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Zaagtoonaa Nibi (We Love the Water): Anishinaabe community-led research on water governance and protection

Abstract

This paper presents Indigenous community-led, collaborative, and community-engaged water governance research with a First Nations community in the Georgian Bay and Lake Huron region in northeastern Ontario, Canada. The methodology draws on Indigenous approaches to understanding and developing knowledge and is designed to build community capacity in research and in water protection and governance. This approach recognizes existing community strengths, including traditional knowledge, experiences, perspectives, and associated cultural perspectives and values, laws, responsibilities and lived experience in relation to water. Results identify and contextualize community-held responsibilities and legal principles pertaining to water that support culturally relevant water governance and strategic planning. By synthesizing and extending previous water protection initiatives, this research meaningfully supports the community's position and leadership on water security and governance. This, in turn, strengthens Indigenous water governance and sustainable water governance broadly as Indigenous understandings and approaches to water are holistic and concern relationships with and responsibilities to all of Creation.

Keywords

Indigenous water governance, Indigenous research methodology, Anishinabek nibi giikendaaswin (Indigenous water knowledge), Anishinabek nibi inaakonigewin (Indigenous water law), community-led research, collaborative research, Great Lakes

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In global, national, and regional water assessments, climate change is predicted to intensify existing water security conditions (UN World Water Development Reports, 2014-2021). By 2030, the world is projected to face a 40% global water deficit under the business-as-usual scenario (UN, 2015). Indigenous Peoples have been engaged in water-related stewardship and dialogue at multiple levels (see Craft, 2018; LaDuke, 2020; Tlatokan Atlahuak Declaration, 2006). However, in the absence of state recognition of Indigenous rights to water, exclusion from decision making processes, and the continued exploitation of Indigenous lands and territories, Indigenous Peoples will face on-going struggles for water security (Conroy-Ben & Richard, 2018; Lukawiecki et al., 2018; UNESCO, 2006). Threats to the very survival of Indigenous Peoples continue, despite the establishment of international mechanisms to protect human rights.

In Canada, Indigenous Peoples face multiple water crises. At the time of writing, there are 52 long term drinking water advisories affecting public water systems on First Nations reserves (Indigenous Services Canada [ISC], 2021). Commitments from the Government of Canada to end long-term drinking water advisories in First Nations reserve communities have translated into substantive budget allocations to build, improve, operate, and maintain on-reserve water and wastewater infrastructure (ISC, 2020). While some progress has been made, federal and provincial sustainable water governance efforts continue to fail in spectacular fashion (Lukawiecki et al., 2018).

For example, Neskantaga First Nation, located 450 kilometers north of Thunder Bay, Ontario, like many other remote First Nations communities across Canada has struggled with access to safe-drinking water. The community is “home to Canada's longest standing boil-water advisory,” having been without safe drinking water for more than 25 years (CBC Radio, 2020). Children born in the community have grown into adults never having had access to safe drinking water in their lifetime. Making matters worse, on October 19, 2020, “an oily substance was discovered in the reservoir”, forcing the community to shut down its water treatment plant (Porter, 2020). The water was later found to be contaminated with hydrocarbon. With no water, the First Nation community of roughly 300 people had to have an emergency evacuation. Through this crisis, less than 20 people remained on the reserve. This current crisis is part of the ongoing water crisis in the community. In the early 1990s, the community’s filtration system was improperly built and since then the federal government has spent \$609,000 on providing bottled water for the community instead of solving the crisis with their water system (Edwards, 2019). Prime Minister Trudeau promised to end First Nations boil-water advisories under his 2015 election platform and the community was promised that it would have a working water plant by 2018, yet the community is still living without access to safe drinking water. Neskantaga First Nation has not had access to safe drinking water for well over 25 years; now, with the current water crisis in the midst of a global health pandemic, it is uncertain when they will be able to return home and have their basic human rights met. On account of serious, ongoing, and compounding infrastructural, jurisdictional, policy, and regulatory gaps, chronic water insecurity remains a reality for First Nations across Canada.

Provincial and federal government provisions to improve the quality of drinking water on and off First Nations reserves have proven inadequate. The Department of Indian Affairs and North Development (DIAND) controls funding formulas, not just for drinking water on reserves, but also for a broad range of public works such as wastewater systems and roads and bridges (McCullough & Farahbakhsh, 2012); consequently, drinking water must compete with those other services for funding. The funding formula reinforces a top-down and one-size-fits-all decision-making structure that is guided by federal frugality, is unable to adapt to the local context, and creates vulnerability for drinking water services as they are subject to external evaluation (McCullough & Farahbakhsh, 2012). Government priorities come first. In Ontario, where the research is situated, most First Nations are located outside of Source Protection Regions, watershed units mandated to develop Source Water Protection (SWP) plans after the 2000 Walkerton drinking water contamination tragedy (Collins et al., 2017). Where First Nations do participate, SWP planning processes and implementation lack both regulatory oversight and the required funding, and Indigenous traditional knowledge and cultural values are not meaningfully considered within the Western scientific-and-technical knowledge-based SWP paradigm (Collins et al., 2017). The same inadequate regulatory and financial infrastructure exists within the federal government's legislative framework for drinking water on reserves, the Safe Drinking Water for First Nations Act (SDWFNA), another settler-state assertion of jurisdiction over First Nations lands that violates inherent and Treaty rights. As a result, First Nations have inadequate resources to support on-reserve water and wastewater treatment and they have little or no control over the contamination of source waters beyond reserve boundaries. In recognition of the inadequacy of the SDWFNA, in 2018 the Assembly of First Nation (AFN) and the Government of Canada agreed to a First Nations led process to co-develop new Safe Drinking Water and Wastewater legislation. Discussions are underway and through engagement the AFN has developed preliminary concepts that assert First Nation authority and jurisdiction (AFN, 2018). At a local level, some communities are taking steps to improve drinking water quality by developing and implementing community water and SWP plans (Arsenault, 2021; Collins et al., 2017). This is one dimension of First Nations leadership in water governance. As we show in this paper, Indigenous-led water initiatives are holistic in that they often strive to protect all waters, not only source water for human consumption (FNFC, 2018).

Achieving water justice for First Nations and sustainable water governance broadly will require more than a “techno-fix”, a term used to describe the dominant policy response to the drinking water crisis on reserves (Human Rights Watch [HRW], 2016; McGregor, 2012). The dominant model emphasizes improved funding, infrastructure, service levels, monitoring, assessment, and technical capacity (Office of the Auditor General, 2011; Phare, 2009, 2011). While improvements in these areas are urgently needed to mitigate some of the existing gaps impacting drinking water quality on reserves, this response reflects an “apolitical reading” of water management and water governance (Baijius & Patrick, 2019, p.1). It fails to address broader and deeply rooted threats to water, such as historic and ongoing industrial point source pollution and the diversion of waters for industry and hydroelectric development, threats compounded by climate change (Bradford et al., 2016; Emanuel, 2018; Sanderson et al., 2020; Thompson et al., 2014; Usher, 2003;). It fails to account for the violent system in which the drinking water crisis is produced and sustained, a system driven by the ongoing settler-colonial imperative to extract resources at the expense of life and lands, particularly of Indigenous Peoples, people of colour, and the poor (Chief, 2020; Neville & Coulthard, 2019; Sultana, 2018).

With a view to supporting Indigenous-led and sustainable water protection and governance, this paper discusses an Anishinaabe approach to water, water governance, and ethical community-based research practice. It advances an assertion, clearly made in the literature, that Indigenous perspectives should not merely be “incorporated” into existing scientific, policy, theoretical, or methodological frameworks (an approach that nevertheless remains prevalent in environmental studies and resource management) (see von der Porten et al., 2016; von der Porten & de Loë, 2014; Wong et al., 2020), especially in an era of “reconciliation” (Daigle, 2019; Gaudry & Lorenz, 2018). Indigenous knowledge cannot be uncoupled from Indigenous Peoples as decision makers (Latulippe, 2015a; McGregor, 2004, 2012).¹ Indigenous research methodologies will vary by Peoples, territory, and other contextual factors, but, as a paradigm (Wilson, 2014), elements of Indigenous research and principles of Indigenous knowledge are shared by Indigenous Peoples in many parts of the world. Our study is an application of one Anishinaabe approach. The need to apply Indigenous (and Indigenist) research methodologies in support of the Indigenous right to self-determination and inherent responsibilities to care for the land and waters is not only applicable in our study region, but across many Indigenous territories.

The focus of the paper is the research process with select results presented to show how the process influenced the research outcomes. It is based on a collaborative project developed and implemented with an Anishinaabe First Nation community in the Georgian Bay and Lake Huron region of northeastern Ontario, Canada. The community wishes to remain anonymous for the time being. To protect confidentiality, we have removed identifying names, citations, and other information. The project was initiated and developed by the community and designed and carried out in accordance with the mandates, knowledge, and ethics protocols and approval of the First Nation. The purpose of the project was to work with the community to reconstruct their historical relationship and responsibilities to the water, and to research, explore, and engage the community on how best to reclaim their water rights and revitalize water laws (responsibilities). The results of this research project include a framework designed to support community efforts to advance their water security goals and aspirations. However, our decision to focus on research position and process rather than product enlivens principles that guide ethical research with Indigenous Peoples: ownership, control, access, and possession (OCAP), which is a model for protecting Indigenous data sovereignty (FNIGC, 2014). It is a decision that recognizes the First Nation’s ownership of the water governance framework. To contextualize our approach to the research, we begin with foundational and current approaches to Indigenous water governance, knowledge, and research practice.

Supporting Indigenous Water Governance Through Indigenous Knowledge and Research Paradigms

Water governance is not a new concept for Indigenous Peoples. First Nations have always had relationships with the waters of their lands (McGregor, 2012; Paisley et al., 2015). Indigenous

¹ Similarly, the “incorporation” (Emanuel & Wilkins, 2020) and “participation” (Hania, 2019) of Indigenous people and knowledge within dominant decision-making regimes is equally harmful and inappropriate.

worldviews understand that water governs itself (Gonzales, 2020) and that water governs us as human beings (Craft, 2018). Rather than conceptualize Anishinabek water governance as “decision-making processes through which water is managed,” Chiblow describes it as “relationship governance” (2019, p.8). It is how people manage human behaviour—our relationships with ourselves, with other people and living things, and how we take care of the water (Chiblow, 2019; Danard, 2015). Indeed, Anishinabek governance is “based on relationships with and responsibilities to all of life which includes *nibi* [water] governance” (Chiblow, 2019, p. 8). Anishinabek water governance is holistic; it exceeds notions of water as a resource or commodity, and encompasses the spiritual dimension, physical conditions of water, human health and that of other living beings, culture, ethical principles, and proper conduct regarding how water is used and treated. It takes numerous forms (Craft, 2018).

In light of Anishinabek relationships to water, a research approach was required that reflects the underlying ontologies of water (McGregor, 2018a). Within holistic Indigenous conceptualizations of water and water governance, not only are human relations with water considered; a foundational tenant of Indigenous “hydrosocial relations” is that water is a living entity with rights and responsibilities to fulfill (McGregor, 2021; Wilson, 2014). This goes beyond the international human rights framework, which advocates for First Nations drinking water as a human right in alignment with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) that access to clean drinking water and sanitation is a basic human right (Craft, 2018; HRW, 2016; Taylor & Longboat, 2020). Indigenous understandings of and relationships with water often exceed this framework in that water itself is understood to have rights and responsibilities that ought to be protected. This is evidenced in international Indigenous water declarations (Sanderson et al., 2020) such as the Indigenous Peoples Kyoto Water Declaration (2003), Tlatokan Atlahuak Declaration (2006), and Garma International Indigenous Water Declaration (2006) and reflected in the Chiefs of Ontario Water Declaration (2008) and Grand Council Treaty #3 *Nibi* Declaration (Craft & King, 2021).

The research process described in this paper is informed by Indigenous knowledge and ethical conduct in research with a First Nation community. Indigenous knowledge is a way of life that is embodied by Indigenous Peoples in their relationships with Creation (McGregor, 2004; 2018a). Relationships with the environment are specific to place, to each nation, and emanate from the sacred (Gonzales, 2020; Kealiikanakoaleohaililani et al., 2016; Yunkaporta, 2020). An important aspect of Indigenous knowledge is the acknowledgement of the lands and the waters themselves as relatives and teachers, as significant sources of knowledge (Kimmerer, 2013; McGregor et al., 2020). Indigenous knowledge is embedded in Indigenous social systems and is often referred to as an Indigenous knowledge *system* (McGregor et al., 2019). Indigenous knowledge systems (IKS) are inter-related and inter-connected with Indigenous cosmologies, practices, ethics, and decision-making processes (Reo & Whyte, 2012; Wilson et al., 2019).

There are protocols in place to guide appropriate and respectful engagement with IKS and cross-cultural knowledge exchange (Gonzales, 2020). Reo et al. (2017) describe factors that support Indigenous involvement in multi-actor environmental stewardship initiatives, while the Climate and Traditional Knowledge Workgroup (2014) outlines guidelines for considering traditional knowledges in climate change initiatives. In research, Canada’s major federal research agencies, known collectively as the Tri-Council, have established guidelines for conducting ethical research with Indigenous Peoples, while

many First Nation communities have their own frameworks and protocols in place to guide ethical partnerships with outside researchers (McGregor, 2018a; Reo, 2019). For instance, the Karuk advocate not for the recognition, documentation, and integration of Indigenous knowledge within Western knowledge paradigms, but for Indigenous knowledge sovereignty, a dual process that entails both strengthening the internal use and transmission of knowledge and removing external policy and jurisdictional roadblocks to the enactment of Indigenous knowledge on traditional lands (Norgaard, 2015). Whyte (2018) calls this the ‘governance value’ of Indigenous knowledge systems: the essential role of Indigenous knowledge in the revitalization of Indigenous governance and related legal orders, land-based practices, diplomatic protocols, and other collective capacities that promote the wellbeing of lands and Peoples.

Grounding these principles of ethical engagement with Indigenous knowledge are Indigenous research methodologies, what Geniusz (2009) calls *biskaabiiyang* methodologies or “returning to ourselves”, and Wilson (2008) refers to as ceremony. Indigenous research is culturally specific but evidence from Canada, the United States, Hawaii, Australia, and Aotearoa New Zealand show that it is shaped and supported by relationality (Moreton-Robinson, 2017), a process Wilson (2008) describes as building more relations or constructing more knots in the web of relationships that produce knowledge. In water governance, Indigenous research methodology is discussed by Arsenault et al. (2018; Arsenault 2021), Fox et al. (2017), Craft (2017; Craft & King 2021), and Chiblow (2019; 2020). In what Chiblow (2019) refers to as “re-searching” *nish nibi* (water) *giikendaaswin* (knowledge) and responsibilities (laws), it consists of an all-encompassing methodology with numerous methods “as old as the peoples themselves” (p. 8). Central to these processes is relational accountability, being accountable to one’s relations (Reo, 2019; Wilson, 2008). As such, ethical conduct in research with a First Nation community must necessarily consider Indigenous governance systems and legal orders.

In the current context, nations are engaged in various processes to revitalize and in some cases to codify their laws (Borrows, 2010a; Clogg et al., 2016; Todd, 2016). Working with Anishinaabe Elders, youth and knowledge holders through stories, ceremony, and other land-based practices, Craft (2014) identifies the following Anishinabek *nibi inakonigewin* (water laws):

- | | |
|--------------------------|------------------------------------|
| a. Water has spirit | e. Women are responsible for water |
| b. We do not “own” water | f. We must respect the water |
| c. Water is life | g. Water can suffer |
| d. Water can heal | h. Water needs a voice |

Notably, the spiritual nature of water comes first. Indigenous law, conceptualized as original instructions and “respectful relationships and accords of reciprocity and responsibilities”, emanates from the sacred (Gonzales, 2020, p. 87; King, 2007, p. 84). Sacred *nibi inakonigewin* (water law) is fulfilled through conduct and daily practice—it is a way of life (Craft, 2018).

A framework already exists to facilitate ethical relations between Indigenous and non-Indigenous peoples with respect to water laws, knowledge exchange, and governance. In many parts of Canada, including where this research is situated, the relationship between Indigenous and newcomer nations is

supposed to be mediated by treaty, which is an Indigenous framework for coexistence that is meant to sustain relations between peoples and to ensure the continuation of all life (Borrows & Coyle, 2017; King, 2007; Mills, 2017).² A Nation-to-Nation relationship mediated by treaty locates Anishinabek *inaakonigewin* (law) as “a separate but equal system of law” in Canada (Craft, 2014, p. 24). The Elders believe that Anishinabek *inaakonigewin* should be used to inform and to interpret Canadian law (Craft, 2014). For example, it would be understood that water has the legal rights of a person if section 7 of the Canadian Charter of Rights and Freedoms, which protects “life, liberty and the security of the person”, were interpreted through the Anishinabek legal concept, “water is life” (Craft, 2014, p. 5). While treaties between Indigenous Peoples and the Crown are violated by the settler-colonial state, the Anishinabek never surrendered or gave up their relationships with the waters (Harry Bone in Craft, 2014). Treaty pre-dates the arrival of Europeans on Turtle Island (North America). First Treaty is with Creation itself; it is Sacred Law or Original Instructions (Gagnon et al., 2020; Mills, 2017). First Nations continue to enact their sacred responsibilities to *nibi* (water), to renew historic treaty relations (Anishinabek News, 2014), and to assert jurisdiction over their lands and waters. This includes contemporary treaty and title claims to the waters within First Nations’ traditional and treaty territories (MCFN, 2020; OKT Law, 2020). Non-Indigenous governments and society need to pick up their treaty obligations to the land and to the original land stewards.

Thus, there is a role for non-Indigenous partnership and collaboration in the restoration of Indigenous jurisdiction and legal frameworks. Indeed, the Elders want to “share what they know and make it more widely accessible” in ways that respect and accord with Anishinabe protocols (Craft, 2014, p. 12). Pathways exist to respectfully engage and meaningfully support Indigenous systems of knowledge, research ethics, and research sovereignty (Williams et al., 2020); for example, through reconciliation research (McGregor, 2018b), Indigenous-informed critical place inquiry (Tuck & McKenzie, 2015), treaty-based research (Latulippe, 2015b), and moving over (Latulippe & Klenk, 2020). Foundational these approaches is a commitment to protect Indigenous lands and ways of life (Indigenous people/peoples and rights), and to end destructive colonial attitudes and behaviours regarding the water (McGregor, 2004; Chiblow, 2019).

Community context, research approach, and knowledge gathering and analysis methods

The research was led by a First Nations community in the Georgian Bay and Lake Huron region in northeastern Ontario, Canada. Indigenous self-determination (Reo et al., 2017) and knowledge sovereignty (Norgaard, 2015; Whyte, 2018) are foremost considerations in our research design and as such all efforts are made to protect the confidentiality of the data and community. In what follows, we describe the community context, project objectives and research strategy, followed by methods of community engagement and knowledge gathering.

² By treaty we mean specific regional nation-to-nation agreements, such as the Robinson Huron Treaty, 1850, multinational gatherings in which relations between Indigenous and newcomer nations were renewed, such as the Treaty of Niagara, 1764, and Indigenous treaties that pre-date European contact.

This research was part a broad and multi-scalar community water governance strategy that is guided by existing social, cultural, political, and technical water protocols and tools. The community has governed and managed the waters according to Anishinaabe law, knowledge, and values for generations. However, due to compounding external threats and challenges to the waters, human health, and the health of ecosystems and the many living beings who rely on water, the community is engaged in multiple water rights, protection, security and governance initiatives and advocacy. Existing strategic planning documents include a community Source Water Protection Plan, a Water and Wastewater Action Plan, and a 25-year Water Protection Plan. Other initiatives include a prohibition on the use of plastic water bottles at community events, substantial infrastructure upgrades, the conduct of water ceremonies, Water Walks, education, awareness building, and outreach, and everyday activities that use, protect and care for water (Chiblow & McGregor, 2016). The community does not act in isolation on water protection and governance. The First Nation works within collective cultural and political advocacy networks such as the regional tribal council, the main treaty organization, the provincial coordinating body, Chiefs of Ontario, and the national Assembly of First Nations (AFN). The First Nation recognizes that the waters within its territory are intrinsic to broader Anishinabek governance and legal orders. For instance, sacred sites are significant not only locally to the First Nation, but to all citizens of the Anishinabek Nation (Anishinabek Nation, 2018; Johnston, 2006). The First Nation community acknowledges its responsibility to protect its sacred and heritage sites for the entire Nation.

The purpose of the research was to support the development of a framework for use by the community that could inform water security and governance initiatives and be leveraged in their political advocacy. The objective was to develop a position paper for the First Nation community that outlines threats to the waters in the territory, develops recommendations based on community engagement, and provides a document that leadership can use to protect the waters. Research activities included the review and documentation of written material collected and connected to the community's historical water laws and uses (Treaties, archival material, and resources); development of an annotated bibliography on Indigenous water governance; community engagement sessions and key informant interviews with Traditional Environmental Knowledge Holders, Traditional Knowledge Keepers, Elders, Youth, community, leadership, and academics to discuss issues as well as gather and document recommendations from the community on how to address their concerns; and the development of a Position Paper on Water Governance with specific recommendations for mitigating threats to the waters.

The research was led, governed, and funded by the community with support from researchers, both academic and community based. A water governance committee comprised of community leadership, technicians, policy experts, academics, youth, traditional knowledge holders, language speakers and Elders informed and oversaw the project, including the research objectives, deliverables, communication, and approval process. This committee also guided how the knowledge would be translated to community leadership, other stakeholders, and broader society. A research team including community-based and university researchers (the authors) were responsible for knowledge gathering, analysis, and communication of results.³ All elements of the research were discussed with and vetted by

³ The community researcher cannot be identified as it would compromise community confidentiality.

the community water governance committee. In an ongoing manner throughout the research process, the researchers liaised with members of the water governance committee and collaborated on research design, the community engagement strategy and its implementation, recruitment of research participants for key informant interviews, and the interpretation of meaning. The committee was provided with ongoing written updates, progress reports, a summary of interview data, and draft research papers. At all stages, it was important that the research be community-driven and prepared in an accessible manner.

Research design included two kinds of engagement: community engagement sessions and key informant interviews. The key assertion behind community engagement is that community members know and relate to the waters in their traditional and treaty territory and thus are best positioned to speak to it. Two community engagement sessions were held to reach as many people as possible (50 community members participated in total). The theme of community engagement sessions was *Zaagtoonaa Nibi, We Love the Water*, expressing the holistic and relational approach to water governance in the community (Mandamin, 2012). Sessions had three aims: to clearly present information to the community from previous water-related consultations, facilitate discussion and prioritization of previously and newly identified threats to water and opportunities to exercise Anishinabek water governance and law, and gain information needed to communicate to leadership community-derived priorities with regards to water threats and opportunities.⁴ Invitations to participate were circulated through the household newsletter. The sessions respected cultural protocols by opening in a traditional way with ceremony and a community feast. Following an information session in which previous water-related community consultations were summarized, previously identified water threats and opportunities explained, and new opportunities and threats solicited and discussed, participants were invited to visually indicate through a participatory ranking exercise what they felt to be the most pressing (top three) water threats and opportunities (Howe et al., 2013; Morey & Venette, 2021).

Key informant interviews (Faifua, 2014; MacKian, 2010) were designed with two goals: to engage community members who follow traditional land and water uses to discuss and record the community's historical, cultural, and spiritual connection with water, and to discuss and record threats to water and opportunities to exercise Anishinabek water governance and law. All interviews were conducted by the community researcher who is familiar with the Elders and community members and comfortable with the Anishinaabemowin language, which is integral as key concepts and practices are best expressed in Anishinaabemowin. This method was informed by several underlying assumptions. First, engaging directly with knowledge holders recognizes the embodied and experiential nature of place-based (but not place-bound) Anishinaabe *gikendaasowin* (knowledge) (Larsen & Johnson, 2017; McGregor, 2021). Second, it reflects OCAP principles that guide ethical research with Indigenous Peoples as knowledge is exchanged between community members within the community. Third, participation was designed and carried out in accordance with OCAP and specifically according to the mandates and protocols of the First Nation community. Interview participants included Elders, traditional knowledge holders, and language speakers, those who employ traditional uses of land and water, such as hunters,

⁴ Threats to water had previously been identified in a series of community building exercises that led to an Environmental Management Plan and Source Water Protection Plan.

fishers, and trappers, health practitioners and those who use plants for medicine and food. Invitations to participate were done by invitation and referral, snowball sampling (Noy, 2008), with the aim of seeking representation from each family group in the community. Each interview followed appropriate cultural protocols, for instance, offering sema (tobacco) in part as an act of reciprocity for the information shared, and obtaining verbal consent, including to audio-record the interview (Chiblow, 2019; Wilson & Restoule, 2010).

A set of questions was developed collaboratively by parties to this project that would facilitate informal conversational interviews (see Table 1). In total, nine community members participated in the key informant interviews. The full written record of each interview was collated in a separate document that is kept by the First Nation.

Table 1: Guiding questions for key-informant interviews

<ul style="list-style-type: none"> • Can you please tell me about your relationship to water? • Can you tell me about the importance of waters at culturally-significant areas? • Are there any words or concepts in Anishinaabemowin that convey a similar meaning to “protecting the water”? • What concerns you the most about negative changes to the water? What challenges do we face as a community? • What do you see as your role in protecting the water? • What do we need to do as a community to protect the water? What do our people need to know and do? • What do we already have that is a strength? What do we need to develop further? • Do non-community members have a responsibility to the water? What is it? What do they need to know and do? • How do we know that protecting the water has been achieved? What would that look like? • Any other ideas: funding, partnerships, collaborations, lobbying, or education and awareness building?

A review of literature complemented the key informant interviews and community engagement sessions. Literature reviewed included academic and grey literature on First Nations water knowledge, governance, laws, policies, and Indigenous research methodologies and ethics, codified forms of Anishinabek law, and community reports and transcripts. Together, these research methods acknowledge the myriad sources of Anishinabek water knowledge, governance, and law, including historical and contemporary uses of water, oral histories, and traditional teachings about water (Archibald, 2008), values, ethics, and legal principles concerning proper behaviour or right relations with water, and Anishinabek and other Indigenous legal frameworks concerning the protection of lands and waters.

Finally, several qualitative and basic quantitative data analysis methods were used by the researchers to analyze and generate meaning from the knowledge shared. Perceived threats and opportunities to waters were ranked by a simple count of the number of times they were identified by participants as one of three top priorities. Tallies were done at a number of registers: by issue (e.g., invasive species, shipping nuclear waste, etc.), category (e.g., tourism pollution, capacity issues, etc.), and by scale (e.g., local, international, etc.). Qualitative information gathered at community engagement sessions and through key informant

interviews contextualize and add nuance to the rankings. Besides the ranking exercise, qualitative data was interpreted through thematic coding and interpretive analysis (Braun & Clark, 2006; MacKian, 2010); through Indigenous storywork, a holistic interpretive framework for learning respectfully from and with Indigenous stories, protocols, and knowledge holders (Archibald et al. 2019); and Borrows' (2010a) method of drawing out law from primary and secondary sources to identify Anishinaabe legal principles and water laws in the community. Together, these methods allowed the researchers to identify interpretive categories, how they fit together, and how they inform the overall story they tell about the data. The researchers shared preliminary research findings from community engagement and interviews with the water governance committee and feedback was sought before proceeding to the final stage, the development of a Water Security Position Paper.

The Water Security Position Paper was developed for leadership to use in future negotiations with governments and other third-party interests to communicate the community's position on water security. It includes 9 steps pointed at external water threats, to ensure water security for future generations. A longer water governance and law research findings report was also prepared for the community. It is a comprehensive account of the knowledge generated from this research, including literature review, community perspectives on water threats and opportunities, and Anishinaabe water laws. Finally, the research was used by members of the water governance committee to articulate a set of 10 internal community recommendations set out in a companion document. They are meant to strengthen Anishinaabek water laws and practice in the community. These pieces constitute the core of a water governance and protection framework developed by and with the First Nation.

Research Results: Water threats and opportunities, legal principles, and a path forward

In this section we share some of the results of the research, including the identification and prioritization of threats and opportunities facing the waters, Anishinaabe water laws, and a strategic path forward. First, it is important acknowledge Anishinaabe perspectives or onto-epistemologies of water present in the research. In the community, concern for water is not limited to drinking water. From the interviews, water includes rain (many types of rain), waves, ice, snow, groundwater, drinking water, streams, springs, lakes, and shorelines. Concern for water included concern for spiritual and other beings that reside in and dependent on the water, including fish, medicines, plants, berries, food (gardens), limestone, rock, human beings, the ancestors, and future generations. In its multiple roles and functions in the lifecycles of so many beings, water provides "everything" (research participant). Water is a "lifeline" (Ibid.). It meets physical, emotional, and spiritual needs. It meets intellectual needs, as water is related to how one thinks, and to how one considers and relates to others. Water is teeming with life; it is alive, life giving, and sacred. Water is life.

Previously documented concerns and perceived threats to water were fleshed out and prioritized during the two community engagement sessions. Most of the threats identified by the community reflect broader historical and ongoing experiences of colonialism and dispossession. Previous community reports and transcripts identified dispossession and limited access to traditional lands and waters as major threats to water security and governance. For instance, the creation of parks, development of private lands, and settler economies have restricted access to traditional hunting areas and disrupted

sacred sites and burial sites, traditional teachings, and practices. Elders are concerned with the impacts of aquaculture, the destruction of sacred sites, and the contamination and pollution of waters from tourism, industry, and resource extraction activities. Industrial development has impacted the quality and quantity of fish, water, medicine plants, and air quality, while truck traffic, noise and light pollution impacts fasting and other ceremonial practices. Historical and ongoing issues are compounded by the impact of climate change, including changing ice conditions, lower water levels, more droughts, extreme storm events, hotter summers, algae blooms, invasive species, the potential for more fires, and negative impacts on traditional food sources, medicine plants, and maple sap. Threats challenge mental, physical, emotional and spiritual health and wellbeing; for instance, the unpredictability and unreliability of the lakes freezing over impacts travel across the ice, recreational activities, ceremonies, and access to traditional foods. Concern was raised about future impacts of a changing environment on community health, citing risks to future generations.

Through group discussion and participatory ranking, a clear link was made between local, regional, provincial, federal, and international threats and opportunities. For example, pressure-treated lumber may affect local fish habitats, but combined with aquaculture waste, the movement of water and air, aerial spraying, and negative changes to the health of the Great Lakes on account of industrial development and climate change, local threats are exacerbated by that which originates elsewhere. The protections that are supposed to be offered by jurisdictional and ecosystem boundaries collapse in the face of globalization and climate change, not a new challenge facing First Nations whose authority to protect their interests on and off reserve is structurally limited. While serious perceived water threats were seen as beyond the control of the community, including threats to the Great Lakes from invasive species and nuclear waste and those stemming from inadequate Canadian water policy frameworks (under-funding and legislative gaps), opportunities to protect the water were local and regional, such as strengthening local emergency responsiveness and forging constructive regional partnerships. Emergency preparedness, controls on development, working effectively with those who share the waters, and strengthening community capacity, including as a Treaty region involved in broader policy and law-making processes, were also identified as opportunities.

Opportunities recognize the need to resist and refuse government and other external intrusions, and to assert and strengthen inherent rights and responsibilities to the waters. The research was clear that Anishinabek water governance is grounded in the inherent authority to make decision about the waters and responsibility to care for and protect the waters. This is a significant strength and opportunity for Anishinaabe water governance and can be expressed in four legal principles.

The following legal principles encapsulate comments made by community members about proper conduct and appropriate relations with water: respect, reverence, reciprocity, and responsibility. Respect for the waters entails building a safe relationship with water. It was said by one research participant that water “is our lifeline” but it can “take life too.” Respect for water includes respect for all the beings in water as citizens with their own rights and obligations of to fulfill. Community members and the surrounding non-Indigenous society (tourists and industry) should respect the water. Not wasting water, not polluting the water, expressing gratitude and appreciation for the water, and exercising caution and safety were provided as examples of respect and reverence, of good relations with water.

Reciprocal relations with water include ceremonies and making spiritual offerings to the water, as well as shore clean ups and other ways of protecting the waters. Connecting to the water, developing and maintaining an active and embodied relationship with the water, are forms of reciprocity. Connection helps people know what the water needs. Cultural values such as sharing what one has, being generous with water, and letting the waters replenish (to assist the water) are seen as expressions of respect, reverence, and reciprocity. Responsibility relates to the fact that water provides everything needed for survival and wellbeing. One Elder stated, “No one ever claimed ownership to water because everyone needed it. The expectation was that everyone cared for the area.” All people, it was said, have a responsibility to build and maintain the quality and quantity of water, including all forms of water and water sources, and to protect the waters and all water beings.

Ultimately, to use the waters is to be responsible for protecting and revering it. Respect and reciprocity are embedded in stories about power and balance involving water spirits, in historic treaty agreements to share land, and in the recommendations for more local information and awareness about climate change that will enable community members to uphold their responsibilities to the land. Respect, reverence, reciprocity, and responsibility are not mutually exclusive, nor do they concern only interactions with water. Water is multiple, so these principles guide proper conduct with water and relations with the self and with other beings.

Ultimately, the research shows that strengths and opportunities for Indigenous water governance and implementation can be found in the oral histories, stories, and protocols to protect the waters. They embed unwritten rules and common sense into everyday practices and behavior. Research participants made the following comments:

The children listened to the stories and heard how we were to protect the water and be thankful the water was there for us to use.

Teach everyone about the importance of water. We need a clean-up day for the shoreline like we have—Earth day when we clean up the community. We need a water day to clean up places. We need to do it when the ice is gone. Take children to the water when the ice goes and talk about the water. Children have the capacity to see the big picture because their imagination is so vibrant—teach to them at that time at the water. And even if there is garbage there, have them pick it up. Hearing and seeing and doing will imprint their mind. Because it is going to belong to them.

Stories and everyday practices embodying respect, reverence, reciprocity, and responsibility for water are sources of knowledge about proper water relations and water laws (Gonzales, 2020). Research participants identified many sources of knowledge, including spirit, the body, our senses, emotion, observation and intellect, historical land uses and management practices, scientific information about the water, ceremony, dreams, cultural and social norms, inter-generational and community knowledge, modeling, learning by doing, health and safety, communication with the natural world, the Elders, stories, traditional teachings, prophecies, recreation, sustenance, livelihoods, identity, and Anishinaabe

values. Making mistakes and learning the hard way about appropriate water conduct also offer valuable lessons. This wealth of knowledge in the community is a strength and opportunity.

Due to external factors rooted in the settler-colonial structure, the implementation of Anishinaabe water governance and law beyond reserve boundaries is a significant challenge. According to one of the Elders: “I am afraid it might be too late to protect the water because there is so much industrial pollution.” Another participant stated, “there is a lot outside of our control” and because of this “we can’t use the water like the way we used to.” Frustration with government and feelings that it is “too late” reinforces the need to affirm the Indigenous right to self-governance, including the right to say no, a right that is reflected in the principle of free, prior, and informed consent protected by international human rights standards (Craft, 2018).

Guiding a pathway forward, Elders involved in the research stressed the value of experiential and land-based learning that strengthens Anishinabek knowledge, values, ethics, decision-making in the community. This reinforces earlier research explaining the successful implementation of First Nations water initiatives: implementation is more likely to be a success when initiatives build on existing community strengths and efforts to protect and restore the waters (Arsenault et al., 2018; Collins et al., 2017). This is because of the persistence of external structural gaps (infrastructure, jurisdictional, policy, and regulatory) that challenge and undermine First Nations water security.

A growing body of evidence also demonstrates that working relationships between Indigenous and non-Indigenous communities can be effective in facing these challenges (Larsen & Johnson, 2017; Ransom & Ettenger, 2001; Reid et al., 2020). Factors that support Indigenous involvement in multi-actor environmental stewardship initiatives include respect for Indigenous knowledges, Indigenous control of knowledge mobilization, intergenerational involvement, Indigenous self-determination, continuous cross-cultural education, and the early involvement of Indigenous people and communities (Reo et al., 2017). Community members involved in the research expressed a willingness to partner with outside agencies and to participate in the management of lands beyond the reserve boundaries. From an Anishinaabe legal perspective, this is “not about creating partnerships, but rather about being respectful allies or relatives that do not interfere with each other’s law and governance” (Craft, 2014, p. 24).

Overall, the research suggests that revitalizing and supporting Indigenous land-based practices will strengthen connections to the land and strengthen First Nations water security and governance processes. Strengthening internal systems of knowledge, law and governance equip First Nations to confront external challenges stemming from colonization. This is the governance value of Indigenous knowledge (Whyte, 2018) which can be supported through research and other means and mobilized to strengthen self-determination and sustainable water governance both on and off First Nations reserves (Baijius & Patrick, 2019; Paisley et al., 2015).

These results were used to develop a water security and protection framework developed by and with the First Nation. Nine recommendations were identified from the research for use by the community to influence external agencies and interests. They concern jurisdiction, inherent rights and responsibilities to protect the waters; major external threats to the waters; Anishinabek laws and legal pluralism

(Borrows, 2010b); resources and funding; free, prior, and informed consent; effective partnership; intellectual property and knowledge sovereignty; by-laws; and research, guidelines, and awareness. The water governance committee then drew on the research to articulate a set of ten internal recommendations to strengthen Anishinaabek water laws and practice in the community. They involve specific advocacy and lobbying efforts; strategic partnerships; capacity building; education, research, and awareness building; intellectual property; financial resources and economic development; and the need to restore relationships with the waters.

Discussion: Supporting and implementing Indigenous self-determination and water security

This paper focused on research process; essentially, relationship building and working in partnership, enabling Anishinaabe perspectives to be the core and foundation of the research. The research was led, governed, and funded by the community—it was initiated and developed by the community and not by an external funding body, ethics board, or educational institution. It was designed and carried out in accordance with OCAP and specifically according to the mandates, knowledge, and ethics protocols of the First Nation community, which are distinct from and often more stringent than what is required from university ethics boards (Luby et al., 2021). The methods employed were grounded in the teachings of the Elders, participation in cultural practices, and in other forms of traditional knowledge held by community members. This adds another example of Indigenous water research exceeding (as it should) the typical approach to Indigenous knowledge research taken by academic institutions (see Chiblow, 2019). The communication of research results also exceeds normal academic knowledge mobilization. Notably, in this study, we are not in a position as authors to share all of the empirical results as they constitute the intellectual property of the First Nation. An integral aspect of Indigenous research is that the community owns and controls the information, in alignment with OCAP principles, self-determination, and knowledge sovereignty discussed above. In so far as community knowledge, experience, and perspectives are central to the inquiry, this collaborative, community-led research is similar to approaches utilized by Craft (2014, 2018) and Chiblow (2019). It reflects the centrality of inawendiwin (relating) and relational accountability, the “interpretive and epistemic scaffolding” of Indigenous research (Kovach, 2009; Moreton-Robinson, 2017: 69; Reo, 2019; Wilson, 2008). It nurtures existing relationships and supported the development of new relations involving university and community-based researchers, youth, Elders, technicians and policy experts, leadership, traditional knowledge holders, and language speakers.

We shared some results to demonstrate how the process influenced the research outcomes. Research outcomes respect and acknowledge Anishinabek nibi giikendaaswin (water knowledge) and Anishinabek nibi inaakonigewin (water laws), cultural perspectives, values, responsibilities, and lived experience. For instance, community-identified water threats and opportunities are not limited to technical concerns and Western scientific knowledge about water, nor are they solely concerned with drinking water for human beings, which are dominant themes in mainstream water research, management, and decision-making paradigms (Longboat, 2015; McGregor, 2021). The research activates Indigenous water governance, not limited to the rights of human beings to access clean drinking water but concerned with the rights and responsibilities of *all* waters and with the health and wellbeing of the land itself, including animals, fish, medicines, sacred sites, spiritual beings, and future

generations. Strategies to address water protection—including ceremonies, responsibilities, inter-generational knowledge transmission, and land-based learning—exceed the normal technical provisions included within Source Water Protection planning. Water protection is rooted in ancestral connections to spirit and to land, expressed in the normal, everyday visions and practices. Zaaqtoonaa Nibi (We Love the Water) typifies this relationship to water. The research also identifies settler-colonialism as a persistent source of harm to Indigenous water security and governance. Breaches of treaty and the failure to honour the spirit and intent of the treaties remain significant challenges (Laidlaw & Passelac-Ross, 2010; Phare, 2009).

Similarly, recommendations made to community leadership reflect the First Nations' relationship with the waters and ultimately strengthen the community's existing approach to the protection and restoration of waters. Recommendations resonate with the dual focus found in the Karuk tribe's approach to resource management, a strategy that involves both strengthening internal knowledge governance systems and removing external policy and jurisdictional roadblocks to the implementation of knowledge (Norgaard, 2015; Whyte, 2018). They also resonate with findings that Indigenous self-determination is essential for achieving effective forms of collaborative resource management and environmental governance (Bowie, 2013; CIER, 2009; Reo et al., 2017; von der Porten et al., 2016).

This research demonstrates how collaborative, Indigenous-led and community-engaged research can synthesize, extend, and strengthen Indigenous leadership on water protection and governance. It highlights the value and scope of methodologies that draw on Indigenous approaches to understanding and developing knowledge to revitalize, support and strengthen Indigenous water knowledge, governance, and law. The implications are far reaching (Stefanovic & Adeel, 2021) as Indigenous water governance calls on all people to (re)learn and (re)establish sustainable relations with and responsibilities to water.

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