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Connecting Communities to Enhance Communication, Collaboration, and Capacity Building related to Environmental Caretaking

A Report from the "Weaving Indigenous knowledge systems and Western science towards conservation and management of wildlife and the environment" Project

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OUR APPROACH AND POSITIONALITY

The purpose of this research project (interviews, reports, and subsequent articles) is to listen to and elevate the perspectives, experiences, and knowledge of Indigenous communities across so-called Canada. With the information so graciously shared with us, our intention is to advocate for Indigenous Knowledge, research methodologies, and priorities in ecological monitoring, research, and decision-making - in a good way.

Our research team consists of both Indigenous and non-Indigenous researchers from biology, law, and environmental sciences, environmental professionals, and Indigenous Knowledge holders with lived experience in Anishinaabe ways of knowing.

At the core of our research approach is partnership, respect, and reciprocity among Indigenous and non-Indigenous partners to ensure that the knowledge, concerns, and priorities shared throughout our work are not misinterpreted or appropriated, and are based on the perspectives and needs of everyone.

Ultimately, we aim to generate environmental research, policy, and decision-making that holds deliberate and respectful space for Indigenous Peoples to share their knowledge, traditions, and values; an approach that will, ultimately, ensure important decisions are made with all of the available tools and knowledge, and are in the best interest of all human and non-human relations.

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EXECUTIVE SUMMARY

In response to interest expressed by First Nations in the Robinson-Huron Treaty Area, our research team hosted a workshop with Magnetawan First Nation in November 2019 entitled *Connecting Guardians in a Changing World*. At this workshop, Anishinabek participants shared their experiences, observations, and concerns related to impacts of climate change, aerial herbicide spraying, and other environmental issues. Through these conversations, participants identified a clear and explicit need for increased communication and networking with other Indigenous communities and environmental professionals to facilitate knowledge sharing, capacity building, and collaborations rooted in shared environmental concerns and priorities. Stemming from this suggestion, our research team wanted to learn more about the broader interest in a knowledge sharing platform related to environmental issues and conservation, and how to best accomplish it. So, we initiated a second phase of the project, where we invited some of the same and some new communities to share perspectives on a variety of topics, including the need for a platform to enhance communication, collaboration, and capacity.

In this report, we summarize interview responses from 12 First Nation and Métis communities across so-called Canada related to the creation of a knowledge sharing network, including questions about each individual's general interest in connecting with other communities and/or organizations, the most effective platform to use (e.g., Facebook group, virtual or in-person workshops, etc.), the best geographic scope (e.g., regional, provincial, national), and topics of interest (e.g., climate change, moose, everything). Our hope for this discussion was to generate feedback and recommendations that could guide the creation of a knowledge sharing network that meets the needs of a wide range of Indigenous communities.

Every interview participant was interested in the idea of connecting more with other Indigenous communities. Participants expressed that being able to network with more people and access a greater knowledge base would result in better outcomes for everyone, and for the environment. There were mixed reviews in terms of the best platform for a knowledge sharing network. Participants explained that online platforms can serve as a repository for existing resources, help connect with distant communities, and engage youth, but the benefits of in-person interactions and relationship building were recognized to be irreplaceable, particularly for Elders. So, combining online initiatives with in-person workshops, along with other forms of communication (e.g., newsletters, social media, radio), might be the most successful at engaging as many people as possible. Many topics for discussion were suggested, all related to the environment. Some were more specific (e.g., water, recycling, caribou) and some were very broad (e.g., climate change, conservation, citizen science, environmental monitoring initiatives). Participants varied in whether they wanted to engage with local communities or across broad geographic regions; more localized networks ensure all

participants share similar environmental concerns, but broader networks bring together more diverse perspectives and experiences. Generally, participants were in favour of including as many individuals and organizations as possible, regardless of affiliation (i.e., government, university, NGO), in order to learn from diverse perspectives and access as much information as possible. However, having strong Indigenous oversight was a key priority in every case.

Finally, we share recommendations for those interested in building a knowledge sharing network and describe our team's on-going efforts to create a website to foster communication and networking. We hope to contribute to future environmental monitoring, research, and decision-making that is founded in the priorities, concerns, and knowledge of many Nations.



INTRODUCTION

In November of 2019, Magnetawan First Nation hosted a two-day workshop with participants from 12 First Nation communities in the Robinson-Huron Treaty Area (Great Lakes Region of Ontario). The intent of this workshop, entitled “*Connecting Guardians in a Changing World*”, was to discuss environmental concerns and priorities - including cultural keystone species and their value to communities, impacts of climate change, and aerial forest spraying - and future research priorities related to the environment (summarized in Gallant et al. 2020, Patterson et al. 2020, Menzies et al. 2021). An unanticipated theme that emerged from the 2019 workshop was an explicit and widespread need for greater communication and connection across Nations. Specifically, a place communities can share knowledge and experiences related to environmental issues, monitoring, and research. Stemming from this, our research team initiated a second phase of the project, where we invited some of the same and some new communities to share knowledge on a variety of topics, including the need for a platform to enhance communication, collaboration, and capacity building related to environmental caretaking.

Generally speaking, a necessary component of decolonizing environmental science and decision-making is to recognize the value of Indigenous Knowledge, place action behind it, and ensure Indigenous voices are amplified in important conversations, decisions, and social movements. A necessary action involves creating more accessible and ethical avenues for Indigenous Peoples to share their knowledge, observations, and stories, from their own perspective. While many personal and professional networks exist, having access to a community of environmental professionals that bridges worldviews, sectors, and geographic jurisdictions could provide new opportunities to share knowledge, collaborate, gain access to funding, increase capacity building opportunities, facilitate knowledge mobilization, and generate new and creative solutions to shared problems. Ultimately, creating deliberate and respectful space for communication and relationship building across Nations - both Indigenous and non-Indigenous - specific to environmental issues and solutions could help ensure that future monitoring, research, and decision-making is founded in the priorities, concerns, and knowledge of all human and non-human relatives.

Objectives

The aim of this report was to summarize the level of interest and perspectives regarding a potential network or platform to connect Indigenous and non-Indigenous environmental professionals and community members across (so-called) Canada. We summarize responses to questions assessing 1) whether participants were interested in networking and sharing with other communities, 2) the most effective platform and/or medium (e.g., online vs. in-person) to use, 3) the appropriate scope for such a network (e.g., geography and discussion topics), and 4) who should be encouraged to participate and/or in charge of managing such an initiative. By bringing multiple perspectives together - from 12 First Nation and Métis communities from coast to coast - we hoped that the resulting recommendations and action plan would be useful to a wide range of Nations and help bring together environmental professionals at the community, provincial, and national scales.



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METHODS

Context

As mentioned above, this work began as a partnership between several First Nations, namely Magnetawan First Nation in Ontario and, subsequently, Gitanyow First Nation in BC, as well as university researchers who hosted the workshop with Anishinabek communities in November 2019. During the 2019 workshop, we discussed cultural keystone species and their value to communities, environmental concerns, and community priorities - impacts of climate change, aerial forest spraying, how to weave knowledge systems - and identified any further research priorities (summarized in Gallant et al. 2020, Patterson et al. 2020, Menzies et al. 2021). Discussions and outcomes of the 2019 workshop led us to explore a handful of themes further: 1) best practices for braiding knowledge systems, 2) the cultural keystone species concept (with communities that were not part of the initial workshop), 3) Indigenous approaches to caring for the land, and 4) how to better connect communities, which is the focus of this report (see Box 1 for interview questions related to this theme). The other themes are discussed in separate reports that included the same research methods and communities (Bowles et al. 2022a, 2022b, Menzies et al. 2022).

Interviews

University ethics approval was obtained for this project from the University of British Columbia Okanagan (H19-01453), Mount Allison University (protocol #102582), and the University of Guelph (REB #20-10-014). Either semi-directed individual interviews or sharing circles (based on requests by participants) were held with members of 12 Indigenous communities, across so-called Canada, between November 2020 and May 2021 (BC - Heiltsuk First Nation; AB -Kikino Métis Settlement, Fort McMurray First Nation; ON - Magnetawan First Nation, Garden River First Nation, Wiikwemkoong Unceded Territory, Shawanaga First Nation, Whitefish River First Nation, Nipissing First Nation; QC - Cree Nation of Mistissini; NB - Elsipogtog First Nation) (Figure 1). These communities span several culture groups: Haízaqv, Métis, Plains Cree/Chipewyan, Anishinabek, James Bay Cree and Mi'kmaw (Figure 1).

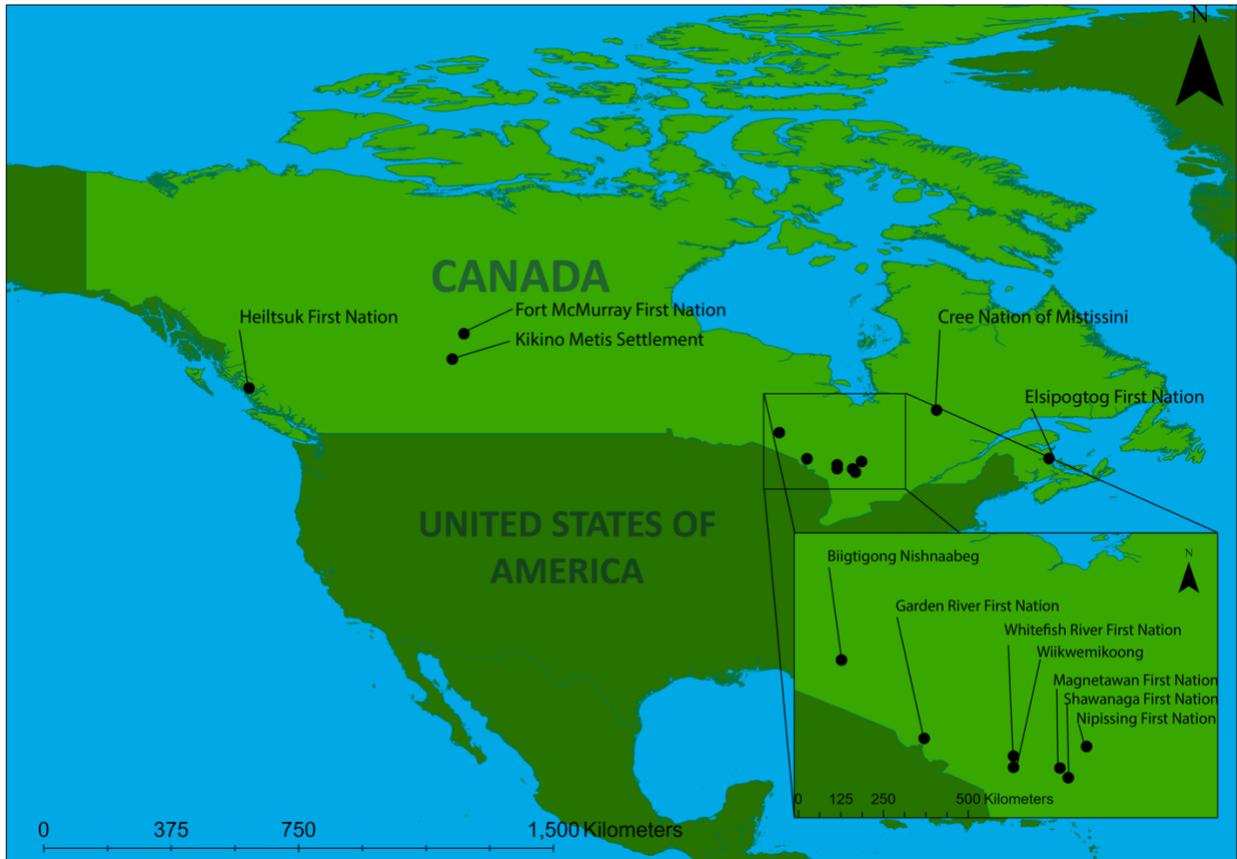


Figure 1: Map showing the communities where participants in our study are from.

We reached out to communities in which we had pre-existing personal contacts and research partnerships, asking if their community was interested in participating. To provide as much information as possible, we sent generic invitations with a project description, a copy of our consent forms, and the interview questions to 49 individual communities and to 5 larger governing bodies, either to their lands manager or other individuals who we knew or were referred to (e.g., Métis Nation of Ontario, Manitoba Métis Federation), to allow them to consider if they wanted to participate. An additional eleven Nations or governing bodies expressed interest, but either communication was dropped, timelines for internal applications were incongruent with ours, or community capacity was overwhelmed due to COVID-19. We initially planned to interview one Elder, one youth (aged 19-30) and one representative from a lands department (or equivalent) from each community, but several communities did not feel comfortable with this approach and, instead, preferred to have sharing circles (i.e., a knowledge sharing approach, Arsenault et al. 2018) and/or suggested a different number/breakdown of participants based on who they considered to have appropriate expertise. Therefore, we interviewed anywhere between 1 person from a community up to 12. We sent honoraria and tobacco to each participant as was appropriate or desired by the community interviewee (\$100 to each Elder and \$50 to each lands representative and youth) along with one tablet (Galaxy Tab A8) to facilitate virtual connectivity due to the COVID-19

pandemic. However, tablets were, ultimately, not used for this purpose and were presented as a gift to the community; when participants needed assistance with virtual connectivity, a community member facilitated this on a personal or lands department computer. Finally, it is worth noting that some interviewees explicitly stated that, while they were selected by someone in their community to participate, they were only representing their own views and not speaking for their community.

Transcription and Quote Tables:

We completed 27 interviews/sharing circles, which took anywhere from one to two and a half hours, with 40 participants in total, including Indigenous community members and non-Indigenous community lands managers (2 people). Free, prior, and informed consent was obtained at the start of each interview, and participants were informed that they could withdraw their content, not answer questions, or discontinue interviews at any time without consequence. Interviews or sharing circles were recorded on zoom (video and audio), saved only on the researchers hard drive, and transcribed by goTranscript (<https://gotranscript.com/>). Every interview transcript was read, corrected, and anonymized (unless participant wanted to be identified by name) by a single coder (JSK). Subsequently, a thematic analysis using inductive and deductive coding was completed on anonymized transcripts using NVivo software (<https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>). Two individuals (authors JSK and AKM) coded interviews based on pre-determined themes (i.e., CKS, weaving knowledge systems, community values, connecting communities), splitting the themes so both individuals coded the entire interview, selecting quotes that fell into only their themes of interest. Throughout the process, subsequent codes were added to each over-arching theme, as needed. Often, themes from one set of questions emerged in another. In these situations, coders and report authors discussed where best to place that content so that as many perspectives as possible were shared, and duplication of responses was minimized. Most content that is shared for a given theme, came from questions about that theme. Questions and responses discussed herein are a subset of the complete questionnaire, which addressed several themes. We have tried to reflect all of the themes and perspectives that were shared with us by selecting representative quotes.

Box 1: Interview questions about a knowledge network

- Are you interested in connecting with other Indigenous communities/Nations to discuss environmental monitoring/management/research (guardianship) programs?
- Is there a medium/method that could work best for you?
- Do you think a local, regional, or other scale for connection would be best (eg: Great Lakes region, treaty area, provincial, Canada-wide)?
- Would you be interested in connecting with other communities on very broad issues (eg: environmental issues) or more specific issues (eg: moose monitoring)?
- What sort of guardianship topics are you most interested in connecting with other communities about (eg: climate change, moose monitoring, conservation of medicinal plants, weaving ways of knowing, upcoming conferences in Indigenous environmental science, case studies)?
- Are you interested in being involved with networks on specific issues (ex: moose research) to connect Indigenous communities with government, non-government organizations, and academics to help foster collaboration and build partnerships in guardianship programs?
- Are there any networks or ways to connect that you already use to connect with people?
- Who do you think should be part of this network (e.g., chief and council, lands representatives, Elders)?
- Is it important who hosts the network/website? For example, do you have a preference for whether it is an NGO, NGO with Indigenous representation, Indigenous community or government?

RESULTS AND DISCUSSION

There was overwhelming support from interview participants for a platform that would allow connection and communication with other communities, reinforcing the clear need for more avenues to network, share, and learn from one another. Participants expressed the power of coming together as sovereign Nations, the collective benefits of reconnecting and sharing knowledge, and the value of learning from other communities' experiences, observations, cultures, and customs.

“Definitely. More minds, you know, a better outcome. What you're doing and what can we do? We can copy each other, or we can improvise. Yes. When more of us work together, we will make it better for everybody. Yes”

“I think nationhood is really important. I think that coming together and learning about each other is really important, I don't know, power in numbers kind of thing. As individual First Nations, I think it's important that we integrate with each other and share each other's knowledge”

“I like to hear the other Aboriginal groups, the other First Nations, what's their intention in their territory, what's their experience. What's their traditional knowledge, what's their cultural, you know? I always enjoy listening to other native groups and I've learned a lot from that. Then we can share our own experience in Eeyou Istchee and so on. I've always found them interested when we share the Cree experience with them, and then we in turn are very interested to hear from them, what they have to share. That's what my dream is all across Canada. I would be very interested to listen to.”

A few participants discussed the need to connect and share knowledge in the context of resisting the on-going effects of colonialism, one of which has been loss of knowledge sharing opportunities and nation-to-nation relationships.

“Since there was colonization on so many different scales, I think it's important that if there is Indigenous Knowledge that can be shared, that it is shared between communities so that we can contribute to that collective knowledge that may have been at one point common knowledge to everybody but may not necessarily be anymore.”

“We don't want to colonize the way that we do these things because that's what we're trying to move away from, but understanding that, say, this whole region was once connected

without anything else and they have their own laws, and they have their own systems, and they have their own way of approaching things, and the knowledge that remains of that is important to reconnect. If there is interest in doing so, I'm going to absolutely be very interested in making sure that I can connect that knowledge any way possible."

Many practical benefits of connecting nations were identified, including increased capacity to protect the environment and implement wide-scale monitoring programs if more people work together, and the value of learning from what others have done instead of starting from nothing. Many of these comments were specific to initiating or improving environmental monitoring programs within each of the participants home territories.

"We don't have to follow exactly what other communities have done, but we can look at their model or their framework and change it to what will work for us. We don't have to create something brand new. There's already a ton of great work out there. Let's learn from each other and improve together, and let's implement similar monitoring systems along that whole territory so that we can have similar reporting and have a wider view of what our treaty territory's health looks like... there's so many initiatives happening. I think that an online resource where you can click and then see where it is, and then be able to reach out to the community that way for someone that's doing the work I do, that would be the ideal very helpful scenario for my work"

"It's always nice to hear other stories, other approaches, and different outcomes that people have had for various different projects."

"I think we all need to work together and really leverage our knowledge systems and work together with Western science to really start protecting and becoming steward leaders of the world, essentially. Canada has bountiful resources. In one way the most efficient way of protecting them is working with the First Nations."

Overall, the consensus was that any platform that would create opportunities to network with more minds and access a greater knowledge base would result in better outcomes for everyone and for the environment. Once identifying a high level of interest, we explored more about what this platform and/or network could look like.

Best Platform or Medium

When we asked participants whether there was a 'platform' or 'medium' that would be best to connect communities, there were mixed responses. Many participants did not specify which platform would be best, simply expressing that they were interested in networking, regardless of what it looked like, or explicitly stated that they were in favour of both online and in-person events (10 participants), recognizing that both have benefits and challenges. The rest specified that they were in favour of either online platforms (3 participants) or in-person workshops or gatherings (8 participants).

Advantages of Online Platforms:

Participants highlighted the capacity of online platforms, like a website or social media, to keep community members informed and engaged, particularly youth, and to reach a large geographic scope. Some emphasized that online platforms have become particularly useful during the pandemic (COVID-19) and have helped people connect when in-person meetings were not possible. So, building online platforms that would help people access existing information and/or communicate with communities when in-person gatherings are not feasible was of interest to many.

“Websites are important if we're talking connecting like lands, departments and active like governing bodies, of course, I think a website would be excellent. It's interactive and it's a great way to showcase what everybody's doing with links and resources, and also multiple means of communication.”

“Yes, probably things online, as much as possible, if it's websites or things like that, or articles or newsletters that might be out there, or things like that that people can contribute to, or websites that can-- anything that would be a source of way of sharing information”

“I would definitely be down for a website, though. I think there is one, maybe not, but a website that would show Guardianship programs. I think there is one. I think I've seen it, but there's like a list. And can see on a map like, "Oh, look, there's an initiative happening in Magnetawan, and that's only a two-and-a-half hour--three-hour drive, I don't know, from Garden River. We could learn from them. They're in the same territory, that kind of thing where we can connect within that medium.”

“Facebook or anything on social media like that, that would be perfect, like a group chat or something.”

“I use Facebook, [chuckles] but honestly, Facebook, sometimes, it can feel a little informal when I think we need to be having these

conversations as friends and as colleagues but also on a very formal scale. I know sometimes, things can get shared into Facebook groups that you're like, "Oh, this isn't really relevant," and then people stop paying attention. Something like that should be avoided if this connection or network were to happen. I haven't really used Slack too much, but I've heard very good things about it, and different connections platforms like that where you're able to both chat but also have meetings and have face to face, or face to face virtually. [chuckles] I feel like we are right now over Zoom. Incorporating some of those technologies would be really cool."

"I think right now the biggest struggle is everything's going virtual, so it's about getting those different platforms out to the community and having them understand the use of it. Right now, I think it's a great opportunity to be using websites and just different web formats."

Challenges of Online Platforms

While online platforms can be useful, it was noted by many participants that internet connectivity can be an issue in many remote communities and that many people do not have personal computers or cell phones, which makes it difficult to access and download online resources.

"Even within our community, there're so many people that either don't have a cell phone, or don't have a computer, don't have Wi-Fi. One of the essential things for communicating, when not face to face, isn't available."

"I like to do things in person. I'm not too familiar with the modern technology. I don't have internet and so on and so on. I don't have a laptop, I don't have a computer. I have very small knowledge about the computer system. I continue to be much a traditional person."

Advantages of In-Person Gatherings:

Some participants highlighted the capacity of in-person gatherings to encourage ongoing discussions, to learn about each other, and to share sensitive information and knowledge. While many acknowledged the benefits of online spaces, particularly with COVID-19, they spoke of the irreplaceable energy and opportunity to form relationships in-person that does not translate to online platforms. These sentiments were especially true for Elders who may not be as familiar with technology and feel more comfortable sharing knowledge in person. Suggestions for in-person gatherings included annual or semi-annual meetings, conferences, and workshops with breakout sessions.

“I like the energy that is generated when two people are in the same room talking about the same thing, and so for me, it's a lot clearer and it's-- what do you call it? It generates energy.”

“We find when there are knowledge keepers and Elders, when they're in person meetings, it fleshes out more. They feel more comfortable to talk as well.”

“I would say annual meetings or semi-annual meetings. First of all, start with a conference and then you go to semi-annual meetings. Then you can start monitoring and have something to base things on. I believe the more we get to know each other, the more we get together, the more we get to know about each other, but I don't know what to do after that”

“Before COVID-19, I've always liked the face-to-face discussions. I like to see who I'm talking to. I like to hear who are my audience. I like to see who's speaking. We can share some thoughts and ideas. I like face-to-face conferences. I like workshops also. The breaking into workshops. Then the workshop's special attenders to report to main conference delegation. I like that system very much, because in the workshops you get to hear more people. When we have one main conference, you don't get to hear all the people, not everybody gets a chance to speak.”

“A lot of the knowledge holders and elders like to meet in person, so it's providing a regular environment for those interactions to occur with youth presence.”



Advantages of Multiple Platforms:

Many participants emphasized the value of having multiple forms of communication to increase engagement with a given initiative and/or provide opportunities for everyone to participate, regardless of their preference of platform and/or experience with technology or social media. There were also recommendations to pair youth with Elders to facilitate use of technology and allow in-person connection in that way to build relationships across generations.

“If the barrier is an Elder that doesn't want to or doesn't know how to use all of these newer things, or they only want to stick to one social media like Facebook or Twitter or whatever, having them paired with a youth that's interested from their community could be really cool, whether that's like volunteer hours for high school or whether it's a small wage, like part-time work or something. That could be a really interesting way to help connect Elders, but I understand that there are some communities where it's not even like, "Oh, they don't want to use a different social media." It's like, "Oh, the internet here only works once a month," or whatever. Meeting in person would be great, but using technology, if possible, would be cool as well. Incorporating both!”

“I find, even just for myself, websites -- you kind of forget about them unless you're really trying to -- I feel like at least on Facebook, it's there, it's going to pop out the notification where a website might not. So I think, yes, almost, maybe having a basic website that connects to some social media things, and then, maybe a newsletter or something. Definitely multiple forms of communication are required if you want the best input.”

“Even within our community, there're so many people that either don't have a cell phone, or don't have a computer, don't have Wi-Fi. One of the essential things for communicating, when not face to face, isn't available, so you're trying to communicate through a whole bunch of different forms of things, either newsletters to their door, on Facebook, email. There's almost so many different forms, but you're only reaching bits and pieces.”

In general, it seemed that there was support for both online platforms and in-person gatherings for different reasons, so combining online initiatives with in-person workshops, along with other forms of communication (e.g., newsletters, social media, radio) might be the most efficient and inclusive way to increase communication across communities and ensure all perspectives are included.

Focus of Network

The majority of interview participants were interested in connecting with others on a variety of topics related to climate change, environmental protection and restoration, environmental governance, and cultural continuity. Some of the specific suggestions include:

“Conservation is one, and it's just beyond how we're going to protect and conserve, but how we actually are on the ground.”

“Protecting the land. Protecting the animals that we have left and setting up necessary, for instance, caribou.”

“Water. Water is very, very important. It's important for us. We have all our water and also water is so very important.”

“Definitely climate change. That's one, I think that on a much larger scale for me, mining, development in that way, but mining in general. We know we all face that across Canada. There's different provincial regulations for everybody, but we all still follow federal regulations on all of that as well, too.”

“I guess for myself maybe more on a larger scale, maybe perhaps larger-scale issues, if it's climate change, we're all affected by that, but in different ways.”

“... adaptation and mitigation climate change plans and resources”

“I think cultural and traditional knowledge transfer”

“... how to preserve our culture as well as preserving our traditions and cultural lifestyle, which would include preserving our animals and traditional plants that are really important to our community.”

“Community-based [monitoring] would be my actual one that I would want to learn the most about. I think it's Magnetawan that's doing species at risk work. That, I'm like, "I want to learn about that.”

“I would be interested and willing to work on anything related to wildlife or community science or season science or stewardship as well.”

“I worked for the fisheries, so always interested in that. I feel like I'd be more interested-- I don't know. I just like learning about different things and different opinions about our different topics myself. I'd be open to anything really. Well, I'm looking at the

examples, climate change, yes, moose monitoring, yes, conservation of medicinal plants, yes. I think I'd just be interested in anything in general."

Demonstrated by the broad range of topics suggested above, a few participants emphasized that, even if a specific topic was chosen to be the focus of an online platform or in-person workshop, discussions always become broader and more holistic because everything is interconnected.

"I think even if we did choose one particular topic, I think it's still going to end up very holistic, and we're going to end up looking at everything that those affect anyway. Maybe for the sake of keeping things maybe a little bit simpler, maybe having a topic is important because, again, we're going to go full circle, but then leaving it open could just be like, imagine a never-ending circle of conversation."

"Every topic that we usually talk about when we meet all together is usually interconnected. When we talk about everything, but once we talk about one subject, it usually leads to another subject that is connected to that. I think about the broad."

Source of Information, Guidelines, and Case Studies

Many participants identified a need for more practical or "action-oriented" forums, where they could learn from ongoing initiatives in other communities and apply lessons learned to their own community initiatives. Whether the platform itself provided this information or a point of contact for every community, both were seen as useful. Something like this would help communities learn from each other's experiences, observations, perspectives, challenges, and successes, instead of repeating past mistakes and doing everything independently.

"...it could be where people could deposit information and for First Nations- for all of society actually to tap into it, the generic information, at least. Confidential, of course wouldn't be available."

"... a registry place would be good to have because a lot of information gets shelved. All these studies get shelved and sometimes we go on and do another study that's already sitting up on the shelf or at least the main body of it. It's a great idea, I think, that that was pulled off across Canada how people contribute and donate to that central hub there would be good, for sure. It would be good for our young people to be able to tap into."

“Case studies would definitely be really cool and weaving ways of knowing specifically. I always try to think about different ways that TEK can be incorporated into Western science projects or vice versa.”

“I'd love to see more Indigenous-focused citizen science programs where they're actually contributing their observations and their sightings about whatever it is that they have observations about to a central repository where then, people can use that information to either make climate change observations or wildlife observations.”

“It could be where people could deposit information and for First Nations- for all of society actually to tap into it, the generic information, at least. Confidential, of course wouldn't be available.”

“There's seems to be a multitude of these guardians or groups and memberships and a lot of them. It confusing. I think that's a little bit of organization perhaps on those fronts need to occur. You're just separating people rather than uniting them, which isn't a very inefficient method”

“From being in community, even when the government is sending out stuff to the community, they just almost just send it out, it's not directed to certain people, they just send it there and hopefully, maybe it'll get to the right person. So almost like creating that point of contact, if you're creating that, I think it would be super beneficial because then people can figure out who to get in contact with because sometimes it can take months or even years to try to get in contact with someone.”

“I'm glad that this research is taking place, but I think about the past too. I wonder what kind of research had taken place in the past. I know there's been many studies done in Aboriginal communities. I wonder if there's some information out there that can be useful to this research and not reinvent the wheel again, not to duplicate the work. I'm just wondering how much research has been done in this area and what information is available out there that could help this research. It's my own thoughts.”

“If we're bringing in someone into our community, I want to learn how their relationship-building went or what experiences they had that they learned from. I would like to know that stuff so that we don't have those same hurdles.”

“It's just there's so many initiatives happening. I think that an online resource where you can click and then see where it is, and

then be able to reach out to the community that way for someone that's doing the work I do, that would be the ideal very helpful scenario for my work."

Many topics were suggested, all related to the environment, but some were more specific (e.g., water, recycling, caribou) while others were broad (e.g., climate change, conservation, citizen science, case studies of monitoring initiatives). Overall, it was clear that there is high interest in learning from others perspectives and experiences related to environmental monitoring, research, and conservation.



Geographic Scope of Network

We conducted interviews with 12 communities across 5 provinces, ranging from coast to coast, and asked whether an online platform or in-person network should be localized or include all nations. Overall, there were mixed reviews. For some, it was important that connections among communities were with local communities since it might be difficult to physically bring people together and find common ground among distant communities due to different experiences, cultures, priorities, and needs.

“I think it all depends on what it's for. I think it'd be nice to have experts in there, on a regional level. Even nationally, it's fine too. Like I said, it all depends on where their expertise is. I don't think it's beneficial, and there's also a lack of interest if there's somebody coming from the east to come teach us something here at home. It doesn't make sense. They're two totally different worlds that we're looking in really, different landscapes, different teachings.”

“It's so different down there. It's so different over there and over there. The regional bodies have always been kind of an issue because it's always hard to represent everybody in those regions when everybody's so different and so unique. For something like this, it might be a bit easier to do it if it's like First Nations focused in what's happening within those regions. It might work when it's-- It's almost a challenge to represent everybody or the bigger the region gets.”

“You know why we have a problem with the garbage in our community, in the surrounding community area? Is we work so much on regional environment issues that we forget to live in our community, you know? We need to concentrate on the local issues. Not only concentrate on regional. For educational purposes, sure, it's important to get involved in regional level, regional issues, but you must not forget to look at your own community, your hometown issues. I like to do both if at all possible.”

However, while the priorities, needs, and experiences of communities are diverse, some participants identified this as an advantage to connecting across broader geographic scopes; to learn from the similarities and differences in perspectives and contexts. Others argued that, while we are different, we all share a common goal and should work together, regardless of geography and cultural identity, to protect the environment.

“Yes, definitely, and all scales. I even like learning about ones that are international and see or hearing the similarities and differences of what they're doing. It's just always great to learn from other people.”

“I definitely think it's something that's going to have to come to fruition though and especially if we're looking over species that have broad ranges. They don't just conform to human boundaries. The regional approach is a way forward and probably the only successful way.”

Due to the advantages and disadvantages of both localized and broad scopes, some participants suggested a mix of both, providing opportunities to connect with communities all over, but an opportunity to ‘zoom in’ and connect more locally, too.

“I think it would be nice to have one for like community to community, but then also a broader, more like a public type of opportunity as well.”

“I think you almost need all of them. But, I think sometimes, if it's too big you're going to get lost in it. Sometimes there are issues from BC... you can use them as an example, but I think if I was trying to solve issues here, I'd want to be able to connect with the local First Nation.”

“There's not a lot of examples of how to incorporate Indigenous Knowledge and Western Science, and so seeing what other groups can do or other communities can do on a nationwide scale is pretty cool and would give people--Even if you can't mimic the exact same thing, there might be ideas that you could borrow from. But at the same time, working with local organizations or communities has its advantages because then, you have a local contact or someone that you can just drive down the road... they're able to help you with your specific application or with getting your thing running, and they're able to share contacts with you and things like that. Everything from a local to a nationwide connection would be pretty cool. Correct me if I'm wrong, but I think if you have different groups within Slack, you can have subgroups as well, or sub-teams or sub-channels, or whatever? That's another part where that kind of connection would work.”

Overall, there were mixed reviews on what would be the appropriate scale, but a common thread was that sharing with and learning from communities that have common needs and priorities was the most helpful, whether that is considered to be more specific needs and priorities that local communities share or broader priorities, like saving the environment, that we all share.

Who Should be Involved

The majority of participants were interested in connecting with as many people, representing as many organizations, as possible. The more people involved, the more opportunities to hear diverse perspectives, learn from different experiences, and access useful resources. However, it was noted many times that Indigenous participation was important to make the initiative more credible and ensure it is founded in good core values.

“We'll work with anybody”

“I'm always for inclusiveness. I think once you start excluding people it's never helping the problem”

“It doesn't really matter [who is involved] as long as there's some Indigenous participation in. It makes it more credible from our point of view”

“I think as long as it still has good core values and it's not going to be taken over, I think being inclusive is the best way to do it. Especially because there are a lot of allies and very helpful people out there that aren't from a community, and a lot of resources that I think communities would also benefit from and be happy to have. I think having both in there, as long as it's not getting overwhelmed by the wrong sort of things.”

Most participants were interested in a network or platform that was meant for more than just Indigenous communities, depending on the information being shared. Most were supportive of academics and NGOs being involved or being able to access information being shared, as they saw these organizations as interested in partnering with and learning from Indigenous communities. There was a bit more hesitancy about government involvement due to their history of favouring Western science, but, at the same time, there was a desire to communicate and network directly with people who make decisions who are, often, in government.

“I think when it comes to academics, they would likely be so interested in sharing and learning all that they can. I find that a very good platform because it's very respectable. That's my word, I think "respectable." I think everybody can get behind that and can respect and understand where academics come from, what your role is.”

“Academics, yes, I find a lot of the work academics are doing is helpful, especially with an evolving academic field right now. I

know that there's a lot of massive changes happening in academia which I'm so excited for."

"I always talk about the importance of First Nations partnering with academic institutions, because they have knowledge of the land. They have concern because of the knowledge of the land and they're reaching out to a capacity that can help answer questions in a more intricate way that can be quantifiable and used in court, or used in conjunction with functional mitigation planning."

"Because I'm a traditional user of the wildlife, I'd like to talk to people that are in decision-making regarding it"

"... NGO with Indigenous representation"

"No offense to the government, but maybe not so much just because they're using a lot of the Western science"

A few participants emphasized that grassroots people - the ones on the ground, doing the work, building relationships with other community members - should be included, as opposed to just the elected representatives and/or decision-makers.

"I think that the grassroots people are the ones that should be connected"

- Sue Chiblow

"I believe that members [should be involved], why would we leave it up to leadership when we have a whole community to be involved and play their part?"

Generally, participants were in favour of inclusion in order to learn from diverse perspectives and experiences, and access as much information as possible, as long as Indigenous inclusion is prioritized.

Who Should Lead

In addition to discussing who should be included, we asked whether it was important to consider who was responsible for overseeing operations and/or making decisions regarding a knowledge sharing network and/or platform. Many participants emphasized the importance of having Indigenous oversight of an online space, both in terms of who creates the platform (i.e., making decisions about content, platform, scope etc) and who oversees the general operations of such a network (i.e., ensuring it remains relevant and functional). In all cases, participants emphasized the need for such a platform or network to be driven and/or defined by Indigenous Peoples. Different ideas included having a First Nation manage the platform and/or having a board of directors or advisory circle that includes Indigenous Peoples.

“I think it should be Indigenous First Nations driven and managed. Taking inventory, we have the people in our ranks that are educated enough now. We've been there for some time. We've been ready for some time. I think it's time for our young people to take over, to manage that and to take inventory of the information that's been around for some time and the latest information that's available and that technology. It should be on a First Nations community and managed and driven by First Nations and owned by First Nations, all those that contribute to it. I'm talking about the registry place for the information that would have been gathered, that's available.”

“It should be a board of directors that are half Indigenous. Then half non-Indigenous that represent tourism stakeholders of similar things.”

“I think it would be important that it was preferably an Indigenous-run or NGO. That doesn't necessarily have to mean that every person that works there is Indigenous, but definitely, at least an Indigenous board of Elders, for example, at least Indigenous people that are driving it, so it's mostly driven by Indigenous people and defined by Indigenous people. Definitely not a government website. It would be great if an Indigenous community was able to host the website, but it doesn't seem fair that they have all the wide hosting responsibilities.”

A few participants emphasized that, long-term, an online platform or in-person network would have to be managed by someone whose job or responsibility it would be to maintain momentum and ensure the content and discussion are relevant to current priorities. Without a person like this, a website, social media platform, or in-person network could lose momentum or become irrelevant over time. Some ideas were to have a paid employee, specifically a person in a position of relatively low turnover, to increase continuity and someone at an external organization (e.g., university) to not increase work for community members.

“Within the community, people also change too and political direction changes within the community too. So - that changes. I think, yes inside of the university where you have the whole program of students that are always coming into that program and all those people caring for that website.”

– Sue Chiblow

“I think it [a Health Canada webpage] was funded by government and then it died out when a new government comes in and decides to change what the priorities should be.”

- Sue Chiblow

“Particularly for communities with lower capacity – it is important that this facilitates communication and on-the-ground efforts, as opposed to adding work to their plate. Which is maybe another reason that someone not from the community is responsible for running it.”

“For us to be able to share what we learned from different things or whatever else is always-- as much of that, that we can do is great. But as long as it just doesn't add on more work [laughs]. That's the only caution I would have is in some cases, it does end up causing-- or not causing, but more work to do with that or pulling you away from your job to do that. That's the only area I'd be able to cautious about.”

One individual noted that people responsible for overseeing an initiative like this should be appointed to ensure they are representative of the needs of the audience it is going to serve.

“You would obviously want somebody who's appointed, has to be representative. I don't think any one person or any one group approach is a very successful one at all.”

The two main messages received from responses to this question were that Indigenous oversight is key, and someone has to be in charge of running the network to make sure it does not disappear over time.



Examples of Existing Platforms

Our final question was whether interview participants had existing platforms or networks that they used to collaborate and connect with other communities and/or organizations, or to learn about environmental initiatives going on around them. Many participants belonged to regional networks, organizations, or councils that help them connect with others and learn about ongoing initiatives in their area.

“The organization we belong to here, the Anishinabek, have people that are charged with the responsibility of helping communities deal with environmental issues, with mining issues, forestry, trapping, fur harvesting all those issues. They're like a hub that can gather information, that can share information with the communities or connect you to someone that has the information.”

“We've got a lot of networks with the trappers around the area”

“We have Athabasca Tribal Corporation here, where there's five chiefs from every reserve that get together there, but we never get a report on those meetings that they have.”

“Because we have those connections already regionally, within Eeyou Istchee, our connections are there. All us LEAs [local environment administrators] meet on a monthly basis just to inform each other informally just what's going on and what's someone facing and how we can help each other out or things like that, to spark ideas or being more aware of what's going on within our whole territory.”

“From my experience, when it comes to grasping the attention of our youth, is that usually, you utilize a familiar entity, like the Cree Nation Youth Council, the Grand Council. Those are the two big groups that usually people look forward to hearing from, but there are other entities in the Cree nation that people look up to.”

A few participants mentioned organizations that they have worked with in the past and have connected them with other environmental professionals and/or useful resources.

“Shared Values Solutions. They work with us on a couple of different things, and I know they work with a bunch of other communities. They're always sharing with us different websites and things that, because they work all across Canada with different communities.”

“... the Georgian Bay Biosphere”

Other participants identified workshops, training opportunities, and/or conferences that they have attended, which are a bit larger in scope, but helped them meet other people working on similar initiatives as them.

“The Anishinabek are having their workshop next week here, a virtual workshop on the environment and economics and everything like that which they have once a year. They're a good resource for the communities, for especially new people that have come along that are involved in resource management”

“I know they do have training sessions where it's more regional, where they have like all the coastal guardians from Alaska down to Vancouver Island get together and do training opportunities together”

“... definitely conferences and stuff like the Magnetawan conference. That's a really good one.”

“I went to the AFN [Assembly of First Nations] Climate Change Gathering in Whitehorse”

“There's also Ontario Indigenous Training Networks. That shares training about any-- It's pretty broad on the Indigenous topics that it covers, and you don't have to be Indigenous to join that network. It's also available for not Indigenous people that are just interested in learning more. Then, I'm also a part of the American Indian Science and Engineering Society, AISES, and they have a Canadian branch called-- I don't know how to pronounce it, but I think it's CAISES basically. That connects different Indigenous scientists and engineers, anyone in STEM really. They have an annual conference that I haven't been to in a couple of years, but they have also a-- that goes around to everybody who's connected to that network as well.”

Finally, other participants identified websites and social media platforms that offer resources, information, and opportunities for discussion.

“I do look at the AFN website and the COO [Chiefs of Ontario] website to see what they're up to every now and then.”
– Sue Chiblow

“There's a guardianship program somewhere in Canada and their website, which I, of course, cannot find right now. It's something

that I use to stay connected. The Indigenous Guardians Toolkit, that's the one. That one has a map."

"I run my own Facebook page, it's called Season Everything with Love. It's real people, real stories. People come on there and tell their personal story. It used to have a voice with the guidance of elders and community. What I did was, I got a hold of some youths and they came on and they started the conversations. Then the elders, knowledge keepers, they've come on and talked about those hard, hard subjects like grief and loss."

"In Ontario, my colleagues actually started a First Nations bat network, so they're using that network to talk with different First Nations across Ontario, have them monitor bats, and how the bats are doing, part of that network. Yes, they use Facebook."

Many platforms and networks exist, but all participants were interested in something more centralized, where all of these networks and information could be consolidated and conversations could be made easier.

Ethical Considerations

Throughout our discussions with interview participants, the need for a safe and respectful space for knowledge sharing was brought up a number of times. Depending on what the knowledge-sharing platform becomes, it is important to ensure that the right people are involved; only organizations and individuals who are willing to listen, learn, and who understand the core values of respect and reciprocity.

"We want to make sure that trustworthy bodies, ones that have an understanding of the significance behind this work, are the ones working with First Nations. We want to make sure that they're working with the First Nation for the First Nation and not for themselves."

"However, it's very important that only people and organizations that understand the nature of meaningful relationship-building and reciprocity should be working with these communities are all they're doing is continuing to damage a system that is trying to bounce back from what we've already done."

"...if NGOs or governments or other orgs want to be involved in just making sure that they know the time and place to be involved and if a conversation feels like it wants to be had outside of that political or that governmental realm, then there's the space to do that too."

Others emphasized the complexities of data ownership and privacy when it comes to sharing Indigenous Knowledge, especially in online spaces; not all knowledge is appropriate to share online or at all.

“I know when we're talking about First Nation knowledge, or I'm going to try to say not privacy but knowledge ownership, like data ownership, that's definitely a thing when it comes to First Nations. I guess I'm coming back to that share or protect indigenous knowledge, but there are some pieces and some things that we would need, to protect.”

“I think a lot of people were just concerned about how the data is going to be stored and stuff like that. We made sure to let them know that nobody is going to know this information anyway, but still, I feel like a lot of people probably were hesitant in sharing it.”

“Like I said, the one thing is that we tend to keep some things or some knowledge to our own people. Other than that, many of our Elders are open to sharing when it comes to taking care of our environment and taking care of the land. I guess what I'm trying to say that, I don't want to make it sound too complex when we try to share certain knowledge and certain practices that we do. We share as much as we can. At the same time, there are some things that we keep to ourselves because with the long history that has happened to our people, like it happened with the residential schools and basically that dark period for our people has created a lot of distrust when it comes to outsiders. I think that was one the difficulties that has happened when it comes to sharing knowledge with the Western society.”

“Some of this information is also-- like I won't go into exact details because I think that's my traditional way of knowing. It's sort of sacred in that way, like it's not just for everyone to know in a sense.”

These issues led to some apprehension about using online platforms and a desire to keep a network more localized and specific to Indigenous Peoples. However, most participants agreed that having Indigenous oversight (e.g., an Indigenous advisory circle) would help ensure knowledge was being used in a *good* way and would ensure core values were at the forefront of the network.

SUMMARY AND RECOMMENDATIONS

Interest in a platform and/or network that would facilitate communication and collaboration across nations was echoed by participants from all communities. Participants highlighted the strengths and challenges of both online platforms and in-person gatherings, with a mix of both likely being the most effective way of connecting with people of different ages, locations, and interests. Online platforms (website, social media accounts, zoom calls, webinars) could provide repositories for reports, project information, and data, a space for advertising events more broadly, a space to host online events, and are likely more effective at engaging youth (especially social media). In person events (workshops, conferences, gatherings) were seen as better for knowledge sharing, story telling, personal connections, and laughter, and are likely more effective for Elders and for sharing sensitive information. While participants had diverse perspectives on the specifics (i.e., topics, geographic scope, best platform), there was a general push towards inclusion - inclusion of all environment-related topics, types of people, and organizations - as long as there was strong Indigenous oversight.

Virtually all participants emphasized the need to ensure Indigenous Peoples, knowledge, values, and priorities are at the forefront of any network that is created. We tried to emphasize these perspectives by creating **four principles** for ethical, nation-to-nation communication:

1. Initiatives should be **Indigenous-led**
2. Any network, platform, or group designed to bring people together should be **founded in core values**, like respect and reciprocity
3. **Protect Indigenous Knowledge** through equitable data ownership and privacy protocols, and by asking Knowledge Holders whether/how their knowledge should be shared
4. Information should be physically, financially, and verbally **accessible**

Based on insights from these discussions, we provide **six recommendations** for anyone interested in creating a platform to enhance communication, collaboration, and capacity building across nations (see Appendix 1 for our progress on creating a knowledge sharing website and fulfilling these recommendations):

1. A **combination of online and in-person** knowledge-sharing and capacity building initiatives would ensure maximum engagement, regardless of age, access to technology and Wi-Fi, and geographic location. For example, a website could be used to store resources and post events, social media can help promote it, and in-person events can be planned through these platforms to connect and share knowledge.
2. The **theme of the platform/network should be more broad than specific**, as most environmental issues are interconnected and lead to broad discussions (e.g., climate change, conservation, environmental governance, and justice). There was a lot of interest in a focus that is action- or solution-oriented, describing on-

the-ground initiatives (e.g., monitoring methods, citizen science) that communities can learn from and apply to their own needs and priorities.

3. The **geographic scope should be narrower than it is broad** to ensure environmental concerns and contexts are comparable. If online, there could be an option to “zoom in” to refer to neighbouring nations with similar environmental concerns and “zoom out” to gain broader, more diverse perspectives. Conversely, in-person initiatives may necessarily be smaller in scope, due to logistical challenges of gathering across larger geographic distances.
4. **Indigenous representation should be prioritized** in the conception, design, and maintenance of the platform/network, perhaps in the form of an Advisory Circle with youth and Elders on it.
5. Ensure that, regardless of platform (online or in person), the **network is a safe and respectful space**. Find creative ways to ensure all those who have access to sensitive information (i.e., Indigenous Knowledge, local observations and personal experiences) understand their roles and responsibilities. Individuals who share knowledge should be involved in discussions about what, where, when, and how it is shared.
6. **Identify an individual or organization who will be responsible for maintaining and promoting the platform/network** long-term to ensure it remains relevant.



WEBSITE ACTION PLAN

Stemming from the insight and recommendations shared in the body of this report, our research team decided to create a website as a platform for knowledge sharing, collaborating, and capacity building across communities. This initiative is funded by the University of Guelph Institute for Environmental Research and Magnetawan First Nation.

Our website will be called “*Weaving Ways of Knowing for the Environment*”. It will focus on the broad theme of weaving ways of knowing in environmental monitoring and management with the intent of sharing resources and case studies that anyone can learn from and apply to their own needs and priorities. We hope to include an interactive forum where people can ask questions, share resources, and post information about workshops and training opportunities. We have not limited the geographic scope, but hope to provide case studies and resources that are useful and local and broad scales.

The website is being created and maintained in partnership between the WISE lab (led by Dr. Jesse Popp) and the Magnetawan First Nation lands department. Together, we will make decisions about how to create an online space that is both culturally appropriate and ethical. First, we will declare the positionality of the research team, what our intentions are with the website, and the roles and responsibilities of viewers once they engage with knowledge shared on the pages. We have also hired Indigenous artists to create visuals and a logo that will be central to the website and are currently brainstorming ways to add other cultural elements, particularly language, music, and prayer.

As we progress with the development of our website, we hope to:

1. Prioritize safety and cultural relevance of our online platform.
2. Connect the website to social media to increase the reach of the information we share and increase engagement with the interactive forum, potentially increasing future in-person opportunities for all those involved.
3. Grow partnerships and oversight beyond our research team, to ensure engagement is high and our content is broadly relevant. We are in discussion about the possibility of having an ‘advisory circle’ to review an initial version of the website, to provide feedback on aesthetics, content, and general appeal of the website.
4. Expand to other topics of interest, as people suggest resources and ask questions in our interactive forum. We could expand our website content to include specific topics of interest to our viewers, like water, cultural preservation, and particular species.



Figure 3: The logo for the *Weaving Ways of Knowing for the Environment Website*, expected to launch summer 2022. Designed by Rachel Bach (@rachylu.art on Instagram).

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