living creatures. We have also been called into action to shift human practices towards supporting the integrity of all of earth's ecosystems and away from harm.

We learned about the concept of Two-Eyed Seeing which requires respect and a true partnership in collaboration. And that a prerequisite to engaging in a Two-Eyed Seeing collaboration with Indigenous people is that we must first act for the earth, and show that we stand with Indigenous people and the deep value that they hold for Mother Earth. We must take a great action and shift from operating based on human law and live by the law of nature. We do this by taking concrete

action in working towards renewed health and sustainability of the earth and its ecosystems. And that if we are not serious about this action, we cannot be serious about truly participating in collaboration.

To maintain the integrity of what was shared, quotes have been transcribed and presented here from the larger body of knowledge that Elder Albert Marshall, Elder Edward Perley and Catherine Martin spoke to during the Discussion.

QUOTES

"There is a great need for some kind of a transformative change. And within that transformative change, I believe the road map forward has to be one of which we, the Aboriginal peoples, we can bring forth the principles and the ideologies that were left for us by our grandparents, by our ancestors. And of course, we do welcome other perspectives, other knowledge bases from people that are here because we agree that the environment is a very complex system and it will require just as much complex issues or solutions to be able to address some of those transformative changes that need to occur. And I, as an Aboriginal person, when I invoke my Two-Eyed Seeing, first of all I see everything from my Aboriginal lens, I see everything and I hear everything what our ancestors have left for

us, and I do everything in my power to uphold those principles. At the same time, I have this inherent responsibility not only to make sure that my personal actions will not, and should not, compromise the ecology integrity of the area, and that the future generations will have the same opportunity as I have, and hopefully better. And again, when I invoke my Two-Eyed Seeing I cannot help but think of the work Netukulimk. Netukulimk of course is a word in our language, gives you a privilege to extract and to use the gifts from the creator, but you do not have the rights to compromise or to transform your actions into negative in which it will compromise the ecological integrity of the area[...]. If we totally agree that there is a great need of some kind of change, then the question that we have to ask is how willing will your agencies, your departments be to reflect on exactly how we got here and what harm we have caused to the very source of life we have, in this case, the oceans. I don't know how many here would agree with me that this is our last hope, in my humble opinion, of preserving and creating opportunity for humanity to keep on existing."

"Nature has rights, and we humans have responsibilities. And most importantly, hopefully we will hear, and to listen, and admit that the laws of nature have to supersede the laws of man."

Elder Albert Marshall

"That is the power of this Indigenous knowledge, it's not for people to take it, not to take Albert's words and use it in your papers, it's to work it, to live it."

Catherine Martin

"For years we heard from the non-Indigenous lens, about how they see the world or how they see the ocean, or how they see whatever existed. And we've always tried to share our lens, when given the opportunity, to share our views and our perspectives on how we see things, and how we think about things. To me that is respect, when you use that Two-Eyed Seeing approach from Albert Marshall.

I've always believed that if people work closely together and help one another out, I know that we would get further ahead in life. And to also try to protect what we have left in this home that we live in, for future generations. Governments, politicians, always mention the elderly, always mention the children. Us as people, if we don't stand up together and stop what's going on today we won't have to worry about our children tomorrow. Because there will be nothing left for them. At a young age we're taught when we take another life for sustenance, for food, like if we go fishing and we catch a trout or a bass, we offer that tobacco and give thanks for that certain species giving up its life for us to sustain

ours. When we go cut a tree down, kill a moose, we always offer that tobacco and give thanks. For a hundred years or so, our ceremonies and culture was taken away from us, we weren't able to practice our ceremonies or to share our culture because the government made a law that Indians couldn't practice their rituals, their ceremonies, their culture. It wasn't until 1976 that Indigenous people had the right to practice what they referred to as a religion. We don't consider spirituality as a religion. Spirituality is a way of life. And we've never forgotten that. Even though the government did take that away from us for some time. Our language, language is very important because language has a different meaning, our language is descriptive. Trying to translate something, a Maliseet word or a Mi'kmaq word into English is difficult. I'm very fortunate to still be able to have my language, to be able to speak my language, even though they tried to take that way from us."

Elder Edward Perley

Digitizing Indigenous Knowledge: Rights and Data Sharing

February 02, 2021: 1:00 - 3:00 p.m AST

Key Themes

Guest speakers discussed the legal, ethical and value considerations that surround digitizing and sharing Indigenous knowledge and data. Guest speakers shared their own experiences with initiatives that have digitized Indigenous knowledge and the approaches used to maintain Indigenous ownership and control.

Training	Protocol and Intellectual
Environmental	Property Rights
Stewardship	Use of Data is Purposeful
Oral Culture & Technology	Indigenous Knowledge
History and Context	Systems
Indigenous Led	Tools

Recording available here:

[CIOOS Atlantic YouTube Channel](#)¹⁰

Stephanie Russo Carroll, Dr.P.H., M.P.H.

Assistant Professor of Public Health and Associate Director for the Native Nations Institute, University of Arizona

Christine McRae

Executive Director, Native Land Digital (Native-Land.ca)¹¹

Joel Heath

Executive Director, Arctic Eider Society (arcticeider.com)¹²; siku.org)¹³

Ken Paul

Fisheries Negotiations and Research, Wolastoqey Nation of New Brunswick



DISCUSSION

SUMMARY

The second Discussion in the series consisted of a panel of guest speakers who provided information about the initiatives they are part of that are digitizing and sharing Indigenous knowledge. Panelists also reflected on questions of Indigenous ownership, access and control of data and information.

Stephanie Russo Carroll spoke to the CARE Principles for Indigenous Data Governance that were developed by the [Global Indigenous Data Alliance \(GIDA\)](#)¹⁴, and how these complement the FAIR principles and other movements towards Open Data. Stephanie emphasized that while the FAIR principles are data focused, the CARE principles are people and purpose oriented, and that additional tools are needed to support Indigenous data sovereignty.

C – Collective Benefit	F – Findable
A – Authority to Control	A – Accessible
R – Responsibility	I – Interoperable
E – Ethics	R – Reusable

Christine McRae spoke to the development of [Native Land Digital](#)¹⁵, a crowd sourced map that presents the traditional territories of Indigenous peoples in over 30 countries.

The organization's governing body is composed of Indigenous people and all the staff are Indigenous; an advisory body supports the organization and

is composed of Indigenous and non-Indigenous individuals. Native Land Digital has an open data policy; the information available via the map is never meant to be used for legal purposes and the organization asks that users acknowledge the source and work with the knowledge from a good place and with a good heart.

Joel Heath shared information about SIKU, the Indigenous Knowledge Social Network. SIKU is a mobile app and web platform built by and for Inuit which provides tools and services for ice safety, language preservation (including support for multiple Inuktitut languages and dialects) and weather. The knowledge shared by Inuit on SIKU can be viewed openly, however data cannot be used without permission.

Ken Paul spoke to the policy and regulatory aspects of Indigenous knowledge sharing. Ken emphasized the importance of Nations and communities developing their own protocols, to guide the process for working with proponents seeking Indigenous knowledge as part of requirements under federal legislation such as the Fisheries Act, or as part of environmental assessments conducted by the Impact Assessment Agency of Canada. Historically, Indigenous knowledge has been misused or used against the very communities who shared the knowledge; protocols and data sharing agreements can help

protect against this and ensure that Indigenous knowledge is informing the development of First Nations management plans and land claim negotiations.

ENVIRONMENTAL STEWARDSHIP

“The words that Elder Edward Perley talked about, to include all of our relations is something that has been at the forefront of my mind. And I was thinking a lot about our water systems. So, where I am coming to you from is the middle of Ontario at the headwaters of the Madawaska River system. And the Madawaska River, being a tributary to the Ottawa, which is then connected to the St. Lawrence River and then it flows out into the Atlantic Ocean. So, we are all connected through the water systems, and really what happens here eventually ends up in Mi'kma'ki so I am very conscious of the responsibility we have, here in this territory, to care for our waters here because they will come to you as well.”

Christine McRae

“Hunters throughout the community have been documenting the seals they have been catching and showing how there are seasonal trends in the changes in diets that affect the trophic level that seals are feeding at. This is run through the Northern Contaminants Program who

approached us and asked us ‘how can we better incorporate Inuit Qaujimagatuqangit into research on contaminants work?’ Because if seals are shifting their diet to different trophic levels, that potentially affects the pathway for contaminants to go through the food web – to seals, to polar bears, to people. But it can also affect the mixed models for researchers.”

Joel Heath

ORAL CULTURE AND TECHNOLOGY

“Every culture has Traditional Knowledge; Mi'kmaq Traditional Knowledge has been passed on to us from our ancestors without any deviation of it. Because one would think what our forefathers left for us was that they made sure our oral traditions would only be transmitted orally. And when we look at that concept today, when you recite any part of that oral tradition, you make sure that you repeat what was said, not what you heard. Because I believe if it had been just the opposite of that, the interpretation of our oral traditions could have been very much different than what they are now. Because as an individual, we have a strong tendency to repeat what we heard, and just continuously add on our own personal interpretation and personal opinions. So, this why I believe our culture is just as strong and relevant as it was then, and I certainly hope

that this will continue. But now since we are no longer oral and now we pretty much function on the written text, I'd like to suggest that maybe we should embrace some mechanisms of ensuring this traditional knowledge will not be deviated in the future, that the essence of it, the way it was delivered will always be transmitted in the same way so that the interpretation will always remain as it was intended to be.”

Elder Albert Marshall

“How do we make sure that we are having these conversations so that we are respecting protocols? So, embedding the ways of being and doing that we've always had within communities within our digital applications. But also recognizing that there is a definite need for continuing our oral knowledge and application of those oral knowledge systems, but recognizing, too, we are in this transition period - the entire global community is in this transition period to digital technologies - and how are we relating to and becoming part of these systems as Indigenous peoples?”

And not to be fetishized as being left in the past and that we are only behaving in these past ways, but we have these new ways of interacting with each other. And that can be adopted and utilized as communities see fit. And can complement ongoing oral systems of engagement and sharing

knowledge and working with the systems that we've always had within our communities. I see a lot of times we have these ‘either/or’ or ongoing tensions between doing it one way or the other, but it is really this Two-Eyed Seeing approach of how do we make sure we are adhering to the ways that communities want to be engaging with themselves and with other communities.”

Stephanie Russo Carroll

“SIKU is not meant to replace those oral history mechanisms, it's meant to help preserve language. Inuit are still going to learn by watching, and you can't learn to use your harpoon with the SIKU app. But it's getting youth who are addicted to games like PUBG to be interested and using the app to get out on the ice to learn from their Elders. And it's getting youth out there to video and take photos and record stories from their Elders that can be shared with others in the community to get them interested. And so, it's not in any way meant to replace that, it's meant to help support that. And there's been a lot of Elders who are excited about that approach, as well.”

Joel Heath

INDIGENOUS KNOWLEDGE SYSTEMS

“I want people to understand that it is a knowledge system that has a methodology behind it so that

people just don't think it's an objectified piece of information that they can take and plug into their own systems. There's a bunch of things that are embedded within Indigenous Knowledge Systems - there are values that come from our communities, that come from our ceremonies, and from our understandings and our teachings. It gives us a whole different mindset when you approach use of natural resources. For us, these are all things that are integrated. When I work with Western scientists from the Department of Fisheries and Oceans, from the provinces, from universities, the concepts that they are trying to understand and use now - and there's legislation and regulation about this - things like the Precautionary Approach - be careful - and Cumulative Effects - which is looking at how all things act upon each other - but these are concepts that are embedded within our communities and languages."

Ken Paul

INDIGENOUS LED

"Through some of the ongoing work, I've been aware in a lot of cases where academics have set up platforms, or even just agreements for certain projects, under the pretense that they were protecting Indigenous Knowledge, but at the end of the day it was really them protecting their academic interests...and so, under the guise

of some of these Intellectual Property things, a lot of academics were actually getting in the way of allowing Inuit to own and control their data. And so, the idea was 'how can we approach this from a way that really does provide for a number of different scenarios for Inuit to control their own data?'"

"It's a platform created by and for Inuit that first and foremost lets them have full ownership and control how they share it. It's not citizen science - it looks like a citizen science platform - but the difference is it's about self determination. And Inuit own their own data and they can choose to share it with a researcher if they want to."

Joel Heath

"We only share the information that communities have given permission to be put out into the world. And part of the more ethical conversation is that if there is anything that needs to be changed, or fixed, or added to or removed, we're able to respond quickly to change that information as needed. And further, if we do have any issues that we encounter, we draw on the knowledge of Elders within our own communities, or Elders who have offered to guide us through these more difficult situations."

Christine McRae

TOOLS

"Having the traditional place names on the map, on the GPS for SIKU, is huge. They have been available for a while but it's not until you have them offline and you are on the land and you see it, and that's where you are, that you remember it. And those place names aren't just names, they have a story and the name implies a lot of the meaning and what's important for that place. And the same for Inuktitut sea ice terminology - it's more advanced than the Canadian Ice Service Classification system for shipping and it's more relevant to communities - how you walk on it, how people use the ice, how wildlife use the ice. And so it's more than just words, it's a whole classification system that's even more detailed than science. And those words are some of the words that are most at risk at getting lost in the Inuktitut language. Even more than that, they are the foundation for Inuit knowledge - Inuit Qaujimagatuqangit frameworks. And by being able to make a post and tag it and associate the date, time, location, weather, photos around that, it's empowering Elders or hunters who have been forgetting that language to quantitatively use their own knowledge frameworks to document environmental change."

Joel Heath

"But more tools and mechanisms are needed, as well as criteria to assess and evaluate how these other institutions can enact the CARE principles.

To reinforce the operationalization of the CARE principles, the Global Indigenous Data Alliance and other collaborators and initiatives are supporting co-production of policies practices and tools to implement CARE."

"The other work I wanted to highlight is that of Dr. Kelsey Leonard, who served as a tribal co-leader for the former mid Atlantic regional planning body here in the U.S. under our National Oceans Council. And she has, since 2013 or 2014, advocated for and instituted change in collaboration with a team to confront Indigenous erasure by literally having to have Indigenous Nations appear on the map first. So, once they appeared on the map, their rights and interests became integral to moving forward, especially in the creation and the protocols for their Mid Atlantic Ocean Data Portal. And she recently wrote a [blog post](#)⁶ that talks about the application of CARE in mapping and observing efforts. She speaks eloquently to the need to promote equitable outcomes for collective benefit and how that interacts with the data portal they set up."

Stephanie Russo Carrol

PROTOCOLS AND INTELLECTUAL PROPERTY RIGHTS

"The reason why this [protocols] are important, is because there are often times when information

was taken from the community and never shared back...another problem that requires alleviation is that the information is not going to be misused. There are many cases where information was shared on a specific project – was shared throughout a Federal department or through academic journals, shared out by somebody else who never really understood it - and they used that against the community itself. One of the things that we need this information for in our Native communities is to establish land claims; working with land claims and land title, you have to prove occupancy and use according to Canada's court systems. So, in order to appease Canada's courts, we have to understand and take these very careful steps."

"It's really important also to acknowledge the lack of data sovereignty and data security that is expected from First Nations when we are asked to share our knowledge. Whenever we talk about data sharing agreements it's usually construed as a one-way arrangement where Indigenous Elders are going to share information outward and it's going to be managed by somebody else. The problem with our Indigenous Knowledge in that kind of arrangement is that we actually need that information coming from other people, as well, as part of a partnership and a relationship. We also need ways of trying to protect our Indigenous Knowledge. There are no Intellectual Property laws that exist either

nationally or internationally that protect the Intellectual Property rights of Indigenous cultures."

Ken Paul

"I do think that many knowledge holders, knowledge keepers and Elders share a lot, and they share what it is that they feel needs to be shared at a certain point in time. And they have their own agency to do that. And so, most of the Elders I have met, I trust that the amount of knowledge they are willing to share and the actions they take are that which they think is appropriate to share and make the world a better place."

"I belong to a community and a Nation that has been deeply impacted by colonization and I grew up not really knowing our stories or traditions or culture. And have spent most of my life trying to relearn just a very small portion of that knowledge. For myself, in knowing the legacy of that lack of knowledge as well as the amount of work that it is has taken to relearn that knowledge I am hesitant to share outside of my community. So, for me, the priority remains in the community, in the Nation and making sure that those next generations do not grow up wondering who they, or where they're from, or the ways we interacted with the land. Encouraging community resurgence is my priority on a personal level."

Christine McRae

"There's two approaches: the Terms of Use and Privacy Policy – you know all that text when you join Facebook or whatever that you don't read and just press 'I agree'. That's really important in this context[...]"

Joel Heath

TRAINING

"What are the training needs and the various elements of training that are needed by different populations. So, by rights holders and Indigenous nations, in order to support Indigenous governance efforts but also by other stakeholders, so repositories, or government identities and so forth. How do we promote and create alternative licensing and agreement systems that support communities in their engagement with external data systems? How do we expand mechanisms for provenance and permission and protocols within external data systems. Things like data standards, the use of metadata labels. And how do we really push forward so we are able to share and understand the tools that people are using?"

Stephanie Russo Carroll

USE OF DATA IS PURPOSEFUL

"For people that are coming into our communities, asking for this information, the information is

localized to the Nation itself. We can't transplant information from one section of Canada to another. It just doesn't work that way. So, whatever comes up with respect to policies and approaches has to be adaptable to work at the community level. There's a whole governance structure that's related to this as well with respect to data sovereignty. The Nation has to deal with the information and that information is often used to help with land claims, title claims, nation-to-nation relationships and all these other things that are necessary for governing themselves."

"When any First Nation is going out to assert itself and deal with natural resources, we also have to have management plans in place. Part of the management plan is our own Indigenous knowledge, our own science, and our own approach. So, these are the things that are very important to us. The data sharing agreements should outline what the information that is shared outward can be used for, in what context, and these are legally binding documents. There has to be a formality around data sharing itself, to ensure the protection and integrity of the information, and that it won't be used against First Nations."

Ken Paul

"The drivers behind the creation of the CARE principles really were twofold: concerns about

secondary use of data and limited opportunities for benefits sharing. So, trying to work through the tensions between protecting Indigenous rights, and interests in Indigenous data and Knowledge Systems, and supporting participation in open data, broad data sharing, big data initiatives. The CARE principles really empower Indigenous peoples by shifting the focus from this regulated consultation to value-based relationships. And the key there is that 'relationships' point, and positioning data approaches within Indigenous cultures and Knowledge Systems to the benefit of Indigenous peoples."

Stephanie Russo Carroll

Collaborations

February 16, 2021: 1:00 – 3:00 p.m. AST

Guest presenters shared regional, national and international success stories about coastal and ocean knowledge and data collaborations between Indigenous and non-Indigenous peoples and organizations.

Recording available here:

[CIOOS Atlantic YouTube Channel](#)¹⁷

Key Themes

Indigenous Led Research and Data Management
The Value of Data Labels
Participatory Research
Shared Knowledge Systems

Maui Hudson

Associate Professor, Te Mata Punenga o Te Kotahi (Te Kotahi Research Institute), Te Whare Wānanga o Waikato (The University of Waikato); Co-Director, ENRICH, Equity for Indigenous Research and Innovation - Coordinating Hub

Apoqmatulti'k (Mi'kmaw: "we help each other")

Unama'ki Institute of Natural Resources, Mi'kmaw Conservation Group, Marine Institute of Natural and Academic Science, Ocean Tracking Network, Acadia University, Dalhousie University, and Fisheries and Oceans Canada

Dr. Jane Anderson

Associate Professor, Anthropology and Museum Studies, New York University, Co-Director, ENRICH, Equity for Indigenous Research and Innovation – Coordinating Hub

Pieter Romer

Indigenous Community Liaison, Ocean Networks Canada

DISCUSSION



SUMMARY

The third and final discussion in the series focused on collaboration and provided the opportunity to hear first-hand examples of successful partnerships that have demonstrated the value of knowledge and data sharing to enhance ocean observing initiatives. Although CIOOS does not directly collect data in the field, it works closely with those who do hold and collect information on our coasts and oceans. Understanding that not all data can be made publicly available, the CIOOS team is learning about ways to facilitate access to these types of knowledge and to advance our shared goals when it comes to our coasts and oceans through discussions like this.

The Apoqmatulti'k ("We help each other") project centres around a governance model focused on integrating knowledge systems and enhancing partnerships through Two-Eyed Seeing. This approach has resulted in a successful and productive collaboration that has opened lines of communications between local knowledge holders and academic researchers, creating opportunities for capacity building and demonstrating the value of shared knowledge systems.

Pieter Romer's work as an Indigenous Community Liaison with Ocean Networks Canada (ONC) provided numerous examples of successful collaborations with Indigenous partners that are focused on supporting Indigenous priorities and

collaboratively implementing the tools required to monitor and manage their ocean environments. ONC is currently working with Indigenous partners on 29 initiatives across Canada, all of which are focused on ensuring the needs of the partners are met and they are connected with the right experts to address these needs. Pieter was one of 53 representatives from around the world that joined Ocean Obs '19's Indigenous Ocean Governance Forum which, for the first time, was a central part of the Ocean Obs conference.

Jane Anderson and Maui Hudson provided an overview of their work with Local Contexts to develop Indigenous data labels and tools to support greater collaborations and responsibility towards the use of Indigenous data, similar to the use of traditional land. Traditional knowledge labels and bio cultural labels serve as digital tags that reflect protocols for sharing this knowledge that can be incorporated into the metadata record of data currently being collected and also build Indigenous protocols back into the metadata within catalogues, archives, libraries that are already in place. The labels reflect a range of protocols from the ownership of these collections to identifying cultural sensitivities with particular types of data. Every community customizes their own labels to determine how their data is attributed in an effort to bring Indigenous rights and responsibilities back into digital infrastructure.

PARTICIPATORY RESEARCH

"When you start to know people, and start to understand people and respect people and you work with people, the science changes the outlook because you're interacting with people you normally don't interact with and it's a very good tool."

Darren Porter

"Mi'kmaq people contribute in meaningful ways to determining what research questions are and how the research is undertaken and this is very important to us as there are differences in values underpinning what we need to know and why and how the research must have minimal impact on the environment or to the research species."

"Placement or portrayal of Indigenous involvement cannot be an afterthought, it must be highlighted and portrayed as equal in the research relationship."

Shelley Denny

SHARED KNOWLEDGE SYSTEMS

"As a suggestion, I wish there was a way these two concepts (scientific and traditional knowledge) could be embraced, these two concepts could be used to raise the awareness of why the source of life should be protected because this issue is not a regional issue, is not a national issue, it is a global issue. Therefore, it's going to require the best

mindful and compassionate people from a global community for us to convey the kind of message that needs to be conveyed and that is: we have to go all out to try and protect the very source of life that we depend upon because if we don't, what chance will we have."

"How many actual people truly believe that we have exhausted the carrying capacity of our system, that we have actually exhausted the cleansing capacity, especially our waters. And do we need more scientific data to prove we have exhausted those capacities. And I do know that no one knows exactly when that point of no return will be but who wants to find out when that will come? So I think to amplify our voices, we have to be talking more in the practical terms."

Elder Albert Marshall

"Sila is an Inuit word which means 'Everything' which means everything is connected, the trees, the animals, the fish, the waters, the rocks, the oceans, the people. Thus, it is crucially important to include all knowledge and incorporate in making vital decisions."

**Stanley Oliver, Oceans & Aquatic Specialist,
NunatuKavut Community Council**

"Traditional knowledge handed down from Elders and traditional resource harvesters play a

crucial role in ecosystem based marine planning. Indigenous want to know the same information as scientists through building true partnerships with ocean organizations, Indigenous are deemed to become a powerful force in ocean data management.”

Pieter Romer

“I think we need to act under the UN Decade.

The Ocean Frontier Institute hosted the North Atlantic Workshop for the UN Decade about a year ago. And we had small but significant Indigenous representation and they spoke up, stepped up to the microphone and really spoke their stories. And it changed fundamentally the meeting. We had traditional western scientists throwing away their notes and speaking from the heart in that meeting. So, you could feel the movement. It was small but it was really significant.”

Anya Waite, Scientific Director and CEO,

Ocean Frontier Institute

“Thinking about working together based on respect, respect and acknowledgment and being inclusive because I guess as human beings, we all have as we spoke earlier on about, we have some common interests here and to me the presentation that Pieter (Romer) just did is unique in a way when

you think about taking traditional knowledge and utilizing the Western knowledge and combining them together, that's an example of what Elder (Albert) Marshall speaks of as Two-Eyed Seeing and that everything should be always based on respect and mutual respect and more so about being more inclusive with a place for Indigenous knowledge also to partner up with the Western Knowledge.”

Elder Edward Perley

INDIGENEOUS LED RESEARCH AND DATA MANAGEMENT

“The shift towards increasing Indigenous control over research and data management is paired with the understanding at the highest political level that reconciliation means having a seat at the decision making table. This is creating fundamental shifts in the status quo approach to engaging with Indigenous people.”

“We [Ocean Networks Canada] ensure the needs of Indigenous partners are met and they are connected with the right experts. Our approach to collaborating with Indigenous partners varies from project to project but what is important to us is that Indigenous partners are at the same table and have a strong voice and ownership in a project.”

Pieter Romer

THE VALUE OF DATA LABELS

“In a machine learning context, data labelling is a process of identifying raw data and adding meaningful information and kind of providing context so that a machine learning model can learn from it. And so our proposition really is, what it looks like, what does it mean to have machine learning that can predict when data has come and has Indigenous rights and interests as part of it, how would that change how Indigenous interests recognize what kind of equitable outcomes can be developed over time.”

Jane Anderson

“We're seeing from a range of communities even if it [labels] doesn't provide legal protection, what it does is it makes really transparent your relationship with these datasets, particularly when the information is sitting on an open platform somewhere which anyone else can access and so it's not necessarily the researcher you've worked with in the kind of collaborative sense where often you would have a conversation about what that looks like, it's actually how you reflect these agreements and discussions for other people that are just coming to the data and not coming to the community. That's where I see the value of this work.”

Maui Hudson

CLOSING

“This is a global concern and it affects all species of life. We always think about how it affects the humans but hardly ever give consideration to the species that live and utilize the water - the sacred water. The water also has the life within itself to sustain these species that rely on it for survival and existence. The human species as well rely on these elements. Have respect for one another, and respect for all life that exists here in this beautiful womb we call Mother Earth. Again, to each and every one of you out there, if nobody told you today that anybody loves you, I just want to share my love, and extend my love to each and every one of you out there.”

Elder Edward Perley

“I found the whole series to be very hopeful.

Many of us have been at this around the world for a long time, trying to connect the science world or academia with Traditional Knowledge. I was just so taken when Shelley and her team spoke and I said: ‘that’s what we have prayed for and asked for’, to have people like Shelley and Alanna and the others get the education and bring it back so that we can speak in both worlds and we can participate. UNDRIP, the United Nations Declaration on the Rights of Indigenous People, and the recent Truth and Reconciliation here in Canada – there are very good calls to action and laws under UNDRIP that I believe if we all take a look at them we will find the type of power and authority we need to move recommendation into law. We already have UNDRIP, we already have the TRC calls to action here, and I’m sure there’s others around the world. If we all do this, everybody pays attention and looks at it, there might be a way that we could work a little closer and harder at doing what we’re all doing.”

Catherine Martin

CIOOS ATLANTIC RECOMMENDATION

FOR NEXT STEPS

The team at CIOOS Atlantic has learned much over the course of this three-part Discussion Series. Guest speakers brought diverse perspectives on Indigenous data sovereignty and provided specific details about their own experiences with initiatives that digitize, share and manage access to Indigenous data and knowledge.

We have learned that Two-Eyed Seeing, a guiding principle developed by Mi’kmaq Elder Albert Marshall, is “learning to see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of mainstream knowledges and ways of knowing, and to use both these eyes together, for the benefit of all”. Elder Albert Marshall called on us to drop the ‘business as usual’ approach and take action towards transformative change to protect our oceans for future generations. Elder Edward Perley reminded us that we, humans, are connected to the elements and to all the other creatures on the planet and to undertake our actions with love. Catherine Martin spoke to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the Truth and Reconciliation (TRC) Commission of Canada and the powerful frameworks these provide to bring people together respectfully to take action.

Common themes emerged from the discussions and presentations and have been identified in this document, along with supporting quotes. These themes will serve as guideposts to CIOOS Atlantic as we continue to develop meaningful relationships with Indigenous peoples and organizations, as we pursue our mission to create a system for coastal and ocean information sharing that meets the needs of the local oceanographic community in Atlantic Canada.

One concrete commitment CIOOS Atlantic is taking to continue to educate ourselves about Indigenous data sovereignty is to offer all CIOOS Atlantic staff access to OCAP training. The First Nations principles of ownership, control, access, and possession – more commonly known as OCAP – assert that First Nations have control over data collection processes, and that they own and control how this information can be used.

The team at CIOOS Atlantic is committed to continuing to learn about the information and data sharing needs of Indigenous peoples and organizations in Atlantic Canada and exploring mutually beneficial partnerships that bring Indigenous and Western knowledge systems together in respectful and powerful ways.

Sincerely,

Shayla Fitzsimmons

CIOOS Atlantic Executive Director

VITALITY INFORMATION

An important insight that CIOOS Atlantic has gained in our conversations with Indigenous peoples and organizations is that not all knowledge can or should be made open. CIOOS has started a new collaboration with Canada's Ocean Supercluster, called VITALITY. Through conversations and surveys we are continuing to explore how awareness of sensitive and restricted data can be increased while at the same time ensuring ownership and control is maintained by the data holder.

One aspect of VITALITY is training - what, if any, training is needed or would be helpful for those who work with coastal and ocean data, to better support people in stewarding their own data. Please help us by completing this [survey](#).¹⁸

Please check out the [VITALITY website](#)¹⁹ or contact us at CIOOS Atlantic if you are interested in learning more.

PISCES RPM FUNDING

[Pisces Research Project Management Inc.](#)²⁰ is a research and development project management company passionate about making the greatest positive impact for our ocean research money and time. Pisces maintains honest, transparent and fun relationships, and brings these principles to our project management services to give researchers and businesses back their time.

Pisces is available to help at all stages of your project, or just when you need a little help at a particular stage.

During Covid, we've noticed some organizations have better access to funding than others — and we want to help. Donating \$10,000 in proposal writing services to a community organization who would not otherwise be able to access these services. The proposal must be oceans focused.

If you are interested or know someone who is, please get in touch!

Email us at piscesrpm@piscesrpm.com

Pisces RPM is committed to:

Making the greatest positive impact with our ocean research money and time.

Creating transparent, long-lasting and mutually beneficial collaborations.

Maintains honest, transparent and fun relationships through communication, empathy and allowing each member of the collaboration to focus on joyful work.

Enables underutilized talent, developing a team mentality and building research management capacity in Canada.

CIOOS ATLANTIC DISCUSSION SERIES

PARTICIPATING ORGANIZATIONS

3D Wave Design

Hakai Institute

Ocean Networks Canada

Apti Institute

Kingsclear First Nation

Oceans North

Arctic Eider Society

Maliseet Nation Conservation Council

Ocean Tracking Network

Atlantic Policy Congress of
First Nation Chiefs SecretariatMarine Institute,
Memorial University of Newfoundland

Pauquachin First Nation

Bras d'Or Lakes Collaborative

Memorial University of Newfoundland

Red Star International

Environmental Planning Initiative (CEPI)

MetOcean Telematics

Reimaging Atlantic Harbours

Canada's Ocean Supercluster

Miawpukek First Nation

St. Lawrence Global Observatory

Clean Foundation

Mi'kmaq Alsumk Mowimsikik
Koqoey Association (MAMKA)

St. Mary's First Nation

Clear Seas Centre for Responsible Marine Shipping

Mi'kmaw Conservation Group

Transport Canada

Confederacy of Mainland Mi'kmaq

Native Land Digital

Tula Foundation

Dalhousie University

Northeastern Regional Association of Coastal
Ocean Observing Systems (NERACOOS)

Ulnooweg Development Group

DeepSlope Explorations

Unama'ki Institute of Natural Resources

Department of Fisheries and Oceans

Nunatsiavut Government

University of British Columbia

Equity for Indigenous Research and

Innovation – Co-ordinating Hub (ENRICH)

NunatuKavut Community Council

University of Victoria

Fishermen & Scientists Research Society

Ocean Frontier Institute

University of Waterloo

Wolastoqey Nation of New Brunswick

GUEST SPEAKER BIOGRAPHIES

DISCUSSION 1:

Catherine Martin

A member of the Millbrook First Nation in Truro, Nova Scotia, Catherine Martin is an independent producer, director, writer, facilitator, communications consultant, drummer and the first woman Mi'kmaw filmmaker from the Atlantic Region. She has a BA from Dalhousie University in Theatre Arts and a Master of Education from Mount St. Vincent with a focus on Media Literacy.

Catherine's award-winning documentaries include the animation film *Little Boy Who Lived with Muini'skw* (2004), the NFB film *The Spirit of Annie Mae* (2002), and *Spirit Wind* (2000). In 2006, Catherine added the NFB online documentary *Bringing Annie Mae Home* to her many accomplishments. She has produced videos for Coady Intl Institute's Indigenous Women In Community Leadership for their curriculum; is producing a series of short vignettes for the Mi'kmawey Debert Project in Truro, NS.; has produced 8 Atlantic Aboriginal Entrepreneur Shows and video profiles for Ulnooweg Development Group; and continues to work with organizations to produce stories about the Mi'kmaq and First nations communities. Catherine is the past chairperson of the Board of Directors for Aboriginal Peoples Television Network (APTN), the first co-chair of Dalhousie Indigenous Black and Mi'kmaq Law Program, and the past chair of Society for Canadian Artists of Native Ancestry.

She has helped to develop many of the policies and programs within the Canadian Cultural and Arts Institutions to advance First Nations Artists in their respective disciplines and has advocated for educational access to professional careers. She was the interim director with Nations In A Circle, an Atlantic Aboriginal Arts Organization. Catherine and her company have worked with several Mi'kmaq and Maliseet organizations to produce corporate promotional videos that help to tell the story of individual initiatives such as the Unamaki Economic Benefits Office and Ulnooweg Development Group. She was a contributor to *Aboriginal Oral Traditions* (2008) and is a regular contributor to Mi'kmaq Maliseet Nation News. She teaches Mi'kmaq and Aboriginal History and Culture at universities and in communities across Canada and the US, including Cape Breton University. Catherine herself has been featured in recent documentaries and television shows such as *APTN's Storytellers In Motion* (2008); *NFB's Aboriginal Directors Profiles*;

She was recently awarded the Women In Film Award for her Contribution to the film industry in Canada. She teaches communications and fine arts for University College of Cape Breton in Mi'kmaq communities. She was the 14th Nancy Chair in Women Studies at Mount Saint Vincent University from July 1, 2015 to June 30, 2017.

She presently Serves on the Kings College Board of Governors Awarded Senate 150 medal 2019 and She was awarded the Order of Canada 2017. On March 1, 2020 she became the Director of Indigenous Relations for Dalhousie University created in response to TRC Calls To Action.

DISCUSSION 2:

Stephanie Russo Carroll

Dr. Stephanie Russo Carroll is an Ahtna and Sicilian-decent woman who is a citizen of the Native Village of Kluti-Kaah in Alaska. She is Assistant Professor of Public Health and Associate Director for the Native Nations Institute at the University of Arizona. Stephanie's research explores the links between Indigenous governance, data, the environment, and community wellness.

Her interdisciplinary research group, the Collaboratory for Indigenous Data Governance develops research, policy, and practice innovations for Indigenous data sovereignty. Her research, teaching, and engagement seek to transform institutional governance and ethics for Indigenous control of Indigenous data, particularly within open science, open data, and big data contexts. Stephanie co-edited the book *Indigenous Data Sovereignty and Policy* and led the publication of the CARE Principles for Indigenous Data Governance which provide

critical considerations for non-tribal entities that steward and use Indigenous peoples' data.

She is a strong advocate for the creation of institutional research and data practices at tribes, funding entities, and universities that infuse Indigenous rights and interests across law and policy spheres. Stephanie co-founded the US Indigenous Data Sovereignty Network, and co-founded and chairs the International Indigenous Data Sovereignty Interest Group at the Research Data Alliance and the Global Indigenous Data Alliance (GIDA). She Chairs the Indigenous Data Working Group for the IEEE P2890 Recommended Practice for Provenance of Indigenous peoples' Data. Stephanie is an ENRICH: Equity for Indigenous Research and Innovation Coordinating Hub Global Chair. She is also a founding board member for the Copper River Tribal University in Chitina, Alaska.

Christine McRae

Christine is an Omàmiwinini Madaoueskarini Anishinaabekwe (a woman of the Madawaska River Algonquin people) of the Crane Clan. Christine is the Executive Director of Native Land Digital. Christine owns two Indigenous knowledge-based companies, Waaseyaa Consulting and Waaseyaa Cultural Tours. She is an extremely active volunteer for community and nation-based

organizations, and has worked as an archaeologist, an orator, and has years of management experience with various organizations. She is an avid outdoor adventurer, spending much of her time hiking, canoeing and learning about medicinal plants. She is currently pursuing her M.A. in Indigenous Studies at Trent University.

Joel Heath

Joel is the Executive Director and co-founder of AES and is an accomplished Canadian academic and filmmaker and the 2014-15 Fulbright Chair in Arctic Studies. He has a B.Sc. Joint Hons. and M.Sc. in interdisciplinary biology from MUN, a Ph.D. from the Centre for Wildlife Ecology at Simon Fraser University (in partnership with ECCC), and held an NSERC Postdoc in Mathematical Biology at the University of British Columbia.

He has worked and lived in Sanikiluaq Nunavut since 2002 to support community priorities for capacity building, and has spent 19 winters on the sea ice with Inuit and Cree hunters in Sanikiluaq as well as Inukjuak, Umiujaq, Kuujuaapik and Chisasibi, learning Indigenous knowledge of terrestrial, marine and sea ice ecosystems. Through this position, he has worked with Inuit to help develop a network of community-driven research programs, curriculum for northern schools, directed/produced the 16x award winning film [People of a Feather²¹](#), and most recently

developed online and mobile technology for Inuit self-determination in research through SIKU: The Indigenous Knowledge Social Network, winner of the Google.org Impact Challenge in Canada. He was presented with an award of community recognition for his service to Sanikiluaq by the Municipality of Sanikiluaq in 2015. In 2020, Joel was nominated and selected for the prestigious Ashoka Fellowship – a network of the world's leading social entrepreneurs whose work improves the lives of peoples across the globe.

Ken Paul

For 10 years, Ken was an engineer and Hydrographer-in-Charge with the Canadian Hydrographic Service responsible for leading multibeam seafloor mapping operations along the Atlantic coast, the Bras d'Or Lakes and offshore on multiple sea-borne and land-based platforms. Following this, Ken spent 10 years with Parks Canada as a Senior Aboriginal Policy Advisor in the Atlantic and a Field Unit Superintendent of 3 National Parks in the Northwest Territories.

In 2013, Ken was the Director of Fisheries and Integrated Resources for the Atlantic Policy Congress of First Nations Chiefs Secretariat. He supported the commercial fisheries and aquaculture among the 30+ First Nation communities across the Atlantic/Gaspé region. He was also responsible for

policy development in renewable energy, environment, and climate change.

In September 2018, Ken accepted the role of Director of Fisheries for the Assembly of First Nations. He is responsible for supporting First Nations Chiefs and regional organizations in legislation, regulations, and policy development, advocacy, and research on inland fisheries, commercial fisheries, marine issues, oceans governance, and aquaculture on a national and international level.

In October 2020, Ken accepted the role with the Wolastoqey Nation of New Brunswick as lead Fisheries Negotiator and Fisheries Research Coordinator. He directly supports 6 Wolastoqey First Nations who are beneficiaries of the Peace and Friendship Treaties of 1752 and 1760/61 which were affirmed by the Marshall Decision. He has a Bachelor of Science degree from Dalhousie University and a Master's in Business Administration from St. Mary's University. Ken is a member of the Maliseet First Nation at Tobique, NB (Wolastoqey Neqotkuk) and is a dedicated father of two.

DISCUSSION 3:

Jane Anderson

Jane Anderson is an Associate Professor at New York University in Lenapehoking (New York)

and Global Fellow in the Engelberg Center for Innovation Law and Policy in the Law School at NYU. Jane has a Ph.D. in Law and works on intellectual and cultural property law, Indigenous rights and the protection of Indigenous/traditional knowledge and cultural heritage. For the last 20 years Jane has been working for and with Indigenous communities to find, access, control, and regain authority and ownership of Indigenous cultural and intellectual property collections and data within universities, libraries, museums and archives. Jane is co-founder of Local Contexts which delivers the TK (Traditional Knowledge) and BC (Biocultural) Labels and Notices. She is also the co-founder of ENRICH.

Maui Hudson

Maui Hudson is from Whakatōhea, Ngā Ruahine and Te Māhurehure. He is an Associate Professor, Te Kotahi Research Institute at the University of Waikato, focusing on the application of mātauranga Māori to decision-making across a range of contemporary contexts from new technologies to health, the environment to innovation. Māui supports Māori to engage in the research sector as a co-convenor of SING Aotearoa, the New Zealand chapter of the Summer Internship for Indigenous Genomics, and Te Ahu o Rehua, a Network for Cross Cultural Ocean Knowledge connecting expertise across the fields of climate change, marine science, ocean health,

voyaging and non-instrument navigation. Māui also advocates for Māori rights and interests through Te Mana Raraunga: Māori Data Sovereignty Network and the Global Indigenous Data Alliance. He is a co-founder of ENRICH, a joint initiative between the University of Waikato and New York University, and a co-developer of the Biocultural Labels Initiative.

Pieter Romer, Indigenous Community Liaison

promer@oceannetworks.ca

As a liaison between coastal Indigenous communities and ONC's science & technology teams, Romer is able to navigate complexities in the interplay among scientific objectives, current environmental policy and issues of cultural significance. He believes ONC's high tech ocean observatories are powerful tools that provide coastal Indigenous communities with critical real-time data to make informed decisions about their local ocean environment for long-term sustainability and resilience.

Romer descends from both the skilled fisherman of the Nisga'a wolf clan or Laxi'buu, and from Frisians, who also have a long history of seafaring. His Dutch grandfather was Captain of a 15,000-ton Empire ship and the 4000-ton "My Lady" based out of Rotterdam, which delivered paper around the world. His love for the ocean comes from

being raised on his father's commercial fishing boat the "Serenade," which trolled for salmon between Port Hardy and Brooks Peninsula, 1977 to 1998. As a former documentary television producer and senior producer for CTV's award-winning Indigenous series First Story, Romer brings more than 20 years of experience engaging with Indigenous communities and organizations in British Columbia and parts of Canada.

Apoqmatulti'k (ah-boggin-ah-mah-tul-teeg)

Mi'kmaw for "we help each other"—is an NSERC-funded project that enables collaborative stewardship through a holistic partnership that includes Mi'kmaw knowledge holders, local harvesters, academic researchers, and government scientists. Apoqmatulti'k draws on the strengths of different knowledge systems (or ways of knowing) to better understand the movements of American eel, American lobster, and Atlantic tomcod in the Bay of Fundy and Bras d'Or Lake ecosystems.

Partners on the project include the Ocean Tracking Network, Unama'ki Institute of Natural Resources, Mi'kmaw Conservation Group, MINAS, Acadia University, Dalhousie University, and Fisheries and Oceans Canada.

Shelley Denney

Shelley Denny is from the Mi'kmaw community of Potlotek and is Director of Aquatic Research & Stewardship at the Unama'ki Institute of Natural Resources (UINR) along the Bras d'Or Lake.

Skyler Jeddore

Skyler is from the Mi'kmaw community of Eskasoni and is the project's community liaison and field technician for the Bras d'Or Lake and works closely with the Ocean Tracking Network and UINR.

Alanna Syliboy

Alanna is the Mikmaw Knowledge and Community Engagement Manager with the Mi'kmaw Conservation Group. Among other roles, she serves as the project's community liaison for the Bay of Fundy.

Darren Porter

Darren is a commercial harvester and founder of MINAS (Marine Institute of Natural and Academic Science) and is instrumental in helping with the Bay of Fundy field work.

CONTACT

We welcome your questions and comments, and are always open to new partnerships - give us a shout!

Find out more [here](#).²²

Email us at info@cioosatlantic.ca

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- 8 <https://www.youtube.com/channel/UCtDCafF8ggqQ4Noh74QTlvQ>

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- 11 <https://native-land.ca/>
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- 17 https://www.youtube.com/watch?v=Dm9RnXIWb6c&ab_channel=CIOOSAtlantic

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