

**NIPI MAMOWEENENE: INDIGENOUS WATER GOVERNANCE TO
PROTECT THE HEART OF OHKE (MOTHER EARTH) THE GREAT LAKES,
NAYANNO-NIBIIMAANG GICHIGAMIIN, KANYATARE'KÓ:WA**

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TO PROTECT THE HEART OF OHKE (MOTHER EARTH) THE
GREAT LAKES, NAYANNO-NIBIIMAANG GICHIGAMIIN,
KANYATARE'KÓ:WA

by

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LAY ABSTRACT

The rivers and tributaries of our planet carry water through Mother Earth like veins carry blood, and for many Indigenous Peoples, the Great Lakes are the heart of Mother Earth sustaining her life blood - water. However, centuries of water colonialism have led to the disenfranchisement of Indigenous Peoples' water citizenship, which is connected to the evolution of Indigenous water governance in the Great Lakes. This doctoral dissertation investigates the history of water colonialism in the region and the transferability of Indigenous water institutions to manage the complex multilevel governance waterscape; Indigenous Peoples perceptions of Great Lakes well-being; water injustices that result when Indigenous worldviews are not valued; and the path forward for rebuilding water diplomacy through Indigenous water citizenship for Great Lakes governance. Great Lakes Indigenous Nations' reawakening of sleepy water knowledges are lessons for Indigenous Nations around the world fighting to protect the water on how to reclaim their water sovereignty for Indigenous water governance.

ABSTRACT

The rivers and tributaries of our planet carry water through Mother Earth, like veins carry blood, and for many Indigenous Peoples, the Great Lakes are the heart of Mother Earth sustaining her life blood - water. However, centuries of water colonialism have led to the disenfranchisement of Indigenous Peoples' water citizenship, which is connected to the evolution of Indigenous water governance in the Great Lakes. Indigenous water governance includes the intergenerational and adaptive institutions and processes by which Indigenous Peoples and Nations protect the water through decision-making, treaty relations, and resurgent kinship. Indigenous water governance is grounded in the principle of Indigenous survivance – the capacity of an Indigenous Nation or community to survive stressors to water governance through resilience building that allows for sustainability and protection of water for future generations. Understanding the roles of Indigenous Nations as rightsholders in a given social-ecological-system is necessary for understanding the institutions, policies, and processes shaping collaborative water governance in transboundary basins. The failures in equity of participation, decision-making authority, and government-to-government consultation for Indigenous Nations in the shared protection of the Great Lakes St. Lawrence River Basin (GLSLRB) represent governance crises for water security. Adaptive water governance is grounded in Indigenous inclusion as rightsholders and knowledge co-production for shared agenda setting and equitable decision-making in the face of uncertainty. This dissertation empirically investigates the norms, dynamics and mechanisms that underlie the management structure, composition, and politics of Indigenous water governance in the Great Lakes. Chapter 1 introduces the literature and background necessary for positioning the four studies of the dissertation presented in Chapters 2, 3, 4, and 5. Chapter 2 presents the history of water colonialism in the region and the

transferability of Indigenous water institutions to manage the complex multilevel governance waterscape of the Great Lakes. Chapter 3 examines Indigenous attitudes towards Great Lakes protection in public opinion polls and the cross-national differences among Indigenous and non-Indigenous residents of the Great Lakes basin. Chapter 4 contains a case study of the Great Lakes Water Quality Agreement Areas of Concern, their impacts on Indigenous Nations, and the water injustices that result when Indigenous worldviews are not valued. Chapter 5 explores the reawakening of sleepy water knowledges through the Water Walks and presents the path forward set by the water walkers for rebuilding water diplomacy through Indigenous water citizenship for Great Lakes governance. Taken together, these studies help us to conceptualize Indigenous water governance within the Great Lakes and provide best practices for Indigenous leaders globally working to protect the water and enacting Indigenous water governance.

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Tabutnamish Nipi. Koowomonsh Nipi.

Tabutnamish Nipi. Koowomonsh Nipi.

Tabutnamish Nipi. Koowomonsh Nipi.

Tabutnamish Nipi. Koowomonsh Nipi.

As water is our first medicine, I acknowledge her spirit and give thanks for all she has given and will continue to give for future generations. All my love and thanks across four directions are shared with the water. The words that flow on the following pages are my expressions of gratitude to her fulfilling our treaty relationship. She is kin and without her none of this would be possible.

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PREFACE

This is a sandwich thesis. Chapters 2, 3, 4, and 5 of this doctoral thesis are intended to be published in academic journals as discrete manuscripts. The surrounding material of chapters 1 and 6 are meant to outline the general themes and objectives as well as provide the overall contributions of this research to the body of knowledge on Indigenous water governance. This dissertation is, in part, based on interviews with water walkers and water workshops with Indigenous Nation partners from 2017-2018 in the Great Lakes. Chapter 2, 3, 4 relate to research partnerships with Walpole Island First Nation, Red Rock Indian Band, Sault St. Marie Tribe of Chippewa Indians and Long Lake #58 First Nation. Chapter 5 is based on a separate study with water walkers co-developed in partnership with Joanne Robertson and Josephine Mandamin. The author of this doctoral thesis is the main contributor and first author on all of these studies.

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LIST OF ABBREVIATIONS

AFN	Assembly of First Nations
AIAI	Association of Iroquois and Allied Nations
AIEO	EPA's American Indian Environmental Office
AOC	Area of Concern
AWWAO	Aboriginal Water and Wastewater Association of Ontario
BUI	Beneficial Use Impairment
CBPR	Community-Based Participatory Research
BWT	Boundary Waters Treaty
COO	Chiefs of Ontario
CORA	Chippewa Ottawa Resource Authority
CORA	Chippewa-Ottawa Treaty Fishery Management Authority
CRITFC	Columbia River Inter-Tribal Fish Commission
FPIC	Free, Prior and Informed Consent
GLIAD	Great Lakes Indigenous Actors Dataset
GLIFWC	Great Lakes Indian Fish and Wildlife Commission
GLITC	Great Lakes Inter-Tribal Council, Inc.
GLSLRB	Great Lakes-St. Lawrence River Basin
GLWQA	Great Lakes Water Quality Agreement
GLWQB	Great Lakes Water Quality Board
GPTWA	Great Plains Tribal Water Alliance
HETF	Haudenosaunee Environmental Task Force

IJC	International Joint Commission
IKS	Indigenous Knowledge System
ITCMI	Inter-tribal Council of Michigan
IWG	Indigenous Water Governance
IWJ	Indigenous Water Justice
MAST	Midwest Alliance of Sovereign Tribes
MEWW	Mother Earth Water Walk
MLDRIN	Murray Lower Darling Rivers Indigenous Nations
MLG	Multilevel Governance
MNO	Métis Nation of Ontario
NAFWS	Native American Fish & Wildlife Society
NBAN	Northern Basin Aboriginal Nations
NCAI	National Congress of American Indians
NTWC	National Tribal Water Council
NWAC	Native Women’s Association of Canada
OIWWC	Ontario Indigenous Women’s Water Commission
RAP	Remedial Action Plan
UCUT	Upper Columbia United Tribes
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UOI	The Anishinabek Nation, Union of Ontario Indians
US EPA	United States Environmental Protection Agency
USET	United South and Eastern Tribes

UTM	United Tribes of Michigan
WIFN	Walpole Island First Nation
WTCAC	Wisconsin Tribal Conservation Advisory Council
YRITWC	Yukon River Inter-Tribal Watershed Council

GLOSSARY

First Nation	An Aboriginal peoples' government for whose collective use and benefit lands have been set apart or money is held by the Crown or declared to be a band for the purposes of the Indian Act. A sovereign nation with common values, traditions and practices rooted in their ancestral heritage. There are 634 First Nations in Canada, speaking more than 50 distinct languages.
Indian Country	Generally, refers to current and/or ancestral territories and waters held by Tribal/First Nations. In the United States, the term means “(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same” as codified in 18 U.S. Code § 1151.
Indigenous Nations	Reference to Tribal Nations, First Nations, Métis Nations and other interchangeable Indigenous nationalisms
Indigenous Peoples	Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. “Indigenous Peoples” as used in this thesis includes state-recognized tribes; Indigenous and tribal community-based organizations; individual members of federally recognized tribes, including those living on a different reservation or living outside Indian country; individual members of state-recognized tribes; Native Hawaiians; Native Pacific Islanders; and individual Native Americans. Furthermore, the term accounts for Aboriginal, Inuit, and Métis communities throughout Canada; individual members of First Nations; status and non-status Indians including those living on or off reserve.
Tribal Nation	Tribal Nation, Tribe, American Indian, Native American, Native, etc. are interchangeably used and defined by their reference to the first people who inhabited North America. Tribal Nation or “Indian tribe” means a tribe, band, pueblo, nation, or other organized group or community of Indians, including an Alaska Native village (as defined in or established under the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.)), that is recognized as eligible for

	the special programs and services provided by the United States to Indians because of their status as Indians (42 U.S. Code § 13743).
Turtle Island	For some Indigenous peoples, Turtle Island refers to the continent of North America. The name comes from various Indigenous oral histories that recount the emergence of our known existence and creation beginning on the back of a turtle. Furthermore, satellite images of the continent have been associated with the shape of a turtle.
Mother Earth	Indigenous Peoples of North America believe that all of life is sacred and that we are all connected as family. The one who came first (the planet we live on) is our Mother. As Benton-Benai (1988) states “The Earth is said to be a woman. In this way it is understood that woman preceded man on the Earth. She is called Mother Earth because from her come all living things. Water is her life blood. It flows through her, nourishing her, and purifies her.”
Medicine Line	The “Medicine Line” is a term Indigenous Peoples often use to describe the “invisible” and politically fictitious border between the U.S. and Canada because of the “power” of the border to stop U.S. and Canadian soldiers from crossing during the Indian Wars of the 19 th century (Hogue 2015; LaDow 2013). The term is still used today to reference invisible power and border politics.
Indigenous Knowledge Systems	The modes of understanding and processes that Indigenous Peoples use to harness and utilize Indigenous Knowledge. Barnhardt and Kawagaley (2005) note that Indigenous Knowledge Systems (IKS) are “diverse” and “these knowledge systems are constantly adapting and changing in response to new conditions” (p. 10-11). However, Kovach (2015) identifies that shared foundations of IKS emphasize respect, reciprocity, relevance, responsibility, connection to place, fluidity, culture and language (Kovach 2015).
Indigenous Water Governance	Indigenous Water Governance encompasses practices of nationhood, decision-making, citizenship, and diplomacy by Indigenous Peoples in fulfillment of responsibility to future generations and water as a living relation.
Water Justice	Water justice is concerned with “fairness, equity, participation and the democratization of water governance” (Grafton et al. 2019, p. 2). According to Sultana (2018) water justice recognizes “that water problems cannot be resolved through technical solutions alone but require broader recognition that they are inherently ecological, political and social issues simultaneously” (p. 487).
Water Security	In 2007 Grey and Sadoff defined water security “as the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies” (p. 545). Zeitoun (2011) expands on this definition to include the interconnected “web of water security” that also encompasses climate, energy, and food security in addition to human and national security. The definition was further refined “as an acceptable level of water-related risks to humans and ecosystems, coupled with the availability of water of sufficient quantity and quality to support livelihoods, national security, human health, and ecosystem services” (Bakker 2012, p. 914).

Water Governance	Water governance is the process by which decisions about water are made (Norman 2014). It “refers to the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society” (Global Water Partnership 2002).
Free, Prior and Informed Consent	Free, Prior and Informed Consent (FPIC) is a specific right that pertains to Indigenous Peoples and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). It allows them to give or withhold consent to a project that may affect them or their territories. Once they have given their consent, they can withdraw it at any stage. Furthermore, FPIC enables them to negotiate the conditions under which the project will be designed, implemented, monitored and evaluated. This is also embedded within the universal right to self-determination.
Water Citizenship	Water citizenship includes the non-activist actions for water protection in the public sphere that fulfill Indigenous water responsibilities and ensure the transmission of Indigenous water knowledges for future generations. In contrast western water scholars define water citizenship as “the discursive processes and institutional practices through which water users create membership, belonging, and loyalty to water supplies and water infrastructure and through which they distribute, govern, and manage water (Paerregaard et al. 2016 citing Neveu et al. 2011, 948).
Water Diplomacy	Water diplomacy, sometimes referred to as hydro-diplomacy, refers to the struggle of state and non-state actors to create spaces for dialogue to develop solutions for transboundary water governance (Van Genderen and Rood 2011; Klimes et al. 2019; Islam and Repella 2015). Furthermore, Indigenous notions of water diplomacy position water itself as an “actor” in dialogue for governance.

DECLARATION OF ACADEMIC ACHIEVEMENT

I, Kelsey T. Leonard, declare that I conceptualized, designed, and implemented the research project described in this thesis with guidance and input from my thesis committee who provided comments on the thesis proposal, study protocols and research instruments. I alone was responsible for data analysis and preparing the written chapters. My committee members provided feedback on earlier drafts of this thesis. This dissertation is comprised of four original research studies (Chapters 2-5), as well as an introduction (Chapter 1) and conclusion (Chapter 6). I completed all data collection and analysis for these studies and prepared the drafts for all chapters.

TABUTNE

The Great Lakes have been a site of human activity since time immemorial. We humbly ask permission from all our relatives, our elders, our families, our children, the winged ones, the four legged, the swimmers and all the plant and animal nations, to work on their behalf for the protection of the waters. We are protectors of the Great Lakes to which we are deeply connected knowing that our health as a people is intricately tied to the health of the lakes. Our first medicine is water, because life would not be possible without the blessings of the waters. The Great Lakes do not separate us. They connect us together in our humanity. We gather in peace and honor our duty to work for the protection of the Great Lakes. We bring our minds together as one, and we give greetings and thanks to each other as relations. We acknowledge the spirit and support of our clans as we work to protect the lakes. We give thanks for when we are able to come together to speak for the waters. And we ask in a humble and a good way for everyone to have the strength and courage to protect the lakes. Now our minds are one. We remember to give thanks and offer respect for all those who have gone on before us and those yet to come. And on behalf of our children, we say, with love, thank you to the water.

CHAPTER 1: INTRODUCTION

This doctoral thesis is motivated by the need to better understand how Indigenous Nations are supporting, contesting, and collaborating for Great Lakes water governance. Water governance emerged as a term within the social science literature in the early 2000s, going through a series of iterative refinements at international water forums. According to Rogers and Hall (2003), water governance is: “The range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society” (p. 7). However, this definition does not reflect Indigenous knowledge and fails to account for Indigenous cultural values, rights and relationality to water. Indigenous Nations continue to be exposed to hazards of water governance failures (e.g. First Nation drinking water crisis) and are building resilience by resisting conventional settler-colonial water regimes to restore Indigenous epistemologies of caring for water for protection of future generations. The failures in equity of participation, decision-making authority, and government-to-government relations for Indigenous Nations in the shared protection of the Great Lakes St. Lawrence River Basin (GLSLRB) represent governance crises for water security.

This chapter lays out the background and context for Indigenous water governance in the Great Lakes. It then presents the goals of this doctoral research, theoretical framework, research setting, methods, and positionality. It further provides an overview of the chapters contained in this doctoral thesis. Finally, a summary of the thesis is presented outlining the gaps in the existing body of knowledge on Indigenous water governance and the significance of the research.

Background

Among many Indigenous Nations of Turtle Island (North America), the Great Lakes are known as the heart of Ohke (Mother Earth) because they sustain her lifeblood – water. These lakes are sacred, and the region holds nearly 20% of the world’s surface freshwater (Zhang et al. 2019). The Great Lakes Basin consists of five lakes: Superior, Michigan, Huron, Erie, and Ontario. The name “Ontario” derives from a Mohawk word meaning “beautiful water”. Lake Erie and Lake Huron are named for the Indigenous Nations that call the territory home, while Lake Michigan is derived from the Anishinaabemowin word “mishigamaa” meaning “large lake”. In recent years cartographers have repositioned Indigenous knowledges and languages as central to mapping the Great Lakes region. For example, efforts by the blog *Decolonial Atlas* have reclaimed Indigenous place names and ways of knowing the Great Lakes. In 2015, Charles Lippert and Jordan Engle, contributors to the *Decolonial Atlas* blog, published “The Great Lakes: An Ojibwe Perspective” mapping Nayanno-nibiimaang Gichigamiin (The Great Lakes) in Anishinaabemowin (Ojibwe). Unique to their map was an orientation to the east centering Anishinaabe science, navigation, and orientation to the east in the map rather than western cartography orientations to the north (See Figure 1). There are also cartographic reclamations in Kanien’kéha (Mohawk) by Decolonial Atlas blog contributors Karonhí:io Delaronde and Jordan Engel (2015) identifying Kanahnòn:ke (Lake Erie) and Oniatarí:io (Lake Ontario) (See Figure 2). These water knowledges are important for understanding Indigenous water because for thousands of years Indigenous languages have evolved with the lakes coding within them a deep ancestral ecological knowledge of the Great Lakes.

FIGURE 1: Nayanno-nibiimaang Gichigamiin (The Great Lakes) Map

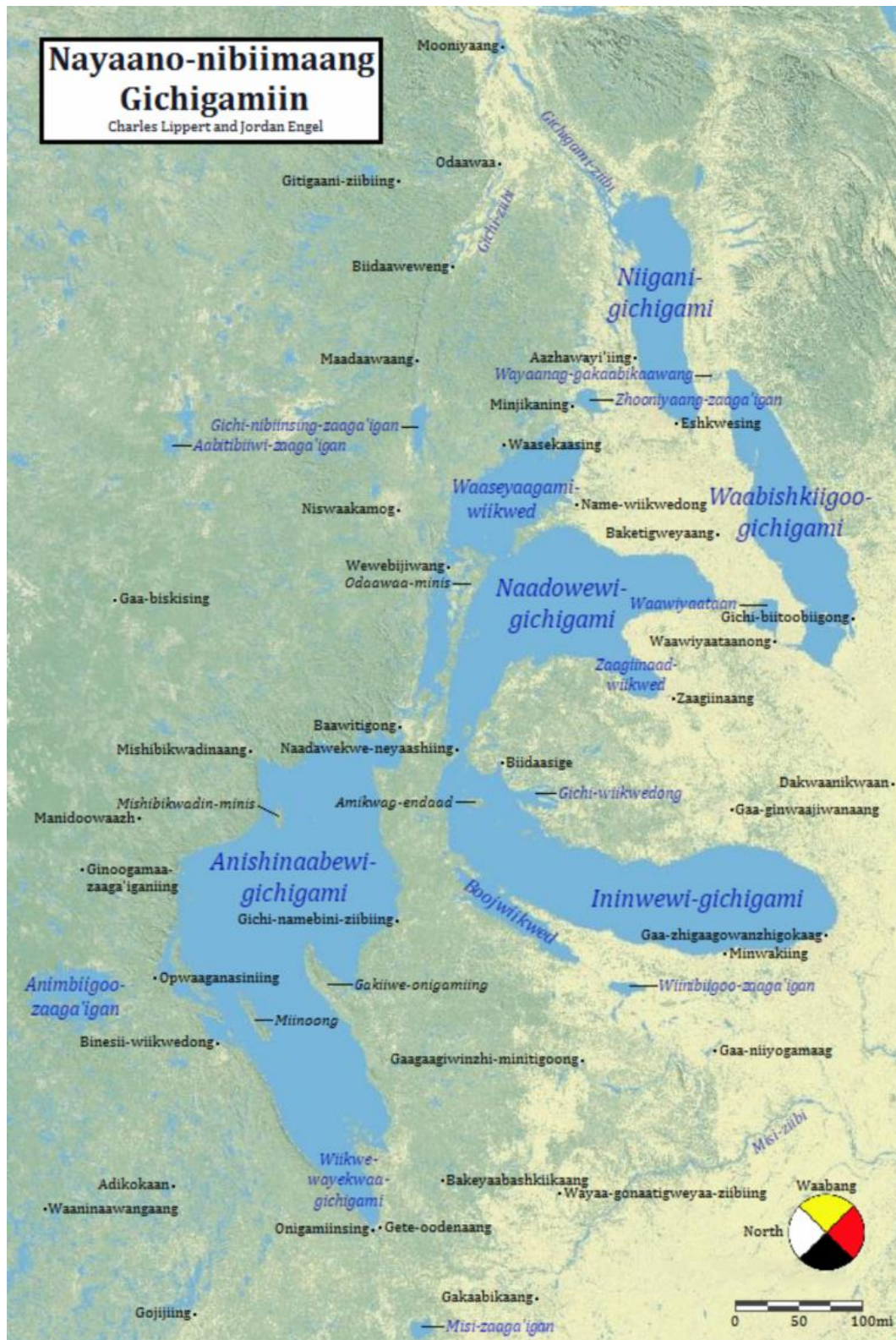


Figure 1: The Decolonial Atlas map, features an orientation to the east and identifies the lakes and key communities and places throughout the great lakes Anishinaabemowin (Ojibwe) (Lippert and Engel 2015).

FIGURE 2: Othorè:ke tsi tkarahkwíneken's nonkwá:ti ne A'nó:wara tsi kawè:note

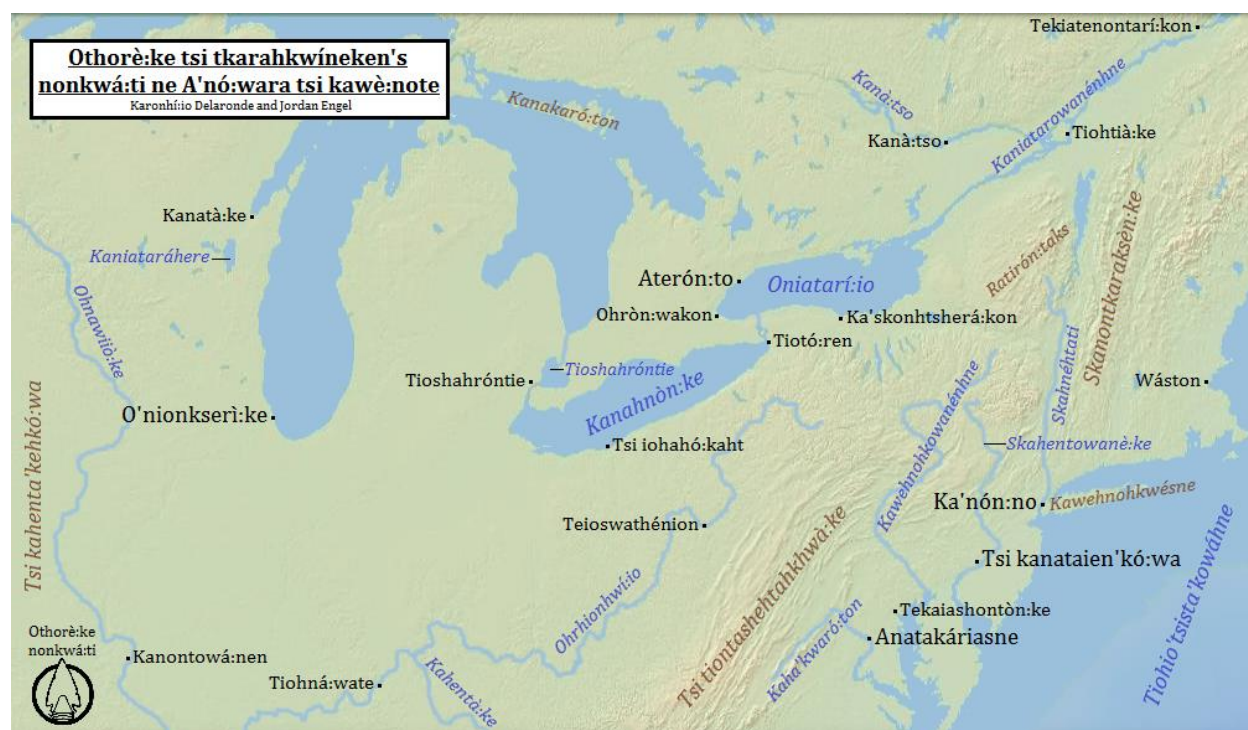


Figure 2: The Decolonial Atlas map, features Haudenosaunee territory or Othorè:ke tsi tkarahkwíneken's nonkwá:ti ne A'nó:wara tsi kawè:note (Northeast Turtle Island) in Kanien'kéha (Mohawk) (Delaronde and Engel 2015).

Indigenous Nations are inextricably connected to the Great Lakes, and their political, cultural, economic, and spiritual existence depends on the lakes' protection. Unfortunately, water governance in the Great Lakes currently lacks a coordinated transboundary strategy to participate at the highest level of decision-making for Tribal Nations, First Nations, and Métis. Water governance in the Great Lakes Basin is characterized as a highly decentralized system that presents a range of coordination problems for water governance. Indigenous participation in Great Lakes water governance is vague and void in much of the written history of legal, policy, and institutional developments in the basin. Indigenous Nations are demanding greater participation in Great Lakes water governance, articulating that their absence from the highest levels of decision-making represents a violation of Indigenous rights and treaty responsibilities

of the U.S. and Canada. The lack of equitable participation of Indigenous Nations is important for understanding the complex environmental issues facing the Great Lakes and many of the water injustices plaguing Indigenous Nations (Robison et al., 2018).

The Great Lakes water governance literature lacks a clear understanding of the Indigenous governance actors in the basin and fails to articulate the distinct legal, policy, and institutional features of Indigenous water governance. When scholars discuss Indigenous Nations in the basin they do so peripherally and in the context of U.S. or Canada jurisdictional borders, often failing to identify specific Indigenous Nations furthering Indigenous erasure in the political discourse (Song et al. 2016). In large part, this is a result of Indigenous Nations being erased from the visual representations of political boundaries in the basin – namely maps (Caquard et al. 2009). Historically, Indigenous Nations were represented on some of the earliest maps of the Great Lakes, including their Indigenous names for places in the region. However, this changed with settler expansion and the political weapon of mapping using new languages such as French and English to further Indigenous erasure (Greer 2000; Rivard 2008; Anderson 2016). There is a gap in the water governance literature more broadly with regards to incorporation of Indigenous epistemologies and ontologies (Wilson 2014). In response to this gap recent scholarship has emerged to conceptualize “Indigenous water governance” based on principles of Indigenous law, policy, and institutions for water protection (Norman 2014; Wilson 2014; Simms et al. 2016). The Indigenous water governance literature has been predominantly centered in the western regions of the United States and Canada, and examinations of its conceptualization in the Great Lakes is largely absent. This doctoral thesis aims to fill that gap and introduce the ways in which Tribal Nation, First Nation, and Métis decision-making for water protection transform transboundary management in the basin.

Context for Indigenous Water Governance in the Great Lakes

In the following section I examine the evolving conceptualizations of water governance and Indigenous water governance exploring how defining characteristics such as power, conflict, cooperation, justice, politics of recognition, and settler colonialism relate to one another and shape the discourse. Along the way I identify key Indigenous concepts missing from settler-colonial understandings of water governance. The section concludes with the introduction of seven principles of Indigenous water governance and a definition for Indigenous water governance that embraces the water ethic of the governance principles.

The term ‘water governance’ is difficult for many Indigenous Peoples to accommodate because contemporary use of the concept is confusing and unrelatable. This confusion is in part because there is no commonly accepted definition for ‘water governance’ (Villar et al. 2018). Water governance is not the same as water management because it is conceptually broader encompassing political, economic, social, and administrative processes that when implemented enable effective systems for water management decision-making (Mirzaei et al. 2019). In 2004, the United Nations Development Programme (UNDP) defined water governance as the “political, economic and social processes and institutions by which governments, civil society, and the private sector make decisions about how best to use, develop and manage water resources” (UNDP 2004, p. 10). More recently the Organisation for Economic Co-operation and Development (OECD) has stated that water governance is “the range of political, institutional and administrative rules, practices and processes (formal and informal) through which decisions are taken and implemented, stakeholders can articulate their interests and have their concerns considered, and decision-makers are held accountable for water management” (OECD 2015, p. 5). These definitions focus on water as a resource solely for human use, consumption, and

management and miss critical dimensions of Indigenous worldviews in their conceptualization such as water as a living kin relation.

These broad definitions are also difficult to mobilize at different levels of government and among the diversity of actors that are present in transboundary water contexts (Villar et al. 2018). Water governance is defined by Norman and Bakker (2009) “as decision-making processes through which stakeholders provide input, decisions are made, and decision makers are held accountable” (p. 100). They also point out that privileging any specific actor in our study of water governance risks underestimating the structures of power and agency for water decision-making in transboundary systems (Norman and Bakker 2009). However, studies of water governance in the Great Lakes mostly privilege settler-colonial actors excluding Indigenous Nations and fail to adequately account for the totality of power in water decision-making in the basin (Heinmiller 2006; Flaherty et al. 2011; Baird et al. 2016; Cook 2014; de Boer and Krantzberg 2013).

Accordingly, water governance is not only about power but the way in which power asymmetry affects conflict and cooperation for transboundary decision-making. Borgias (2018) adds to the milieu of definitions stating water governance is “the set of processes and mechanisms through which actors influence decision-making and conflict resolution related to water resources” (p. 88). Conflict is inevitable in the Great Lakes given the diversity of actors in transboundary governance of the basin. Mirumachi and Allan (2007) argue that the “co-existence” of conflict and cooperation is a defining feature of transboundary water governance (p. 1). Many of the treaties and institutional arrangements in the Great Lakes emerged in response to conflict and a desire for dispute resolution, such as the 1909 Boundary Waters Treaty and the International Joint Commission. I agree with Yates et al. (2017) that “ontological

disjunctures – conflicts over the very essence and being of water” are key to differences in water governance among Indigenous and settlers (p. 799). Embedding conflict within the definition of water governance is a bold but compelling evolution in its conceptualization forcing political discourse to recognize not only water scarcity but ontological plurality as a driving force in current governance of a precious life force. Power imbalances are also defining characteristics of water governance (Brisbois and de Loë 2016; Empinotti et al. 2019; Morrison et al. 2019; Wilson et al. 2019; Daigle 2018). Other scholars have tried to simplify the definition, suggesting water governance is “the process by which decisions about water are made” (Norman et al. 2012, p. 59). Although, simplifying the definition may also lead to key ontological and epistemological water knowledges being excluded.

Missing from the previous definitions of ‘water governance’ is a centering of equity of diverse water ethics and worldviews for water justice (Zwarteveen et al. 2017). Perhaps water scholars have been misguided in their attempts to define the concept. Definitions of ‘water governance’ should be like the water – fluid. The desire to establish a definition may stem from the discursive power the term has to shape water politics, power and control. Scholars writing on the evolution of the term have alluded to its inherently political nature,

[W]ater governance at heart is about politics. With this we mean that water governance concerns deeply political choices about where water should flow; about the norms, rules and laws on which such choices should be based; about who is best able or qualified to decide about this; and about the kind of societal future such choices support. (Zwarteveen et al. 2017, p. 8).

Thus, the existing water governance arrangements are part of a colonial project of Indigenous exclusion, which in many areas of water politics especially water law has led to paper genocide – erasure of Indigenous Peoples from existing water laws, rules, and norms. As such I argue that Indigenous water governance is grounded in the principle of

Indigenous “survivance” – the capacity of an Indigenous Nation or community to survive stressors to water governance through resilience of Indigenous water knowledges that provide a map for sustainability and protection of water for future generations.

Indigenous survivance stands in opposition to ongoing acts of water colonialism. The exclusion of Indigenous Nations from water governance is an act of water colonialism (Robison et al. 2018) that furthers U.S.-Canada politics of *aqua nullius* (Marshall 2017; Marshall 2012; Sheehan and Small 2007). The doctrine of *terra nullius* (no man’s land) was used to strip Indigenous Peoples of our homelands for European land acquisition and is the foundation of the perceived validity of U.S.-Canada property rights (Asch 2002; Miller 2011). Emerging scholarship has extended that doctrine to categorize the mistreatment of Indigenous Peoples’ water rights by colonial governments. Marshall (2012) says “governments’ lack of inclusion of Indigenous water rights and interests [...] reconstructs Indigenous water rights as *aqua nullius* or ‘water belonging to no one’” (p. 9). The dominant systems of water governance in North America were not designed by or for Indigenous Nations, and they are structured from a rights-based framework. As Simms et al. (2016) note, there are “persistent governance challenges” to the recognition of Indigenous water governance by non-Indigenous actors (p. 13). Thus, when Indigenous Nations engage in Great Lakes water governance, the U.S. and Canada view their authority as limited within a water rights context (McGregor 2014; Phare 2009).

Theories on the ‘politics of recognition’ are well documented within the Indigenous governance literature (Coulthard 2014, 2007; Ranco 2007; Daigle 2016; Simpson 2011). Canada and the United States struggle to recognize Indigenous Nations as counterparts in the legal and political plurality of Turtle Island (North America). As Coulthard (2007)

points out, “one need not expend much effort to elicit the countless ways in which the liberal discourse of recognition has been limited and constrained by the state, the courts, corporate interests, and policy makers so as to help preserve the colonial *status quo*” (p. 451). As discussed earlier the non-recognition of Indigenous water governance furthers the colonial states’ aspirations for the legitimization of *aqua nullius*. The attempt to maintain the “colonial *status quo*” has limited not only Indigenous self-determination but collaborative water governance among Indigenous and non-indigenous actors in the Great Lakes.

The intent of settler colonialism is to erase Indigenous ownership within the property rights system of western legal frameworks. Settler-colonialism in the U.S. and Canada preserves the territorial sovereignty of Euro-American/Canadian nation-states and views any acknowledgment of Indigenous territorial sovereignty over water/lands as jeopardizing settler-colonial state legitimacy. Thus, ongoing U.S. and Canadian processes of dispossession of Indigenous Peoples and alienation of Indigenous rights are part of the settler-colonial complex (Wolfe 2006; Woolford and Benvenuto 2015). This disconnect points to a larger problem with current articulations of water governance. Non-indigenous conceptualizations of water governance do not account for the diversity of Indigenous worldviews that express an epistemology of caring for water that is based on fulfilling responsibilities of stewardship, spirituality, and sustainability. This mismatch and resulting vacuum has led to the development of “Indigenous water governance” including separate institutions and processes for water decision-making.

Indigenous water governance is an extension of the existing water governance discourse that acknowledges both systems of rights and responsibilities (McGregor 2014). Similarly, to water governance, the definitions of Indigenous water governance are amorphous. However,

emerging Indigenous water governance literature does articulate key features of the concept. Wilson (2014) recognizes that “it is critical to begin with the assumption that Indigenous [P]eoples hold inherent water rights, which flow from their relationships to their traditional territories and include” decision-making power for water protection for future generations (p. 2). Indigenous water governance includes water rights, but equally respects Indigenous laws of relationality, reciprocity, respect, and responsibility. Furthermore, as McGregor (2014) points out, “Duties, obligations and responsibilities are central to realizing appropriate relationships with the Earth” (p. 501). The belief that humanity must maintain a relationship of reciprocity, respect, and responsibility to the Heart of Mother Earth (the Great Lakes) is often misunderstood or blatantly disregarded by colonial governments in favor of prioritizing human use over ecosystem health.

Water governance scholars argue that these misunderstandings may result from the failure to value and incorporate Indigenous Knowledge in decision-making processes (von der Porten et al. 2016). The application of Indigenous water governance in the literature is more tenuous as scholars tend to focus on how Indigenous water governance can be integrated into existing western systems rather than the integration potential of western systems into Indigenous water governance contexts (Hill et al. 2008; Johns 2017; Kanwar et al. 2016). Removed from this type of discourse on Indigenous water governance are Indigenous Nations and the peoples they represent. These conceptualizations center on how Indigenous Peoples relate to the colonial state and not on Indigenous epistemologies and ontologies.

This is also why the concept of ‘water governance’ is unrelatable to many Indigenous Peoples as it is centered within western doctrine and academic jargon. However, Indigenous scholars such as Deborah McGregor, Aimée Craft, John Borrows, Virginia Marshall, Bradley

Moggridge, Jacinta Ruru, Marlowe Sam, Kyle Whyte, Nicholas Reo and others have worked to re-center the discourse on Indigenous water governance within an Indigenist framework (McGregor 2014; Craft 2016; Borrows 1997; Marshall 2014; Moggridge 2005; Ruru 2013; Sam and Armstrong 2013; Whyte 2014; Reo 2011). According to Shawn Wilson (2007), the Indigenist research paradigm “must be developed further by all those whose world view and existence originates in this domain” (p. 195). Many Indigenous scholars are using the Indigenist paradigm to introduce a new conceptualization of water governance they call “Indigenous water governance,” which is grounded in Indigenous epistemology, self-determination, language, culture, and traditional knowledge (Wilson 2007). As Zwarteveen et al. (2017) note within political science the term ‘governance’ refers to a transformation in how society is governed (p. 2). Therefore, Indigenous water governance recognizes the diminishing role of the colonial state in governing Indigenous Peoples relationships with water as Indigenous Nations reclaim our water sovereignty and work to transform existing systems so they are reflective of and responsive to Indigenous Peoples.

From the collective of understandings within the literature I put forward the following synthesized seven principles of Indigenous water governance: (1) Relationality – recognizes that water is a living entity; (2) Justice – affirms Indigenous and treaty rights; (3) Respect – respects Indigenous sovereignty and self-determination; (4) Harmony – centers Indigenous worldviews; (5) Inclusivity – values Indigenous science and knowledge systems alongside other scientific traditions; (6) Reciprocity – incorporates holistic co-governance models; and (7) Responsibility – fulfills responsibilities to all life and future generations (Craft 2013; McGregor 2014; Wilson 2014; Black and McBean 2017; Simms et al. 2016; von der Porten et al. 2016; Norman 2014; Norman and Bakker 2017; Bradford et al. 2017; Wilson and Inkster 2018) (See Figure 3).

FIGURE 3: Seven (7) Principles of Indigenous Water Governance



Accordingly, Indigenous Water Governance encompasses practices of nationhood, decision-making, citizenship, and diplomacy by Indigenous Peoples in fulfillment of responsibility to future generations and water as a living relation. The operationalization of Indigenous water governance can be in resistance to oppressive water governance regimes and contribute to the decolonization of water decision-making processes (Marlowe and Armstrong 2013; McGregor

2012; Wilson 2014). Importantly despite the novelty within the literature, Indigenous water governance is not a new phenomenon in response to colonization; rather, it is a reclamation of ancestral ways since time immemorial.

Theoretical Framework

The research was informed by the literature on Indigenous water justice, settler-colonialism, multilevel governance, water governance, and Indigenous politics (Robison et al. 2018; Reo et al. 2017; Papillon 2011; Wilson 2014; McGregor 2014; Ladner 2014). Indigenous water justice builds upon scholarship on environmental justice (EJ) -- defined as the struggle for an equitable distribution of environmental burdens and benefits across racial, ethnic, and economic groups -- a well-developed area of study in the United States but which has not yet obtained the same level of visibility in Canada (Haluza-Delay 2007). Narrowing from EJ, the study of Indigenous water justice/injustice necessitates an examination of not only power relations among peoples that tend to result in a disproportionate burden of injustice being shouldered by less dominant segments of society, but also the colonial legacy that continues to play out in laws, court cases and policies that structurally enable continued assaults on Indigenous waters and lives (Robison et al. 2018; Anaya 2014). Aimée Craft (2017) has posited that Indigenous Knowledge Systems (IKS) conceptualize water as not only a living entity, but that water has legal personality under Indigenous Law. This thesis articulates, Indigenous perspectives on the laws, norms, protocols, customs, institutions, policies, and processes Great Lakes Indigenous Peoples and Nations deem essential for achieving Indigenous water governance in the basin.

The conflicting paradigms for Great Lakes protection are often attributed to the legacy and ongoing acts of settler colonialism. According to Wolfe (2006), “settler colonialism is an

inclusive, land-centred project that coordinates a comprehensive range of agencies, from the metropolitan centre to the frontier encampment, with a view to eliminating Indigenous societies” (p. 393). It is important to emphasize here Wolfe’s defining characteristic of settler colonialism – the intent to eliminate Indigenous societies. This doctoral thesis examines the ways in which Indigenous elimination from modes of Great Lakes water governance are reinforced by settler colonialism and whether existing institutions can ever adequately represent Indigenous societies. A precondition for settler colonialism is violence by the colonial state with the intent to remove Indigenous Peoples’ connection to the land (Harris 2004). In this way, settler colonialism is a theoretical underpinning for the connections Indigenous women have made to the violations of their bodies, a traumatic generational epidemic of violability, and the rape of Mother Earth. The advancement of heteropatriarchy and expansion of settler colonialism have disenfranchised Indigenous women as water citizens. Indigenous women have distinct roles within Indigenous water governance systems and their exclusion from dominant water regimes has increased opportunities for water exploitation (Arvin et al. 2013). Anishinaabe scholar Kyle Whyte (2016) describes settler colonialism as a crisis of environmental justice,

[S]ettler colonial societies seek to inscribe their own homelands over indigenous homelands, thereby erasing the history, lived experiences, social reality and possibilities of a future of indigenous peoples. Settlers seek to inhabit the territories they newly inhabit as if they are—so to speak—the ‘indigenous’ populations. Settler colonialism can be interpreted as a form of environmental injustice that wrongfully interferes with and erases the socioecological contexts required for indigenous populations to experience the world as a place infused with responsibilities to humans, nonhumans and ecosystems. (p. 3).

In terms of water and settler colonialism, the erasure of Indigenous modes of water governance is a result of the eliminatory intent of the colonial project and further exacerbated by the genocidal policies that removed Indigenous Peoples, especially children, from our homelands. Whyte

(2016) further notes that settler colonialism is “a structure of oppression that specifically targets [I]ndigenous [P]eople’s ability to experience the world as imbued with responsibilities” (p. 14). I argue in this doctoral thesis that that existing water governance structures fail to recognize Indigenous responsibilities for water because they exist within the settler-colonial project. Phare (2009) and Castleden et al. (2017) expand on these theories to attribute the deplorable drinking water crises facing First Nations in Canada to settler colonialism.

This thesis broadens our understanding of settler colonialism from exploitations of land to also include water as equally valuable for exploitation within the settler-colonial complex. I argue that the Canadian and U.S. settler colonial complex of which existing water governance regimes are a part are the result of political processes of ongoing water colonialism through which waterscapes and relations with Indigenous Nations are shaped and reshaped. A recent study examined the impact of settler colonialism on Columbia River Basin water governance finding that the desire for domination over nature cannot be separated from the settler-colonial acts of domination towards Indigenous Peoples and that analysis of the manifestations of dominance must be specific to local geography (Schneider 2013). However, absent from much of the literature is an analysis of the way settler colonialism has impacted Great Lakes water governance given the transboundary jurisdictional complexities of the Great Lakes region.

Processes of settler colonialism exist across all levels of government in water decision-making. I apply theories of multilevel governance (MLG) to better understand the role of settler colonialism in diminishing Indigenous water governance in existing water regimes. The first investigations of multilevel governance are attributed to Marks (1993), who examined the European Union’s shift to a decentralized governance system, which he characterized as “a system of continuous negotiation among nested governments at several territorial tiers” (p. 392).

Later iterations have applied the theory to the U.S. and Canadian context of water governance to examine the coordination of various levels of government for water governance (Moss and Newig 2010; Norman and Bakker 2009). Recently the literature on multilevel governance has expanded to interpret the negotiations of Indigenous Nations and settler-colonial states (Alcantara et al. 2016; Alcantara and Nelles 2014; Ladner 2016; Papillon 2011). In Chapters 2 and 4 of this thesis I draw on multilevel governance theory to address an undertheorized subfield that links multilevel governance and Indigenous water governance in the Great Lakes. Therefore, this doctoral thesis expands on the water governance framework to include Indigenous actors to create a more holistic understanding of transboundary water governance. According to de Boer and Krantzberg (2013), “incremental policy formation” in the basin excludes non-dominant actors in the Great Lakes water regime and illustrates the failure of institutional interplay across regimes present in basin transboundary governance (p. 329).

Generally, there is an assumption of plentiful water resources and limited scarcity in the Great Lakes region. However, this myth was debunked by Bakker and Cook (2011), who find that water security, lack of adequate quantity and quality of water for human livelihood coupled with acceptable level of water risks (Grey and Sadoff 2007), is a concern in the Great Lakes and in many instances exacerbated by crises of water governance. They also attribute a shift in existing water governance processes to include Indigenous Nations to new legal requirements for their engagement and participation in water decision-making (Bakker and Cook 2011, p. 278). These shifts in water institutions have led to more expansive theoretical explorations of Indigenous water governance. However, McGregor (2014) notes that the politics of recognition are not sufficient to protect the water, “[t]he main driver for First Nations involvement in water governance stems from the recognition of Aboriginal and treaty rights. However, recognition of

rights alone will not be enough to protect water; realizing responsibilities must also be seen as integral to this goal” (p. 501). According to McGregor (2014), Indigenous water governance must be situated within Indigenous Knowledge Systems that recognize not only rights-based but responsibility-based approaches to water protection. As McGregor (2014) calls for, this doctoral thesis respects Indigenous sovereignty and aims to reorient the study of water governance to honour Indigenous Nation treaties as the first transboundary water agreements in the Great Lakes. Our responsibilities and relations to the water as Indigenous Peoples are integral to defining Indigenous water governance.

Further definitions of Indigenous water governance refer to the ways Indigenous Peoples participate in water decision-making in distinctive and adaptive fashion over time (Wilson 2014; Simms et al. 2016; Sam and Armstrong 2013; Norman 2014). However, this definition is broad in scope and does not adequately account for Indigenous Knowledge Systems as encouraged by AnishinaabeKwe scholar Deborah McGregor. Additional theoretical areas for exploration of Indigenous water governance include relationships to water based on maternal connection (Brant 2014; Olson 2012); responsible stewardship (Castleden et al. 2017); nation-to-nation relationship (McGregor 2014); and resistance practices (Sam and Armstrong 2013).

In many ways, the failure to account for Indigenous water knowledges, including their survivance and transmission, is a water insecurity issue facing many Indigenous Peoples. The concept of water security was defined by Grey and Sadoff (2007) “as the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies” (p. 545). This widely accepted definition within water policy fails to account for Indigenous water governance worldviews because it is anthropocentric and positions water risks as

potentially acceptable if there is enough economic value. In contrast, Indigenous water governance systems, such as the Anishinaabek and Haudenosaunee, would position the health of the water and ecosystem before human or economic valuations considering water decisions for their impacts on future generations of human and non-human relations.

In 2011, Zeitoun expands the definition to include the interconnected “web of water security” that also encompasses climate, energy, and food security in addition to human and national security. The definition was further refined “as an acceptable level of water-related risks to humans and ecosystems, coupled with the availability of water of sufficient quantity and quality to support livelihoods, national security, human health, and ecosystem services” (Bakker 2012, p. 914). However, these definitions as previously noted do not account for Indigenous knowledges of interconnectedness, relationality, as well as cultural and ceremonial responsibilities of Indigenous Peoples to water. The non-indigenous definitions position security primarily within the context of human beneficial uses. Although there are passing mentions of environment and ecosystem services, in practice the environment is valued in so much as it serves human benefit. In contrast water security in an Indigenous context prioritizes water as a living being; accounts for water and non-human relations’ livelihoods before humans; and protects cultural and ceremonial responsibilities to water in addition to a basic human right to water (Longboat 2012).

Indigenous Resistance and other modalities of Survivence

Indigenous water governance also functions as an Indigenous performance of sovereignty through acts of resistance, such as blockades or territorial/land occupations. As Frantz Fanon (1963) notes, decolonization is an ongoing process that must consider the historical processes that result in social change. Furthermore, ongoing acts of colonialism against Indigenous Nations

necessitate local acts of resistance that are “scalable” and contribute to transformation of political processes in “larger domains” (Perley 2006). Indigenous resistance to existing water regimes centers on the failed politics of recognition of Indigenous nationalism. Indigenous nationalism refutes hegemonic water governance structures that fail to recognize Indigenous Peoples as distinct nations with inherent sovereign rights rather than ethnic minorities, stakeholders, or special interest groups (von der Porten and de Loë 2013; Alfred and Corntassel 2005). Indigenous nationalism further rejects ongoing acts of colonialism veiled in paternalism by the settler-colonial complex. Indigenous Peoples are resisting the dispossession of territory/resources, discrimination against Indigenous women, and devaluing of Indigenous knowledge. This doctoral thesis critically assesses and explicates these sites of resistance as assertions of Indigenous nationalism, the belief that Indigenous Peoples may constitute distinct nations with inherent sovereignty, in water governance in the GLSLRB.

Indigenous nationalism is defined by the performance of Indigenous sovereignty and rooted in Indigenous politics. Indigenous politics is a theoretical framework that predates the formation of the United States and Canada. Contemporary Indigenous Politics is often concerned with the positioning of Indigenous Nations in opposition to the settler-colonial complex (Lightfoot 2016; Anaya 2004), but prior to the colonization of Turtle Island there was a rich history of governance and dynamic political interaction among diverse Indigenous Nations and civilizations. However, recent literature on the area of study has explored the conflicts between Indigenous politics and the settler-colonial state system within international relations (Beier 2005; Lightfoot 2016). Lightfoot (2016) identifies how Indigenous politics marks a shift in international relations where Indigenous Peoples’ rights are a perceived threat to the settler-colonial state who actively resist their implementation. Indigenous water rights and the modes of

water governance that inform the implementation of those rights are a key area of exploration in this doctoral thesis. In the same way that Lightfoot (2016) calls for a re-thinking and re-ordering of sovereignty, territoriality, liberalism, and human rights, I suggest a re-thinking and re-ordering of water governance that centers Indigenous worldviews and water knowledges. Kevin Bruyneel (2012) highlights the devaluing of Indigenous politics within political science,

The discipline of political science does not take indigenous politics seriously. To be sure, there are political scientists who have made important contributions to the study of indigenous politics. However, the bulk of the discipline either does not place indigenous politics in its field of vision or it analyzes it through frameworks that forestall adequate analysis. (p. 1)

With this in mind, this doctoral thesis aims to situate Indigenous politics of water governance within the field of political science and contributes to our understanding of comparative politics and international relations.

According to Kiera Ladner (2017), Indigenous politics has predominantly been studied from a western Eurocentric perspective to the disadvantage of Indigenous Peoples' ontologies, epistemologies, and methodologies (p. 164). Indigenous politics is thus largely concerned with Indigenous articulations of political identity and Indigenous political traditions (Ladner 2016). This thesis research privileged Indigenous methodologies in the conceptualization, collection and analysis of empirical data to advance the liberation of Indigenous politics and decolonization of the discipline of political science. Indigenous politics is a common strand of this thesis with explorations of the political identity of Indigenous Peoples in the Great Lakes as expressed through water governance.

This thesis also includes theoretical explorations of Indigenous ecofeminism for water protection (Stewart-Harawira 2007; Goeman 2009; Arvin et al. 2013; Barker 2015). The (re)claiming of political power by Indigenous women has created a climate for (re)visioning

transboundary water governance with a focus on valuing Indigenous Knowledge Systems (IKS), including Indigenous women's knowledge, for water security. Indigenous women are known as “water carriers” – the carriers of ancestral traditional knowledge that now informs our contemporary mobilization for the protection and democratization of water governance (Anderson et al. 2013). Indigenous women's bodies are inherently tied to our ancestral homelands and often violations of land and water are reimagining colonial violence against Indigenous women and reinforcing legacies of ecocide and historical trauma. There are differential and gendered impacts of water colonialism on Indigenous women, including diminished roles in water management, inaccessibility to sacred water sites, and intergenerational trauma (Gunn 2014). In addition, this doctoral thesis expands upon and adopts an Indigenist theoretical conversation, including concepts such as environmental citizenship, kinship diplomacy, policy transfer, transformative learning, and public opinion polling. These are discussed in the context of particular studies as appropriate.

Gaps Identified in the Current Literature

I identified several gaps in the current literature on Indigenous water governance which this dissertation aims to address:

- Research on the evolution of existing institutions for multilevel water governance in the Great Lakes have not fully accounted for Indigenous actors. (Chapter 2)
- Limited comparative public policy research considers the strategies Indigenous Nations employ to navigate complex transboundary and interjurisdictional policy coordination with the United States and Canada in the context of water governance. (Chapter 2 and 4)

- Previous studies have focused on decolonization as a priority motive for enactments of Indigenous water governance (Wilson 2014; Simms et al. 2016). However, such research centers the settler-colonial state as the driver of Indigenous practice. Few studies focus on Indigenous autonomy and sovereignty to examine the motivations for Indigenous water governance as informed by Indigenous Peoples. (Chapter 2)
- Limited research on mobilization of water governance, diplomacy and citizenship between Indigenous Nations, specifically research focusing on the resurgent Indigenous water knowledges of the Great Lakes. (Chapter 5)
- There has not previously been a study exploring Indigenous Peoples' public opinions on Great Lakes protection. (Chapter 3)
- Few/No empirical case studies of Indigenous Water Governance in the Great Lakes exist using an Indigenous Water Governance conceptualization. (Chapter 4)
- Few studies have examined the history of water colonialism and its impacts on Indigenous Peoples in the Great Lakes. (Chapter 2 and 4)
- Lastly, existing literature fails to account for the gendered responsibilities of water governance and how gender reproduces disparate water security concerns for Indigenous Peoples. (Chapter 5)

Overarching Research Question and Objectives

Having outlined the context and theoretical framework for Indigenous water governance in the Great Lakes, the following are the research questions explored in this dissertation:

- 1) What are Indigenous Nations' desired outcomes for Indigenous water governance in the Great Lakes St. Lawrence River Basin?*
- 2) What are the processes of Indigenous water governance and how is it performed, supported and contested in the Great Lakes St. Lawrence River Basin?*
- 3) How are Indigenous water governance processes different than existing settler-colonial water governance mechanisms in the Great Lakes St. Lawrence River Basin? and*
- 4) What is the degree of differentiation or uniformity amongst Great Lakes Indigenous Nations/actors in these processes?*

A decolonial hydro-narrative aims to support Indigenous Nations in their efforts to co-govern the basin and promote the efficacy of Indigenous knowledge for water decision-making. This doctoral research highlights strategies, policies, and best practices among Indigenous Nations for protection of the Great Lakes. In so doing, the key objectives used in the dissertation to address this research question include:

- 1.1** to investigate the extent to which Indigenous Nations participate in the governance of the GLSLRB;
- 1.2** to ascertain why the current GLSLRB institutional framework for water governance is supported, challenged, or contested by Indigenous Peoples; and
- 1.3** to examine the values and beliefs of Indigenous Peoples in the Great Lakes related to existing (colonial) water governance mechanisms and transboundary agreements;
- 1.4** to explore the process of reclamation of Indigenous water knowledges through water diplomacy and citizenship.

This doctoral thesis aims to fill the identified research gaps through the above objectives contributing to a broader understanding of Indigenous water governance and localized application within a Great Lakes case study context.

Contributions & Significance

The core academic contribution of this doctoral thesis is to further our understanding of Indigenous Water Governance (McGregor 2014; Wilson 2014; Simms et al. 2016; Sam and Armstrong 2013). Indigenous water governance requires that we explore the following factors related to Indigenous engagement and participation in water decision-making: (1) historical examination of the roles of Indigenous Peoples and their (under)representation in existing water regimes; (2) geopolitical scale differences of Indigenous water governance performance; and (3) modes of survivance of Indigenous water knowledges despite water colonialism. The Great Lakes context is important for addressing the larger gap in Indigenous water governance literature because it incapsulates a broader range of issues than places that are dealing only with water scarcity, and instead requires the full range of issues and values that will push our understanding of Indigenous water governance and resonate amongst many other geographies.

This thesis contributes to our understanding of the history of the transboundary multilevel governance of the Great Lakes as it traces the exclusionary practices of water colonialism and its ramifications on Indigenous Peoples in the basin, who have largely been excluded or underrepresented in existing water governance institutions. This contribution is significant because it identifies a bias within existing water governance mechanisms in the Great Lakes towards specific geographies, issues, and political actors that conform to settler-colonial ontologies and epistemologies.

This thesis further contributes to framing water governance crises within an Indigenist perspective as a quintessentially Indigenous project that addresses questions of concern to Indigenous Peoples and our nations as we work to build adaptive capacity for transboundary water security. The Indigenous perspective put forward in this dissertation is also in support of the sovereignty and co-developed research aims of my research partners and collaborators.

Positionality

My study of Indigenous water governance in the Great Lakes is rooted in my identity as an Indigenous scholar/activist. I am an enrolled citizen of the Shinnecock Indian Nation, a Tribal Nation located on the east end of Long Island, New York. The Great Lakes are home to many Indigenous Nations of the Anishinaabe, Haudenosaunee, Métis, Algonquin as well as other Indigenous nationalisms. It is said that long ago there was a great migration where the Anishinabek traveled west to find the “place where food grows on water”. The people who stayed behind, like my nation, are known as the Wa-bun-u-keeg' (The Daybreak People). In later centuries, more migrations would occur as “praying” Indians, including Shinnecocks, left the east to find their relatives in the Great Lakes and escape settler-colonial persecution and genocide. I share this with you because as Shawn Wilson (2008) states “Indigenous research is the ceremony of maintaining accountability to these relationships. For researchers to be accountable to all our relations, we must make careful choices in our selection of topics, methods of data collection, forms of analysis and finally in the way we present information.” Great Lakes research on Indigenous water governance is ceremony as I begin to understand my place in histories of migration and protection of the lifeblood of Mother Earth – water. This research is part of my ceremony as a nipisqua (water woman) to reconstitute traditional kinship networks

that embrace a holistic stewardship of water that binds Indigenous Nations from the Great Saltwater and the Great Lakes in our shared understanding that water connects us all.

As a researcher within the field of political science, my study of political ontologies and epistemologies is rooted in my Indigenous citizenry belonging to one of the oldest continuously self-governing Indigenous Nations in the United States – the Shinnecock Indian Nation. My people are renowned for our history as whalers circumnavigating the world and our ongoing stewardship of the Ocean as fisher and bay people harvesting from the land and sea. We also are known for our ability to fashion wampum – the quahog beads used throughout history as both currency and to constitute treaty relationships between Indigenous and settler-colonial peoples. Here in the Great Lakes, many of the foundational treaty relationships such as the Two Row Wampum and Dish with One Spoon were constituted by a wampum belt. The wampum beads that formed these belts came from the waters of the eastern shores where my Nation has existed since creation. Our beads traveled in performance of wampum diplomacy to carve out new covenants of relationality here in the Great Lakes. In very much the same way, my doctoral research journey has formed me like a wampum bead carved out of the sea by eastern Indigenous diplomacies traveling west along the path of the great migration to find myself in the place where food grows on water. In this new place, I and my research are but one bead in a constellation of white and purple hues of wampum beads that will help to define the future of Indigenous politics on Turtle Island.

Most importantly, this research journey has inspired a resurgent kinship with water and a desire to ensure Indigenous water knowledges are valued and resilient. I am committed to Indigenous data and research sovereignty going beyond the guidelines outlined in the OCAP (Ownership, Control, Access, Possession) principles to tailor the research to the unique laws and

customs of the Nations and communities who partnered with me on this doctoral journey. In doing so, I am dedicated to Indigenist research methodologies privileging Indigenous voices, ontologies, and epistemologies that have for too long been excluded.

Methodology

The doctoral research conducted across the four studies employs an Indigenous community-based research approach that is informed by Indigenous methodologies, localized cultural protocols, and Indigenous data sovereignty. Importantly, the research ethics protocol undertaken in this thesis research adheres to Chapter 9 – Research Involving the First Nations, Inuit and Métis Peoples of Canada – of the Tri-Council Policy Statement on ethical conduct of research involving humans (Canadian Institutes of Health Research, Canada, Natural Sciences and Engineering Research Council of, Canada, & Social Sciences and Humanities Research Council of Canada, 2010). However, this research also goes beyond the Tri-Council recommendations to follow the research ethics laws and policies of each of the partner nations in recognition of their sovereignty and inherent rights to all research conducted in their territories. The research design was responsive to ceremony. Ceremony is critical to Indigenous research (Craft 2016; Hart 2009). The Indigenous methodologies utilized in this research are detailed in the activities in Table 1.

Table 1. Indigenous Research Methods Employed for Doctoral Thesis Research

Research is Ceremony	Location	Dates
<i>Hamilton Harbour Water Walk</i>	Hamilton, Ontario, Canada	September 2017
<i>Great Lakes Water Walk</i>	Toronto, Ontario, Canada	September 2017
<i>Visiting with Lake Ontario</i>	Lake Ontario	September 2017
<i>Water Walker Survey Design</i>	McMaster	September – October 2017
<i>Water Walker Survey Data Collection</i>	McMaster	October 2017-July 2018

<i>Call for Indigenous Water Governance Project Partners</i>	McMaster	January 2018
<i>McMaster Spring Water Forum – The Water Walkers</i>	Hamilton, ON, Canada	April 2018
<i>Manoomin (Wild Rice) Research Conference</i>	Duluth, Minnesota, USA	April 2018
<i>Review of Partnership Applications</i>	McMaster	April 2018
<i>Consultations with Interested Partners for Project alignment</i>	McMaster	May 2018
<i>Selection of IWG Project Partners</i>	McMaster	June 2018
<i>Wisconsin River Water Walk</i>	Watersmeet, WI, USA	July 2018
<i>Sault St. Marie Tribe of Chippewa Indians Community Visit</i>	Sault St. Marie, MI, USA	July 2018
<i>Consultations with Partners on Project Design and Drafting Partnership Agreement</i>	McMaster	June-July 2018
<i>Mni Ki Wakan World Indigenous Peoples Decade of Water Summit</i>	Minneapolis, Minnesota, USA	August 2018
<i>Visiting with Lake Huron</i>		July – August 2018
<i>Visiting with Lake Michigan</i>	Lake Michigan	July – August 2018
<i>Grand River Water Walk</i>	Ohswegen, Ontario, Canada	September 2018
<i>Water Walker Interviews</i>	Great Lakes, McMaster	July – September 2018
<i>Visiting with Lake Erie</i>	Lake Erie	September 2018
<i>Walpole Island First Nation Community Day – Set up project Information Table</i>	Walpole Island First Nation	September 2018
<i>Consultations for Water Workshop Content</i>	McMaster	August – October 2018
<i>World Indigenous Law Conference – Presentation on Findings</i>	Windsor, ON, Canada	October 2018
<i>Red Rock Indian Band Water Workshop</i>	Red Rock Indian Band	November 2018
<i>Long Lake #58 First Nation Water Workshop</i>	Long Lake #58 First Nation	November 2018
<i>Visiting with Lake Superior</i>	Lake Superior	April, August, November 2018
<i>Walpole Island First Nation Water Workshop</i>	Walpole Island First Nation	December 2018
<i>Data Analysis</i>	McMaster	September – December 2018
<i>Results Sharing and Feedback</i>	McMaster	January 2019
<i>Consultations with communities for future research planning</i>	McMaster	March 2019

Research for this dissertation was conducted between 2016 and 2018. Table 1 provides an overview of the research timeline for activities conducted as a part of this thesis. It should be noted that the partnerships with the Indigenous Nations and Peoples who collaborated on this project will not cease after the thesis submission. Within Indigenous protocols and research methodologies, we have entered into ceremony, and we have built relationships that constitute us as kin in our fulfillment of our responsibilities to care for the water. As such, future expansions of the research are being planned and product deliverables that sit outside of academic institutions, such as mapping, community events, and water governance plans, will be completed.

This research builds on the methodologies utilized in the emerging body of research on multiple and diverse Indigenous legal traditions, justice and orders (Borrows 2010; Napoleon and Friedland 2014; Ma'iingan 2010; Napoleon 2007) in which stories are respected as significant sources of law, justice and governance. Indigenous theoretical frameworks, epistemologies, paradigms and knowledge systems were central to the research approach (Hart 2010). The case study method utilized for this thesis is particularly beneficial in Indigenous research for its ability to use multiple sources, such as: documents, interview, focus groups, and observations providing unique level of depth to policy descriptions (Gerring 2004). This research was built upon the practice of, and commitment to, establishing genuine and meaningful relationships with Indigenous communities (Absolon 2011; Kovach 2009). Fundamentally, such research approaches and methods reflect Indigenous Peoples' relationships to water (Kovach 2009; McGregor 2013; Wilson 2008) and as such are best suited for further developing Indigenous water governance scholarship.

This research utilized a “knowledge sharing” research paradigm, in which knowledge is shared rather than extracted from Indigenous peoples (McGregor et al. 2010; Smylie 2011). A blended research approach was utilized which focused on “storywork” as a form of research which requires engaging in dialogue and learner relationships as described by Archibald (2008). Storywork was informed by Napoleon & Friedland’s 2014 *Accessing Justice and Reconciliation* project’s methodological approach in which oral tradition and stories were the main method of data gathering and analysis involving Elders and knowledge holders (Friedland and Napoleon 2015). Multiple data-gathering methods were used, including: a) workshops for sharing IKSs and water governance experiences, b) storywork with Indigenous water walkers, Elders, Traditional knowledge (TK) holders, and Indigenous leaders (Graveline 2000; Kovach 2010), and c) surveys. These methods also involve documenting traditional and contemporary Indigenous governance theory, or governance that deviates from western principles (Riley 2007) and is based on Indigenous government principles informed by culture, language, and traditions, as well as perspectives and practices as understood from an IKS framework.

Ultimately, this research set out to be of most use to the Nations and Peoples who committed to sharing their stories and to knowledge exchanges. Therefore, in reciprocity, the research needs to be of most beneficial use to the Nations who gave their time and in many ways that will not be fully realized with a thesis manuscript. For instance, additional product deliverables based on the research include maps, planning a water gathering, developing water colonialism resistance plans to name a few. As this project is one of the few studies to explore Indigenous water governance in the Great Lakes and to include partnerships with Great Lakes Indigenous Nations, we have only started to explore the wealth of knowledge Indigenous Nations

desire to bring to the forefront of transboundary Great Lakes governance and as such, future research in the field will be of significant benefit for Indigenous Peoples and Nations.

Research Setting

I developed a new dataset for this thesis called GLIAD (Great Lakes Indigenous Actors Dataset) which identifies Indigenous actors across the entirety of the Great Lakes drainage basin including Indigenous Nations and Indigenous regional, intertribal, political and territorial organizations. The dataset features 224 unique Indigenous Great Lakes actors. The data was collected from U.S. Bureau of Indian Affairs, Crown-Indigenous Relations and Northern Affairs Canada, as well as web searches to identify new actors and cross-reference existing actors for data saturation. The dataset is a living project that only identifies Indigenous actors, synthesizes existing publicly available data, and combines geographic information system (GIS) approaches for mapping actor presence in the basin as of September 2019.

There are 97 Indigenous Nations¹ with occupied territories² within the Great Lakes drainage basin (Figure 1). The Great Lakes are connected to the Atlantic Ocean by the St. Lawrence Seaway and there are 112 Indigenous Nations³ with occupied territories in the combined Great Lakes and St. Lawrence River drainage basins that connect to the Atlantic Ocean. When transboundary water governance scholars consider the entirety of the basin system the number of Indigenous Nations with a right and responsibility for the water of this region

¹ Indigenous Nations is used to describe the political entities representing distinct national groups of Indigenous Peoples. Within the Great Lakes context this includes Tribal Nations, First Nations, and Metis.

² “Occupied territories” includes currently occupied lands of Indigenous in the basin as of September 5, 2019 such as unceded ancestral and aboriginal lands within the jurisdictional control of Indigenous Nations as well as lands set aside by the U.S. and Canadian federal governments for the use and benefit of Indigenous Nations (sometimes referred to as reserves or reservations). However, it does not include the full expanse of treaty lands, unceded lands, or ancestral lands Indigenous Peoples have within the Great Lakes but have been forcibly removed from through colonialism and genocide.

³ Author’s own database.

grows exponential to more than 200 Indigenous Nations.⁴ The water is an ancestral relative that is living and has a spirit (Craft 2013). For millennia the water has connected many Indigenous Nations and served as a conduit for an elaborate network of kinship and Indigenous diplomacy for millennia. However, Great Lakes scholarship has largely excluded Indigenous Nations from the international relations of transboundary water decision-making focusing primarily on the interactions of the United States and Canada (Johns and Thorn 2015; Carroll and Mack 1982; Lemarquand, 1993; Jetoo et al. 2015; McLaughlin and Krantzberg 2011). Thus, the subsequent comparative transboundary water governance analysis on how Indigenous Nations engage with the United States and Canada is needed.

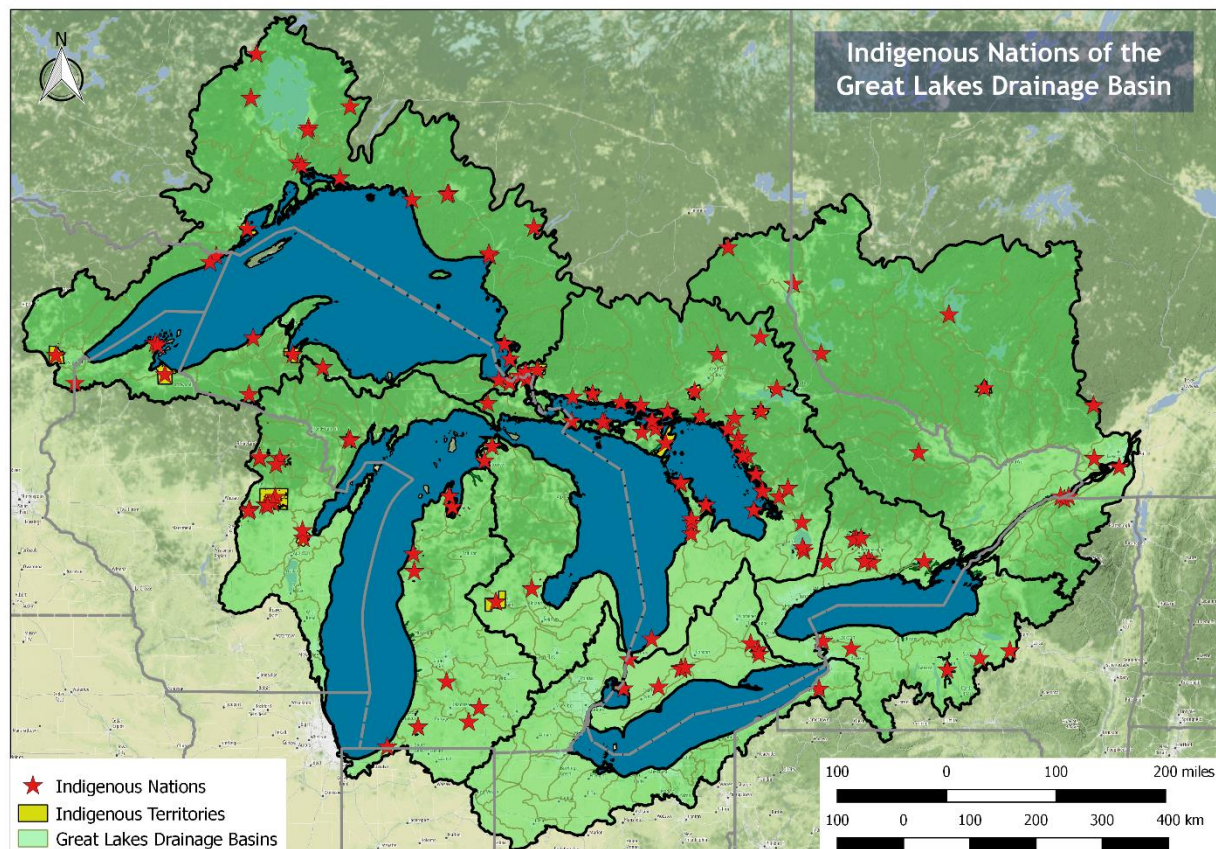


FIGURE 4: Great Lakes Drainage Basin Indigenous Nations Map (Author created)

⁴ Author's own database – GLIAD 2019.

Overview of Indigenous Water Governance Challenges in the Great Lakes

Indigenous water governance challenges in the Great Lakes are generally framed as infrastructure or drinking water problems (Arsenault et al. 2018; Marshall et al. 2018; Bakker and Cook 2011), but an indigenist paradigm reveals additional critical challenges such as cultural, ceremonial, and kinship loss (McGregor 2014; Craft 2013; Reo et al. 2017). In addition to drinking water quality issues, some of the water governance challenges Indigenous Nations in the basin are grappling with include climate change, invasive species, algal blooms, groundwater extraction, threatened Manoomin (wild rice in Anishinaabemowin) habitats, fossil fuel production, mining, nuclear waste disposal, and contaminated sites (Singel and Fletcher 2006). In Canada, drinking water advisories on First Nations reserves have been of increasing awareness for water scholars, practitioners and the public in large part due to Prime Minister Justin Trudeau and the Liberal government's commitment to end all long-term drinking water advisories on reserves by 2021 (Indigenous Services Canada 2019). The more remote Indigenous communities in the Great Lakes basin often are the most likely to suffer from severe drinking water issues (McGregor 2014). However, one of the largest First Nations in Canada, Six Nations of the Grand River, has suffered with drinking water quality issues for decades (Coletta 2018).

The source water contamination impacting drinking water quality for many Indigenous Nations in the basin is not a result of mismanagement of water resources by Indigenous governments but a symptom of failed U.S.-Canada policies for managing non-point and point source pollution by non-Indigenous persons and industries in the basin. Water quality for Indigenous water sources has historically been further jeopardized by the leasing and use of Indigenous lands by settlers for agriculture or mineral extraction with poor environmental regulation or remediation of contamination (Getches 2005; Snipp 1986; LaDuke 2017). As

scholars explain, Indigenous Nations are left mending a water crisis that disproportionately affects them even though they are not the main contributors to water contamination (Arsenault et al. 2018). Furthermore, the drinking water crisis of many Indigenous Nations in the Great Lakes is at its core not a problem of insufficient water treatment and infrastructure (although still needed), but a failure of the dominant water regime to protect the treaty obligations it has with Indigenous Nations and the fiduciary responsibility to ensure their water is not contaminated for the benefit of non-Indigenous settlers. Although the drinking water crisis among First Nations in Canada has garnered increased media attention (Lam et al. 2017), it is also a persistent water governance challenge for Tribal Nations, as documented in the U.S. Fourth National Climate Assessment, completed in November 2018.

When source water is contaminated, there are obvious implications for ecosystem health of the Great Lakes on which Indigenous Nations depend for fishing, hunting and harvesting (Singel and Fletcher 2006). The subsistence nature of Indigenous fishing, hunting, and harvesting in the Great Lakes, which are non-abrogated and treaty protected rights, also presents different consumption concerns for water protection by Indigenous Nations (Marshall et al. 2018; Dellinger and Ripley 2016; Dellinger et al. 2019; Singel and Fletcher 2006). Currently, Indigenous Nations in the Great Lakes have to contend with fish contamination limiting subsistence lifestyles inherent to the exercise of the rights to self-determination because of mercury, dioxin, polychlorinated biphenyl (PCBs), and other pollutants (Dellinger et al. 2018, 2016; Singel and Fletcher 2006). Moreover, the introduction of new species into the Great Lakes is depleting Indigenous fish stocks as well as their relationship with the water. These new species are often called ‘invasive’ but Indigenous Peoples in the region express discomfort with this term. Reo and Ogden (2018) explore how ‘invasive species’ are transforming Indigenous

Nations as they encounter new ‘relatives’ in their territories that are altering ancient habitats. The U.S. and Canada with mounting pressure from fishermen, lake managers, and recreationists are also grappling with how to prevent and eradicate invasive species threatening the Great Lakes. However, the challenge for Indigenous Nations is different; their concerns are not necessarily centered on eradication of invasive species but on finding the purpose of the new relative, as Indigenous Knowledge, particularly Anishinaabe teachings, state that all life on Earth has a purpose. This aligns with the broader water protector philosophy which emphasizes that ‘water is life’ not only because humans need water but because it sustains all life on Mother Earth.

Meanwhile, the water protector movement awakened at Standing Rock in opposition to the Dakota Access Pipeline has invigorated existing efforts to protect the water of the Great Lakes among Indigenous Nations in the basin. To this point, the Menominee Nation is leading a campaign against the Back Forty Mine, an open-pit sulfide mine, that threatens the sacred Menominee River (Gedicks 2018). Additionally, water sovereignty efforts in opposition to oil pipelines have increased among Indigenous Peoples (Whyte 2018) and around the Great Lakes opposition is also rising, namely against Enbridge’s Line 3 and Line 5. Indigenous water protector resistance camps have been established to assert the authority of Indigenous Nations as equitable partners in the highest-levels of transboundary water decision-making. Water protectors and Indigenous Nations are concerned that when the pipelines break or leak there will be irreparable harm to sacred sites, fishing and hunting grounds, medicine harvesting sites, as well as Manoomin habitats. Therefore, Indigenous Nations face disproportionate risks compared to non-indigenous peoples due to loss of cultural, ceremonial and subsistence sites which amounts water injustice in the basin.

Despite ongoing water security risks, Indigenous Nations in the Great Lakes are active in their preservation and recovery of Manoomin (Singel 2018). There is a real threat of losing Manoomin and the socio-political as well as spiritual costs are almost unfathomable. In fact, any loss of Manoomin would have severe health impacts for Indigenous Peoples and sever critical modalities of cultural and spiritual practice (Ballinger 2018). The Anishinabek migration as articulated by many spiritual leaders, including those of the Midewiwin⁵, tells of how the people migrated to find the place where there is the “food that grows on water” – the sacred gift of Manoomin (Benton-Banai 1988, p. 101). Additional sacred medicinal plants for Indigenous Nations in the basin including northern white cedar and black ash need healthy wetland habitats (Kozich et al. 2018, p. 94). The harvesting and planting of sacred foods are integral to the continued political, cultural, and spiritual existence of Great Lakes Indigenous Nations (Whyte 2016, Kozich et al. 2018). As Whyte (2018) describes, it is the “moral relationships” Indigenous Nations have with Manoomin “that have supported Anishinaabe leadership in responding to pressing environmental issues in the Great Lakes, including mining, commercial agriculture and genetic modification of plants, irresponsible recreational activities, oil and gas pipelines, and fracking” (p. 16).

Furthermore, the water governance challenges facing Indigenous Nations in the Great Lakes, such as climate change and water insecurity, threaten the moral relationships and responsibilities Indigenous Peoples have to Mother Earth and all their relations. Emerging research also recognizes the far-reaching mental health implications such water challenges pose to Indigenous Peoples’ health (Mitchell 2019; Hanrahan and Mercer 2019). The challenges are

⁵ The *Midewiwin* is a medicine society of Indigenous Peoples in the Great Lakes and across Turtle Island. *Midewiwin* preserves Indigenous knowledge, laws, teachings, songs, and spiritual understandings of how to live in balance as children of Ohke (Mother Earth).

further complicated by the misalignment of the U.S., Canada, and Indigenous Nations' worldviews informing water governance approaches for how best to resolve these issues (McGregor 2014). Indigenous Nations are enacting Indigenous water governance to reform existing approaches for finding solutions to be inclusive of Indigenous knowledge and ways of knowing for our shared sustainable future.

Chapter Overview

The chapters outlined below explore Indigenous water governance within the context of the Heart of Ohke - the Great Lakes St. Lawrence River Basin.

Chapter 2, *Toward an Indigenous Water Governance Institution for Great Lakes Protection* presents the history of water colonialism in the Great Lakes that has created a complex system of multilevel governance for water decision-making in the basin. I apply theories of policy transfer to Indigenous water governance and explores the potential for development of a transboundary Indigenous water institution in the Great Lakes. I address a gap in the literature on Indigenous water institutions and their evolution globally in the face of water colonialism. Furthermore, the research presents policy recommendations based on consultations with Indigenous Nation partners in the basin and their struggles for equitable representation within existing basin water institutions. The results of the study highlight how in large part many of the exclusionary practices symptomatic of water colonialism are due to a failure to honor the original transboundary water agreements in the basin – treaties with Indigenous Nations.

Chapter 3, *Great Lakes Protection and Indigenous Public Opinion Polling* investigates the perspectives and attitudes of Great Lakes residents on the health, well-being, and protection of the lakes. It examines the discrepancies in Indigenous and non-indigenous residents' attitudes

towards Great Lakes protection underscoring the need for more governance institutions that represent Indigenous perspectives on water governance. After identifying the discrepancies present in the public opinion polling, I ask what synergies may exist for collaborative agenda setting that advance the collective interests of Indigenous and non-indigenous residents for Great Lakes protection. Indigenous representation on the International Joint Commission is proposed as a path forward for ensuring Indigenous perspectives are incorporated into the Great Lakes policy agenda setting. The findings also encourage the expansion of Indigenous engagement through instruments such as public opinion polls to ensure Indigenous perspectives are not neglected. It further builds on the insights expressed in Chapter 2 given that if existing water governance institutions continue to exclude Indigenous Peoples and worldviews then an Indigenous water institution will likely be developed to scale-up Indigenous voices in the transboundary governance of the basin.

Chapter 4, *Nations not Stakeholders: Great Lakes Indigenous Water Governance* examines the water injustices that result when Indigenous and settler-colonial modes of water governance conflict. An empirical case study of Indigenous water governance explores the interjurisdictional challenges of the Great Lakes Water Quality Agreement Areas of Concern for Indigenous Nations at epicenter of these toxic hotspots. Within this context, I ask how Indigenous Nations navigate the complex multilevel governance problems prevalent in areas of concern and how does Indigenous water governance inform their view of other actors priorities for remediation and objective setting. The findings highlight that the non-recognition of Indigenous Nations as “Nations not stakeholders” is rooted in water colonialism and perpetuates water injustices for Great Lakes Indigenous Nations. The study finds that the devaluing of Indigenous worldviews has led to environmental racism where more than 50% of Great Lakes

Indigenous Nations live within 50 km of a toxic hotspot. Moreover, the cultural, economic, health, political, and spiritual implications of such toxic proximity are exponential. The study recommends that valuing Indigenous worldviews enhances recognition of Indigenous water governance. I further argue that Indigenous Peoples must have the freedom to exercise our water sovereignty for water protection.

Chapter 5, *Walking for the Water: Indigenous Water Citizenship and the Resurgence of Water as Kin* explores the stories of water walkers as they enact Indigenous water diplomacy in establishing kinship relations with water reconstituting a natal connection and reawaken sleeping water knowledges through water citizenship. Water citizenship includes the non-activist actions for water protection in the public sphere that fulfill Indigenous water responsibilities and ensure the transmission of Indigenous water knowledges for future generations. This study identifies the policy and governance context as well as spiritual and cultural context through which gender responsibilities of caring for water are performed to meet current and future water needs among Great Lakes Indigenous Nations. This chapter thereby fills a gap in the literature linking Indigenous women's water knowledge and responsibilities with conceptualizations of Indigenous water governance. The research findings illustrate the need for Indigenous modes of transformative learning for wider audiences to embrace new ethics for enacting water citizenship. The performance of water citizenship is an international act of water sovereignty mobilizing exchange of Indigenous water governance values and principles across diverse settler-colonial hydrosocial actors.

Thesis Summary

This doctoral thesis presents the acts of survivance Indigenous Peoples and Nations undertake to protect the water in the face of ongoing water colonialism. The Great Lakes

multilevel governance system is the paradigmatic context through which to explore the evolution of Indigenous water governance given the multitude of Indigenous actors, transboundary nationalisms, and unique hydrosocial and environmental issues that manifest in the largest (by volume) group of freshwater lakes on Mother Earth. The Great Lakes are also important contextually for understanding Indigenous water governance given the history of treaties between the U.S., Canada, and Indigenous Nations in the basin. This unique history shifts contemporary interpretations of legal foundations of water governance in the Great Lakes away from the 1909 Boundary Waters Treaty and restores recognition of the treaties with Indigenous Nations as the first transboundary water agreements in the basin. The research identifies barriers to Indigenous Peoples participation and engagement in Great Lakes governance but also provides examples of their strategies for resisting the colonial status quo and overcoming water colonialism facing Indigenous Nations. The conclusion provides recommendations for policy-makers and governance actors in the basin to achieve greater equity and parity in water decision-making through recognition of Indigenous water governance as a foundational hydropluralism for good water governance. Ultimately, the research identifies the ways in which Indigenous Peoples and Nations work to protect the water through Indigenous water governance including Indigenous water institutions, water diplomacy, and water citizenship.

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CHAPTER 2: TOWARD AN INDIGENOUS WATER GOVERNANCE INSTITUTION FOR GREAT LAKES PROTECTION

Introduction

The numerous informal and formal institutions for Great Lakes governance have made it extremely difficult for Indigenous Nations to participate meaningfully in the dominant settler-colonial decision-making structures. These range from the International Joint Commission to state and provincial agency boards to local conservation and watershed planning committees to name only a few. However, these institutions meet the needs of settler-colonial defined objectives with Indigenous input sought as an addendum. In recent years, Indigenous Nations in the Great Lakes, frustrated with slow institutional evolution of existing settler-colonial institutions have started to explore the development of an Indigenous water institution for representation of Indigenous Nations throughout the basin. Some have referred to it as an Indigenous Great Lakes Secretariat that would serve in along side the International Joint Commission respecting Indigenous sovereignty and with authority from Indigenous legal systems and existing Great Lakes treaties.

The importance of Indigenous water institutions for Great Lakes protection has gained renewed attention since the signing of the 2004 Tribal and First Nations Water Accord, where over 185 Tribes and First Nations from across the Great Lakes came together to commit to principles of Indigenous water governance and stand up against water diversions occurring in the region (F. Ettawageshik, personal communication, September 25, 2018). New initiatives have continued to emerge, and intertribal organizations, such as the Great Lakes Indian Fish and Wildlife Commission, have hosted international gatherings to bring Indigenous Nations together

to explore gaps and develop solutions for complex water issues facing Indigenous Nations in the Great Lakes. As Meinzen-Dick (2007) writes in his seminal article “Beyond panaceas in water institutions”, the need for “coordinating institutions” for water management are critical when geographies overlap and jurisdiction is complex (p. 15200). There are 97 Indigenous Nations in the Great Lakes Basin, and over 200 Indigenous Nations if we include the St. Lawrence River and those who have historical ties to the region, but were removed due to colonization. In addition, with Canada, the United States, eight U.S. states, two Canadian provinces, and multiple local governments, the Great Lakes region is ripe with territorial conflict. Coordination of institutions for water management is integral to health and well-being of the lakes given the diversity of actors in the basin. While previous studies have examined the role of state (Hall 2006), water user (Dolan et al. 2000), and economic (Campbell et al. 2015) institutions, few have examined the Indigenous water institutions and the conditions that influence their evolution (Meinzen-Dick 2007).

The Great Lakes is a unique case for exploring institutional policy transfer and Indigenous water governance given the presence of federalism and legal pluralism with distinct sets of water law, including but not limited to Haudenosaunee, Anishinaabe, Métis, U.S., and Canadian. Notably, the Indigenous legal systems present in the Great Lakes ascribe legal personality to the water and recognize human responsibilities to water supersede human benefit from water, whereas non-Indigenous legal systems do not and view water as a resource for consumption within a rights-based framework. Recent political and legal developments in Anglo-settler federalist states—Canada, Australia, and the United States – have created new opportunities for Indigenous Peoples to engage in water governance and assert their treaty and

non-abrogated water rights.⁶ Transboundary water governance for Indigenous Nations is a site of contested political, social, and legal institutions that often reproduce legacies of colonialism that disenfranchise Indigenous knowledge-holders and leaders from equitable decision-making roles. Indigenous Nations in all parts of the world are searching for solutions to diverse water-related problems, such as drinking water issues, extractive industries, pipelines, climate change, Big Agriculture, fish kills, and more that threaten their cultural, socioeconomic, political and spiritual existence (Lam et al. 2017; Weinberg 2010; Whyte 2017; Billiot and Parfait 2019; Berry et al. 2018).

There is limited water governance literature on Indigenous water institutions (Bark et al. 2012; Jackson 2018; Norman 2014) and even fewer studies of those Indigenous water institutions in the Great Lakes (Cave and Plummer 2013; Whyte 2016). The traditional policy transfer literature does not acknowledge Indigenous Peoples or Indigenous Nations as policy actors that can act globally without interference from the settler colonial state (Dolowitz and Marsh 1996; Dolowitz and Marsh 2000; Bulmer et al. 2007; Benson and Jordan 2011). Settler-colonial institutions through processes of exclusion or prohibition attempted to erase mechanisms for Indigenous governance in the Great Lakes.

This paper addresses the search for successful Indigenous water institutions with transferability to the Great Lakes by examining Indigenous water institutions that have developed in other transboundary waters in Australia, the U.S., and Canada that have had a record of success advocating for Indigenous water rights in federalist systems. Additionally, it will consider the Great Lakes experience to recommend the conditions necessary to develop

⁶ See *Agua Caliente Band of Cahuilla Indians v Coachella Valley Water District*, No 15-55895 (Ninth Circuit Court March 2017); *Tsilhqot'in Nation v British Columbia* 2014 SCC 44.

transboundary Indigenous water institutions for multilevel governance. This paper relies on grey literature and a scan of information available on organizational websites with a focus on formal Indigenous water institutions. The second part of this paper examines the evolution of Indigenous water institutions and policy transfer theory. The subsequent sections present the findings on Indigenous water institutions and an overview of existing engagement of Indigenous Peoples in existing Great Lakes water institutions. The paper concludes with observations and recommendations on developing Indigenous water institutions in the Great Lakes.

Evolution of Indigenous Water Institutions

Indigenous water institutions are adaptive management regimes that have the capacity to change Indigenous and non-Indigenous responses to water security to better reflect Indigenous systems of knowledge and caring for water (Bark et al., 2012). Water governance issues are deeply political, and decision-making is often wrought with conflict, especially when notions of Indigeneity are present (Boelens, 2014). Indigenous Nations struggle to have their leadership, laws, and systems of governance recognized in the co-management of water. Indigenous Nations are the third sovereign in federalist systems, and as such, water management should recognize Indigenous Peoples not as ethnic actors with minority rights or stakeholder interests, but as equal partners with polity-based rights in co-management regimes. Democratizing water governance regimes to address Indigenous rights to water is critical in achieving water security for Indigenous Peoples. Indigenous water institutions have been developed that unify Indigenous governments across boundaries for integrated management providing a variety of mechanisms (science research, knowledge networks, meetings, legislation, technical capacity, data sharing, etc.) to engage in diverse water governance processes. Recent political and legal developments in Canada and the United States have created new opportunities for Indigenous Peoples to engage

in water governance and assert their treaty and non-abrogated aboriginal water rights. Furthermore, the introduction of Indigenous water governance institutions strengthens inter-tribal strategies for stewardship, capacity building and environmental responsibility, which is important because historical patterns of exclusion from water regimes are surmountable when Indigenous Peoples scale-up resources and sovereign powers.

There are over 276 transboundary lake and river basins in the world and over 370 million Indigenous Peoples (UNDESA, 2014). Indigenous Nations since time immemorial have built relationships with the water that connect them, informing their water ethic for co-governance of transboundary basins. However, many of the over 450 international agreements on water signed between 1820 and 2007 did not include Indigenous Nations (OSU, n.d., 2007 data). A result of water colonialism meant to exclude Indigenous Peoples from water governance and further illusions of “aqua nullius” as propagated by the doctrine of discovery (Robison et al., 2018; Marshall, 2017). Though what is often forgotten by colonial-settler water regimes are the hundreds of treaties and agreements made with Indigenous Nations that detail a water ethic and cooperative framework for transboundary water governance. But, Indigenous Nations do not forget. As Anishinaabe writer and scholar, Gerald Vizenor, notes, Indigenous Nations are emboldened by survivance, “survival through resistance”, advocating for Indigenous water law governed by ancestral epistemologies of caring for water (2008, p. 209). Paramount to survivance is honoring of treaties – the supreme law of the land. Treaties with Indigenous Nations are the first transboundary water agreements.

Water governance is defined by the mechanisms and institutional frameworks through which decisions about water are made (Norman, 2014). As water scholar Nicole Wilson (2014) notes, any discussion of water governance must be grounded in an understanding of Indigenous

governance. Governance is concerned with the process of decision-making as well as the outcomes of those processes (Norman, 2014). Indigenous governance explores the interconnectedness of Indigeneity, self-determination, Indigenous knowledge, Indigenous values, historical and on-going colonialism, marginalization and ethnic politics as they relate to Indigenous Peoples and decision-making (von der Porten and de Loë, 2013; Wilson, 2014). Indigenous governance of water is a ‘hydrosocial’ challenge whereby management of water is a product of both the natural and physical components of water in relation to the social and political context (Norman, 2014).

Indigenous water governance is predicated on Indigenous Peoples’ inherent rights to self-determination and self-governance. As environmental scholars von der Porten and de Loë (2013) note, the term Indigenous self-determination refers “to the aspects of governance related to Indigenous autonomy, sovereignty and/or assertions of Indigenous nationhood in the context of (de)colonization” (p. 149). Indigenous water governance examines Indigenous mechanisms and institutional frameworks through which water decision-making occurs including cultural values, knowledge, meanings, legal traditions and forms of governance distinct to a given people and adapted over time (Simms et al. 2016; Wilson, 2014; Norman, 2014). Understanding Indigenous water governance is critical to understanding innovation in water resource management because it provides a model for coordination across a diversity of basin users. To adequately account for Indigenous Nations in transboundary water governance, conflicting worldviews of all actors and the power dynamics that shape how those worldviews influence water decision-making must be defined. As noted by water scholar Emma Norman (2015, p. 32), “The lack of basic understanding of the fundamental belief systems of Indigenous peoples is at the root of the majority of the governance failures between environmental managers and Indigenous peoples.”

Consistent experiences of failed coordination and inadequate valuation of Indigenous governance principles lead Indigenous Nations to develop their own institutional mechanisms for water decision-making.

According to Hearne (2007) new water management institutions are created when there is greater water resource stress or demand. This study highlights Indigenous water institutions from federalist transboundary basins found to be (1) illustrative of Indigenous self-determination and sovereignty in transboundary water governance, and (2) representative of transferable best practices for enhancing Indigenous participation in transboundary water governance. The Indigenous water institutions presented offer insight into the challenges and innovations being undertaken by Indigenous Nations for transboundary water governance but is not an exhaustive list. As water use increases, the need to regulate its use and enforce those regulations also increases along with demand for more Indigenous representation within water institutions. However, when the existing institutions do not change to meet new demands, new institutions are developed (Hearne 2007).

Indigenous water institutions, often a consortium of Indigenous Nations, provide a “scaling-up” adaptive governance mechanism by which Indigenous communities can assert greater environmental sovereignty over water resources to maintain customary obligations inherent to their aboriginal water rights (Norman, 2012). These Indigenous water institutions are new institutional models formed in response to complex social-ecological systems that often do not account for Indigenous knowledge or ways of caring for water (Jackson et al. 2012). As such, the advent of Indigenous water institutions in recent years has allowed for the development of sophisticated Indigenous management actions (such as designated water board management roles, climate change studies, cultural flows, water declarations, mapping, etc.) to be

incorporated into transboundary lake and river basin planning in Canada, Australia, and the United States that address water resource challenges faced by Indigenous Nations.

In an era of self-determination, Indigenous Nations have worked to develop Indigenous water institutions that more fully represent Indigenous water governance paradigms. In the absence of water regimes that prioritize Indigenous Knowledge and management practices Indigenous Nations are forced to develop their water institutions to protect their responsibilities to water, not only their aboriginal rights, but their spiritual and cultural responsibilities for caring and giving thanks to water – a relation as tangible as one's grandmother or grandfather. Ultimately, Indigenous water institutions reform how water managers think about water asking, "who is water?" rather than "what is water?" These institutions are thereby grounded through declaratory performances of their commitment and connection to water and the sacred responsibility they have to ensure its well-being.

The study identified that there are eleven (11) Indigenous water institutions that have been created in the context of institutional reform for transboundary water governance (Table 1). The study may be limited by its reliance on English rather than Indigenous languages in the geographic regions identified. However, review of the literature indicates that water governance studies in Australia, Canada, and the U.S. are predominantly written in English likely due to colonization. The proliferation of Indigenous water institutions in the identified federalist states indicates their usefulness in advocating Indigenous water management values and obtaining Indigenous water rights, including water decision-making on use, allocation, quality and flows. Moreover, 1992 was likely a formative year for institutional evolution as two critical policy junctures occurred: (1) the 1992 Quincentennial Celebration; and (2) the United Nations Rio Earth Summit. Both events were catalytic in mobilizing Indigenous collective action for water

protection. The Quincentennial Celebration forced Indigenous Peoples to witness a spectacle of celebrations from sea to sea commemorating colonialism, stealing of Indigenous lands, and genocide. In the same year, Indigenous Peoples challenged the colonial status quo as active participants in the Rio Earth Summit showcasing to the world the international diplomacy and visionary wisdom of Indigenous Peoples for addressing the global environmental crisis (Ribis and Mascarenhas 1994).

Table 1. Indigenous Water Institutions

Transboundary Jurisdictions		Indigenous Water Institutions	Date Created
Haudenosaunee Confederacy: Cayuga; Onondaga; Seneca; Mohawk; Tuscarora; Oneida	USA; Canada	Haudenosaunee Environmental Task Force (HETF)	1992
Nez Perce Tribe; Confederated Tribes of the Umatilla Indian Reservation; Confederated Tribes of the Warm Springs Reservation of Oregon; Confederated Tribes and Bands of the Yakama Nation	USA; Canada	Columbia River Intertribal Fish Commission (CRITFC)	1977
Chemehuevi Indian Tribe; Cocopah Indian Community; Colorado River Indian Tribes; Fort Mojave Indian Tribe; Jicarilla Apache Tribe; Navajo Nation; Northern Ute Tribe; Quechan Indian Tribe; Southern Ute Indian Tribe; Ute Mountain Ute Indian Tribe	USA; Mexico	Ten Tribes Partnership	1992
Barapa Barapa; Barkindji; Dhudhuroa; Dja Dja Wurrung; Latji Latji; Maraura; Mutti Mutti; Nari Nari; Ngarrindjeri; Ngaywang; Ngintait; Nyeri Nyeri; Tatti Tatti; Ngunawal; Taungurung; Wadi Wadi; Wamba Wamba; Waywurru; Wegi Wegi; Wergaia; Wiradjuri; Wolgalu; Wotjabaluk; Yaitmathang; Yita Yita; Yorta Yorta	Australia	Murray Lower Darling Rivers Indigenous Nations (MLDRIN)	1998
Barkindji (Paakantyi); Githabul; Mandandanji; Barunggam; Gunggari; Mardigan; Bidjara; Jarowair; Murrawarri; Bigambul; Gwamu; (Kooma); Ngemba; Budjiti; Kunja; Ngiyampaa; Euahlayi; Kambuwal; Kwiambul;	Australia	Northern Basin Aboriginal Nations (NBAN)	2010

Wailwan; Gamilaroi; Maljangapa; Wakka Wakka			
Misi-zaaga'iganiing (Mille Lacs); Nagaajiwanaang (Fond du Lac); Bikoganoogan St.Croix (Danbury); Gaa-miskwaabikaang (Red Cliff); Mashkiigong-ziibiing (Bad River); Ginoozhekaaning (Bay Mills); Waaswaaganing (Lac du Flambeau); Gete-gitigaaning (Lac Vieux Desert); Zaka'aaganing (Mole Lake/Sokaogon); Gakiiwe 'onaning (Keweenaw Bay); Odaawaa-zaaga'iganiing (Lac Courte Oreilles)	USA; Canada	Great Lakes Indian Fish & Wildlife Commission (GLIFWC)	1984
Anvik; Carcross; Carmacks; Cirlce; Dawson; Eagle; Eagle; Fort Yukon; Galena; Hooper Bay; Huslia; Kaltag; Kotlik; Koyukuk; Kwanlin Dun; Marshall; Na-Cho Nyak Dun; Nenana; Nenana; Nulato; Pilot Station; Ruby; Russian Mission; St. Mary's; St. Michael; Stewart; Taan Kwachan; Taku River Tlingit; Teslin Tlingit Council; Trondek Hwechin; Venetie; Whitehorse;	USA; Canada	Yukon River Inter-Tribal Watershed Council (YRITWC)	1997
Coeur d'Alene Tribe; Confederated Tribes of the Colville Reservation; Kalispel Tribe of Indians; Kootenai Tribe of Idaho; Spokane Tribe of Indians	USA; Canada	Upper Columbia United Tribes (UCUT)	1982
Okanagan Indian Band; Upper Nicola Band; Westbank First Nation; Penticton Indian Band; Osoyoos Indian Band; Lower and Upper Similkameen Indian Bands; Colville Confederated Tribes	USA; Canada	Okanagan Nation Alliance	1981
Assiniboine & Sioux Tribes of Fort Peck; Cheyenne River Sioux Tribe; Chippewa Cree Tribe; Crow Creek Sioux Tribe; Crow Tribe; Fort Belknap Tribe; Kickapoo Tribe; Lower Brule Sioux Tribe; Northern Cheyenne Tribe; Oglala Sioux Tribe; Omaha Tribe; Ponca Tribe of Nebraska; Prairie Band of Potawatomi; Rosebud Sioux Tribe; Sac & Fox Nation of Missouri; Santee Sioux Tribe; Sisseton-Wahpeton Sioux Tribe; Spirit Lake Tribe; Standing Rock Sioux Tribe; Three Affiliated Tribes; Turtle Mountain Band of Chippewa; Winnebago Tribe of Nebraska; Yankton Sioux Tribe; Eastern Shoshone Tribe;	USA	Mni Sose Intertribal Water Rights Coalition	1993

Flandreau Santee Sioux Tribe; Northern Arapaho Tribe			
Flandreau Santee Sioux Tribe; Oglala Sioux Tribe; Rosebud Sioux Tribe; Standing Rock Sioux Tribe	USA	Great Plains Tribal Water Alliance (GPTWA)	2006

The Indigenous water institutions identified across Australia, Canada, and the United States with policy transferability to the Great Lakes are listed in Table 1. This paper is framed within an understanding of policy transfer in recognition of not only the agency of Indigenous actors in knowledge transfer and institutional innovation, but the ongoing existence of settler colonialism as a coercive force shaping water governance in the U.S., Canada, and Australia. Policy transfer is commonly defined as “the process by which knowledge about policies, administrative arrangements, institutions and ideas in one political system (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political system” (Dolowitz and Marsh 2000, p. 5).

The shared water governance struggles Indigenous Nations face has led to the international spreading of ideas among Indigenous water actors to solve water problems in similar ways and develop common strategies to resist dominant white settler water management regimes. Dolowitz and Marsh (1996) identify seven objects of transfer: “policy goals; structure and content; policy instruments or administrative techniques; institutions; ideology; ideas, attitudes and concepts; and negative lessons” (p. 349–350). The policy transfer literature has rarely explored the ways in which Indigenous Nations adopt institutions, policies or ideas to fit

Indigenous contexts (Ladner 2016). However, the ability of Indigenous Nations to learn from one another and share “best practices” is a normal part of the water governance process (Schneider and Ingram 1988; de Loë et al. 2016).

Table 2. Indigenous Water Institutions Policy Statements

Indigenous Water Institution	Example Policy Statement
Ten Tribes Partnership	“The ten Tribes have formed the Partnership to assist them in developing and protecting tribal water resources and to address technical, legal , economic, and practical issues related to the operation of the Colorado River...”
CRITFC	“to ensure a unified voice in the overall management of the fishery resources, and as managers, to protect reserved treaty rights through the exercise of the inherent sovereign powers of the tribes.”
GLIFWC	“The purpose of this agency is to ensure effective self-regulation and intertribal co-management in support of the sovereignty of its member tribes in the regulation and management of ceded territory natural resources...”
YRITWC	“...providing Yukon First Nations and Alaska Tribes in the Yukon Watershed with technical assistance, such as facilitating the development and exchange of information, coordinating efforts between First Nations and Tribes, undertaking research, and providing training, education and awareness programs to promote the health of the Watershed and its Indigenous peoples.”
UCUT	“provide a common voice for our region through the collaboration of five area tribes ... a proactive, collaborative, and science-based approach to promoting fish, water , wildlife, diverse habitat, and Indian culture in the Northwest.”
HETF	“...assist Haudenosaunee Nations in their efforts to conserve, preserve, protect and restore their environmental, natural and cultural resources...”
Okanagan Nation Alliance	“We stand united and will apply and implement our Syilx knowledge , Syilx laws, Syilx customs and Syilx self-determination to preserve, conserve and protect life’s most sacred gift – siwłkʷ.”
MLDRIN	“...a confederation of First Nations from the Southern part of the Murray Darling Basin, in South-Eastern Australia. The member Nations of MLDRIN recognize the value of a united voice to progress their unique rights, values and interests in water management .”
Mni Sose Intertribal Water Rights Coalition	“...serve the Missouri River Basin Tribes in their pursuit of water rights , environmental issues, and hydropower quantification and related concerns along the Missouri River mainstem.”

GPTWA	“...committed to ensuring clean and abundant water for the people of the Great Sioux Nation now and for generations to come ... As its sacred obligation , the Great Plains Tribal Water Alliance will provide technical and policy recommendations for the protection of all water resources ...”
NBAN	“seek greater recognition for Aboriginal Science and Cultural Values and Uses regarding land and water management in the northern Murray–Darling Basin. We also seek a greater input in decision making and planning in the Northern Murray Darling Basin.”

I conducted a textual analysis of mission statements of selected Indigenous water institutions to identify conceptual elements of Indigenous water governance in transboundary contexts. The analysis focuses on different Indigenous water institutions all of which represent a collective of Indigenous Nations working to protect the water within a transboundary waterscape. Statements analyzed were those found on the webpage of the selected Indigenous water institution. Indigenous water institutions’ policy statements on their mission and mandates revealed seven recurring themes and four defining features across institutions (See Table 2; last review in August 2019). All identified Indigenous water institutions were formed to provide a united voice for their member Indigenous Nations to scale up their political power for water governance. In addition, critical to many Indigenous water institutions was the intent to respect Indigenous sovereignty and to govern by Indigenous laws. The institutions identified water management roles included protection and conservation with a broad focus on protection of the water as a living entity. Indigenous water institutions are committed to collaborative governance. They also formed with the stated intent to advocate for Indigenous water rights including treaty rights. The institutions policy statements included recognition of being guided by cultural values. Lastly there was desire for the institution to help with capacity building among Indigenous member nations and to lead with Indigenous Science.

In comparison to past studies on mission statements of Canadian environmental movements (Haluza-DeLay and Fernhout 2011) and of global environmental organizations (Campagna and Fernández 2007), Indigenous water institutions utilize language that prioritizes the intrinsic value of water (cultural and spiritual connection) rather than solely human needs. The results showcase the emergence of Indigenous Water Institutions (11 Indigenous-led) defined by four main features: (1) an identifiable role in governance of transboundary water; (2) formed in response to an initial exclusion of Indigenous Peoples and or Indigenous ecological knowledge from the dominant water regime; (3) incorporated Indigenous epistemologies of the basin and maintained a holistic approach to resolving water insecurity through their chosen management practices; and (4) a stated intent to bring together Indigenous Nation communities for a unified voice in water governance.

While there is a growing body of literature on the interactions between settler-colonial states and Indigenous Nations around water governance (McGregor, 2014; Norman, 2014; von der Porten et al., 2015; Wilson, 2014), less attention has been given to international policy transfer of Indigenous Peoples for the reconstitution of water institutions based on traditional kinship and governance networks for water governance among Indigenous Nations. The following section explores the waterscape of institutional arrangements for Great Lakes governance, the level of Indigenous engagement, and emerging demands for new Indigenous water institutions.

Overview of Indigenous Engagement in Great Lakes Multilevel Governance Institutions

There are more than 200 Indigenous Nations with existing or historical connections⁷ to the Great Lakes each with their individual governance systems including unique laws, policy instruments, and institutions developed to inform water decision-making for maintenance of their rights, relationships, and responsibilities to water. Therefore, the following overview of engagement of Indigenous Nations in Great Lakes multilevel governance focuses on select developments of Indigenous water institutions in the Great Lakes.

Generally, discussion of Great Lakes governance at the international level begins with the 1909 Boundary Waters Treaty (BWT); and scholars often refer to the BWT signed by the United States and Canada as the first international agreement for transboundary water governance in the region (Zeemering 2018; Hall 2008, 2006; Anderson 1998; Karkkainen 2018; Johns et al. 2018). However, the first international agreements for transboundary water governance in the Great Lakes were the treaties the U.S., Canada, and their preceding colonial governments signed with Indigenous Nations (See Table 3) (McGregor 2014; Singel and Fletcher 2006; Hele 2008; Phare 2009). As McGregor (2014) describes, “[Indigenous] Elders and others have expressed their understanding that the treaties signed with European nations and later with Canadian governments provide the foundation for a nation-to-nation relationship between distinct societies (p. 501). The abrogation of responsibility to Indigenous treaty fulfillment by the U.S. and Canada is a root cause of the evolving water crises facing Indigenous Peoples in the Great Lakes. Great Lakes Indigenous Nations historically maintained vast political networks and advocacy

⁷ Generally, this refers to territories, lands, water – relations of Indigenous Nations to which they have responsibilities and re rightsholders despite being remove or prohibited from occupation of those territories. Through treaty and other mechanisms including non-abrogation of their inherent rights Indigenous Nations maintain historical connections to places and waterscapes even after removal. Under U.S. law 25 CFR § 292.2 significant historical connection means “the land is located within the boundaries of the tribe’s last reservation under a ratified or unratified treaty, or a tribe can demonstrate by historical documentation the existence of the tribe’s villages, burial grounds, occupancy or subsistence use in the vicinity of the land.”

instruments for changemaking including formation of traditional councils (e.g. Grand General Indian Council of Ontario and Haudenosaunee Traditional Confederacy Council) as well as writing petitions, lobbying, litigation, and sending delegations to Washington, D.C., Ottawa, and Geneva, Switzerland for various levels of political demonstrations (Danziger 2008).

Table 3. Chronology for major governance actions and agreements affecting Indigenous Engagement in Great Lakes Multilevel Governance⁸

International		
1613 Two Row Wampum 1763 Royal Proclamation 1783 Treaty of Paris 1794 The Jay Treaty 1794 Canandaigua Treaty 1795 Treaty of Greenville 1814 Treaty of Ghent 1820 Treaty at Sault Ste. Marie Treaty of 1836 Treaty of 1837 Treaty of 1842 1850 Robinson-Huron Treaty Treaty of 1854 1855 Treaty of Detroit 1948 Universal Declaration of Human Rights 1966 International Covenant on Economic, Social and Cultural Rights 1989 International Labour Organization Convention 169 - Indigenous and Tribal Peoples 1992 Rio Declaration on Environment and Development 2007 United Nations Declaration on the Rights of Indigenous Peoples 2010 UN. General Assembly Resolution 64/292 Human Right to Water and Sanitation.		
Binational		
1818 Anglo-American Treaty 1909 Boundary Waters Treaty 1955 Convention on Great Lakes Fisheries 1968 Great Lakes basin compact 1972 Great Lakes Water Quality Agreement 1978 Great Lakes Water Quality Agreement 1985 Great Lakes Charter 1987 Great Lakes Water Quality Agreement 1991 Canada-United States Air Quality Agreement 1997 Great Lakes Binational Toxics Strategy 2001 Annex to the Great Lakes Charter Agreement 2002 Lake Huron Binational Partnership 2005 Great Lake-St Lawrence River Basin Sustainable Water Resource Agreement 2005 Great Lakes-St. Lawrence River Basin Water Resources Compact 2012 Great Lakes Water Quality Agreement		
Indigenous Nations	Canada	US

⁸ This table does not provide an exhaustive list of all treaties, deeds, agreements, and so forth between the United States, Canada or their designees with Indigenous Nations in the Great Lakes. Each individual Indigenous Nation maintains an independent archive of actions and agreements pertinent to their inherent sovereignty and is the official consultative record. The outlined governance actions and agreements provide a snapshot of critical junctures in water policy development and multilevel governance over nearly four hundred years in the region.

2004 Tribal and First Nations Water Accord	1857 Fishing Act	1887 Dawes Act
2004 Intergovernmental Accord between the Federally Recognized Indian Tribes in Michigan and the Governor of the State of Michigan Concerning Protection of Shared Water Resources Entered	1867 Constitution Act	1934 Fish and Wildlife Coordination Act
2006 St. Mary's River Treaty (Treaty between Indigenous Nations)		1970 National Environmental Policy Act
		1972 Clean Water Act
2008 Chiefs of Ontario Water Declaration of the Anishinaabek, Mushkegowuk, Onkwehonwe in Ontario	1876 Indian Act	1973 Endangered Species Act
2019 Nibi Declaration of Treaty #3	1982 Constitution Act	
	1985 International Boundary Waters Treaty Act	
	1985 Navigable Waters Protection Act	1984 EPA Indian Policy
	1985 Canada Water Act	1986 Water Resources Development Act
	Canada-Ontario Agreement	2000 <i>United States vs. Michigan</i> Consent Decree (Tribes, U.S., and State of Michigan)
	1996 <i>R. v. Van Der Peet</i>	2002 Great Lakes Legacy Act
	1996 <i>R. v. Badger</i>	2004 Great Lakes Regional Collaboration Resolution
	1999 <i>R. v. Sundown</i>	2009 Great Lakes Restoration Initiative
	2001 International Boundary Waters Act	
	2003 <i>R. v. Powley</i>	
	2015 Fisheries Act	
	2013 Safe Drinking Water for First Nations Act	
	2014 Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health	
Regional / Intertribal	Provincial	States
NCAI Resolution #FTL-04-018: Tribal Participation in the Great Lakes Water Resources Compact & Great Lakes Basin Water Resources	1990 Ontario Water Resources Act	1994 Great Lakes Preservation Act (Michigan Code, S 324.32703
NCAI Resolution #SAC-06-074: To Protect the Waters of the Great Lakes as Well as the Waterways Running Next to or Within Tribal Lands as National Resources	2002 Safe Drinking Water Act	Level of Lake Michigan Act of 1996 (61.5 ILCS 50/1 et seq.)
NCAI Resolution #SD-02-008: Great Lakes Protection	2002 Waste Diversion Act	Minnesota v. Mille Lacs Band of Chippewa Indians, 526 U.S. 172 (1999)
AFN Resolution no. 74/2015: First Nations Water, Infrastructure and Housing Commission	2006 Clean Water Act	
AFN Resolution no. 29/2014: Right to Safe Drinking Water on Reserve	2009 Toxics Reduction Act	
AFN Resolution no. 45/2016: National Water Conservation and Protection Strategy for The Great Lakes	2010 Open for Business Act	2004 Intergovernmental Accord Between the Federally Recognized Indian Tribes in Michigan And the Governor of the State of Michigan Concerning Protection of Shared Water Resources
AFN Resolution no. 19/2017: Resetting the Role of First Nations in Environmental and Regulatory Reviews	2012 Ontario Great Lakes Strategy and Great Lakes Protection Act	2007 Inland Consent Decree
	2015 Great Lakes Protection Act	New York Water Withdrawal Law NYS ECL 15-1501

Additionally, there were agreements signed by the United States and Canada (Great Britain) prior to the BWT that have implications for Great Lakes multilevel governance, international relations, and Indigenous water governance. Firstly, the Royal Proclamation of 1763 recognized the inherent sovereignty of Indigenous Nations and the protection of their lands and territories from unlawful seizure (Getty 1983; Hele 2013; Fenge and Aldridge 2015; Royal Proclamation 1763). Subsequently, the sovereign rights of Indigenous Nations within the Great

Lakes and their rights to access the waters of the region were further affirmed in the Jay Treaty of 1794 stating:

[T]he Indians dwelling on either side of the said Boundary Line freely to pass and repass by Land, or Inland Navigation, into the respective Territories and Countries of the Two Parties on the Continent of America (the Country within the Limits of the Hudson's Bay Company only excepted) and to navigate all the Lakes, Rivers, and waters thereof, and freely to carry on trade and commerce with each other. (Jay Treaty 1794).

Conflict over land and water continued later, erupting in the War of 1812. As Keller (1978) notes control of land meant control of water (p. 7). Indigenous Nations were forced to pick sides and their choices irrevocably shaped the tenure of land of their polities for centuries. To resolve the war, the United States and Great Britain (including what is now Canada) signed the Treaty of Ghent in 1814 which “restore[d] to such Tribes or Nations respectively all the possessions, rights, and privileges which they may have enjoyed or been entitled to in” 1811, including their rights to land and water (Treaty of Ghent 1814; Ettawageshik 2008). However, it was after the signing of the Treaty of Ghent that Indigenous Nations in the Great Lakes faced rapid periods of land cessations under Indian Treaties (Danziger 2009). As settlers pushed further into Indigenous territories, water was weaponized through flooding and diversion infrastructure that destroyed Indigenous relationships to many waterways, animals, wild rice beds, fish, and medicinal plants (Keller 1978, p. 15).

Despite numerous international agreements and treaties with Indigenous Nations protecting their rights to water and affirming their inherent sovereignty, the U.S. and Canada have continuously dishonored their treaty obligations. Therefore, it comes as little surprise to Indigenous Nations that they have been erased from the discourse of international governance in the Great Lakes. As Frank Ettawageshik highlights,

When the tribes consider the Boundary Waters Treaty, we notice a very interesting thing. We are not mentioned. Our rights are not mentioned. But this was in 1909. You have to put this in historical perspective. In 1909, pretty much the whole United States believed that tribes were very temporary, that we were about to go away as tribal people, that we were gradually being diminished. Our population had been decimated from many millions to several hundred thousands. Tribes were in situations in which people knew that we were around but people didn't think of us that much. And so, it is not all that surprising actually that we were not mentioned in the Boundary Waters Treaty. (Ettawageshik 2008, p. 1478)

Although the erasure may not be surprising it is extremely painful for Indigenous Peoples and harmful to our political integrity and well-being. However, Indigenous Nations are still here and active in multilevel governance of the Great Lakes at the international level, reminding the other nations to honor the treaties – the original transboundary Great Lakes agreements.

Indigenous engagement in the Great Lakes is further complicated by the disparate treatment of Indigenous sovereignty by U.S. and Canadian legal systems (Cohen and Norman 2018, p. 6). As Anderson (1998) points out “Canadian and American law affecting the Great Lakes is a twisted tale of state, provincial, national and international treaty” (p. 229). Indigenous Nations are forced to navigate foreign multilevel governance structures to participate in Great Lakes decision-making that do not align with their epistemologies for caring for water. There are limited avenues for capacity building for Indigenous Nations to understand the complex settler systems of governance. There is no Great Lakes “water school” with a curriculum for governments to be exposed to the diversity of jurisdictions and legal pluralism present in the basin. Knowledge mobilization and acquisition for multilevel water governance occurs without any centralized institutions. The U.S.-Tribal relationship in the Great Lakes is influenced by a series of treaties including the Treaty of 1836, Treaty of 1837, Treaty of 1842, Treaty of 1854, which ceded land in the Great Lakes to the U.S. but included reserved rights such as hunting and fishing that inform Indigenous water governance (Singel and Fletcher 2006).

Furthermore, Tribal Nations in the Great Lakes have recognized water rights as a result of a long history of legal action⁹ (Single and Fletcher 2006). As a result, there is a mixture of state and federal powers with jurisdiction for Great Lakes governance (Anderson 1998, p. 229). Under the Clean Water Act (1972), Tribal Nations can receive Treatment in the Same Manner as a State (TAS) from the U.S. Environmental Protection Agency, providing recognition of their authority to enforce their water quality standards on and off their territories (Clean Water Act 1987). In the Great Lakes, there are six Tribal Nations that have received or are in the process of receiving TAS status (EPA 2018). The process to receive TAS status takes years to complete and is very expensive for Tribal Nations to complete (Leonard 2011). Less than 20% of eligible Tribal Nations have engaged in this structure for multilevel governance in the basin. Tribal Nations note that the TAS process may not be an appropriate venue for exercising Indigenous water governance as it does not fully recognize tribal sovereignty, treating Tribal Nations on the same level as states, when they are in a government-to-government relationship with the U.S. (Leonard 2011). Furthermore, some Tribal Nations may view the EPA's delegation of authority for setting water quality standards as a clipping of their sovereignty, thus refusing to participate in the TAS process.

In Canada, First Nations have been struggling with developing Source Water Protection Plans (SWPPs) under a similar process of regulatory hurdles, as seen with TAS, put forward by the Canadian federal government under the 2013 *Safe Drinking Water for First Nations Act*. However, Indigenous Nations often resist these legal paths in favor of indigenist legal ethic rather than seeking delegated authority from another sovereign as with the TAS or SWPP

⁹ See *Minnesota v. Mille Lacs Band of Chippewa Indians*, 526 U.S. 172 (1999); *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658 (1979); *Lac Courte Oreilles Band of Lake Superior Chippewa Indians v. Voigt*, 700 F.2d 341 (7th Cir. 1983); *United States v. Michigan*, 471 F. Supp. 192 (W.D. Mich. 1979);

processes. There is an inconsistency between how the U.S. and Canada articulate their jurisdiction over water resources and how Indigenous Nations view their jurisdiction, namely that it has never been ceded as the original peoples of the Great Lakes.

In Canada, First Nations and Métis must contend with shared responsibilities for water at the provincial and national levels (Durette 2010; Phare 2009; Anderson 1998). In both Canada and the U.S., the federal governments have a fiduciary responsibility to ensure Indigenous Peoples water is protected. However, lack of clear implementation guidance has led to inadequate water quality and quantity for many Indigenous Nations (Larned 2018; Phare 2009; Anderson 1999). The *1867 Constitution Act* attempted to erase Indigenous water sovereignty by recognizing the provincial ownership of water in violation of Indigenous rights (Anderson 1998, p. 231). Additional legal attempts to erode Indigenous water governance include the *1857 Fishing Act* and the *Indian Act*, whereby Indigenous Peoples' fishing rights, rights to self-determination, and sovereignty were violated because these Acts did not recognize Indigenous laws and attempted to remove Indigenous nation autonomy over their citizenry. There was a shift in Canadian and First Nation intergovernmental relations with the passage of s.35 of the *1982 Constitution Act*, which recognized that First Nations, Métis and Inuit peoples have "aboriginal and treaty rights". As a result of evolving intergovernmental relations, First Nations have more mechanisms for assertion of their water sovereignty through legislation, negotiated settlements, and modern treaty processes (Durette 2010, p. 309).

Legal Pluralism and Water

There are diverse Indigenous legal systems in the Great Lakes, and this paper in no way represents a full review of those systems. However, it touches on some of the most important features of the overlaps of many of those legal waterscapes. Firstly, for many Indigenous Nations

in the Great Lakes, including but limited to the Anishinaabek, Haudenosaunee, and Algonquin Peoples, wampum belts are important articulations of Indigenous water law. Wampum beads that are strung together to create the belts commemorating treaties are made of quahog and whelk shells harvested by Indigenous Nations in the East along the Atlantic Coast. Through an extensive Indigenous economic system, wampum forms the foundation of historical and contemporary economic and political diplomacy in the Great Lakes and throughout the eastern regions of Turtle Island. Scholars have also called this “wampum diplomacy” (Harrison 2017; Bruchac 2017).

Haudenosaunee Water Law

Haudenosaunee law is the “law of the land” and it provides for Indigenous leaders to not control the water for their personal benefit but instills a responsibility to be a “voice for the water” (King 2006, p. 466). These laws are encapsulated in the Great Law of Peace (Kaianerekowa), which instructs the six nations of the confederacy on how to achieve peace, power and righteousness among their nations (Hill 2017; Grinde and Johansen 2016; King et al. 2005). Within this legal ethic emerged two of the foundational examples of Indigenous water governance through wampum diplomacy in the Great Lakes – the Two Row Wampum (Kaswentha) and the Dish with One Spoon Wampum (Gdoo-naaganinaa). The sacredness of water was embedded in every act of wampum diplomacy through the use of wampum, which is harvested from water its connection is inseverable. Many of the water governance problems facing the Great Lakes today have resulted from the infringement on Indigenous Nations’ sovereignty. Violations of Indigenous sovereignty are not in keeping with the tenets of the treaties. Violations of Indigenous rights of self-determination to not foster respect or peace. The Kaswentha, or Two Row Wampum, was a treaty with the Dutch in 1613 that articulated how

nations from different worlds can peacefully coexist by respecting each other's inherent sovereignty (King 2006). The Dish with One Spoon Wampum, known among the Anishinaabek as Gdoo-naaganinaa, is a pre-colonial treaty between the Haudenosaunee and Anishinaabek that continues to inform Indigenous water governance in the Great Lakes (Reo et al. 2017; McGregor 2014). The Dish with One Spoon Wampum articulated that "Natural Resources found on Mother Earth, would belong collectively. Symbolically, Natural Resources are in one dish: Nations would be eating out of this one dish: taking only what was necessary and leaving whatever was available for others and enough to propagate for the future generations" (King et al. 2005, p. 13). These are the original laws instructing the protection of the water and the Great Lakes and all life they support. These transboundary water agreements encapsulate unique water law principles that should inform future Great Lakes governance.

Anishinaabek Water Law

Separate from the Kaianerekowa of the Haudenosaunee are the laws governing water of the Anishinaabek, known as Anishinaabe Nibi Inaakonigewin. Craft (2016) states that "Anishinaabe water law is focused primarily on responsibility, rather than rights, and that it is multi-layered, multi-dimensional and sourced from relationships among beings (human and non-human) (p. 107). Furthermore, the legal ethic of Anishinaabe Nibi Inaakonigewin instructs humanity on how to fulfill its responsibility to all of creation and live in a good way or what is known as mino-biimaadiiziiwin (Craft 2016, p. 109). A 2013 report on Anishinaabe water law authored by AnishinaabeKwe scholar Aimée Craft based on research conducted with elders and traditional knowledge holders identified the following key legal tenets: "(1) Water has a spirit; (2) We do not "own" water; (3) Water is life; (4) Water can heal; (5) Women are responsible for water; (6) We must respect the water; (7) Water can suffer; and (8) Water needs a voice" (p. 3).

Ultimately, Anishinaabe Nibi Inaakonigewin exists within a framework of responsibilities rather than rights.

Métis Water Law

Similarly, Métis law for Indigenous water governance connects to its Anishinaabe roots. As a result of *Daniels v. Canada*, the MétisMétis also enjoy comparable rights and recognition to First Nations. The MétisMétis are intricately connected to the waterways and therefore have developed distinct legal systems that are informed by that connection (MNO 2014). The Métis legal ethic is also based on building relationships with the water through the maintenance of traditional harvesting practices. Harvesting rights ensure Métis are able to fulfill their responsibilities for the water (Teillet 2013). In doing so, they have been strong advocates for environmental regulation and climate change resilience in the basin (MNO 2016). However, despite the distinct legal systems of Indigenous Nations in the Great Lakes they have largely been dismissed in multilevel governance by the dominant water regimes of the U.S. and Canada.

Binational Water Agreements

The Great Lakes Water Quality Agreement (1972, 1978, 1987, and 2012), recognized as an international agreement, has had significant influence on the intergovernmental relations of Indigenous Nations with the U.S. and Canada (Balsiger and Prys 2016). Similarly, to the BWT, Indigenous Nations were initially left out of the Great Lakes Water Quality Agreement (GLQWA). Additionally, subsequent processes for amendments to the agreement excluded Indigenous Nations. In large part, this is symptomatic of de facto U.S. and Canada Federal Indian and Aboriginal policies that maintain assimilationist policies rather than policies promoting Indigenous self-determination. Prior to the development and signing in 1972 of the

Great Lakes Water Quality Agreement, Tribal Nations, First Nations, and Métis were not consulted or asked to be parties to the negotiations. Therefore, it is no surprise Indigenous Nations are not signatories to the Great Lakes Water Quality Agreement (GLWQA).

The GLQWA signed in 1972 by the U.S. and Canada was predominately concerned with tackling phosphorus issues in the lakes (Hall 2008). Indigenous knowledge keepers were not viewed as being “real” scientists (Deloria 1997) with valuable knowledge to contribute to understanding the phosphorus problem. Indigenous Nations exclusion from the agreement denied them the ability to address the phosphorus problem using their own knowledge and science as applied to their territories. It further prevented other Great Lakes residents from benefiting from unique innovations fostered by inclusion of Indigenous knowledge, an applied science over thousands of years in the region. It was later revised in 1978 to include emerging science on organic chemicals and to strengthen actions area where the public felt the U.S. and Canada were failing to protect the lakes (Hall 2008; Zeemering 2018). In 1984, the U.S. Environmental Protection Agency passed its infamous *Indian Policy* recognizing Indigenous rights to self-government and to work with Tribal Nations in a government-to-government relationship (EPA 1984). However, despite this new policy, in 1987 the GLWQA was again revised without Indigenous participation to add criteria for Beneficial Use Impairments (BUIs) to designate Areas of Concern (AOCs) and initiating Remedial Action Plans (RAPs) and Lakewide Management Plans (LAMPs) (Hall 2008; Zeemering 2018; Holifield and Williams 2019). The pattern of Indigenous erasure by the U.S. and Canada through transboundary agreements in the basin continued.

In the early 2000s, the lack of recognition of Indigenous Nations as sovereigns came to a head. The states and provinces were grappling with proposed water diversions in the basin and

had to recommit to an early non-binding agreement of cooperation – the 1985 Great Lakes Charter – to avert a crisis (Anderson 1998; Johns and Thorn 2015; Hall 2006). This commitment was expressed in what is commonly known as the 2001 Annex; however, neither the Charter or its annexes recognized the shared jurisdiction of Indigenous Nations, states, and provinces in the basin (King et al. 2005). As a result, Indigenous Nations came together in 2004 and signed the Tribal and First Nations Water Accord to assert their sovereignty and principles of Indigenous water governance for the Great Lakes (Ettawagheshik 2008).

Indigenous Water Agreements

The 2004 Accord changed Indigenous water governance in the basin forever. In the aftermath of nearly a century of the 1909 Boundary Waters Treaty, the Accord marked the first time all Great Lakes Tribal Nations and First Nations were invited to come together to solidify a formal Indigenous transboundary water agreement for the Great Lakes. As a result, Indigenous Nations mobilized to build capacity and fight water injustice through collective action and the reconstitution of traditional kinship governance networks. The Accord also recognizes the right to consultation being included in the 2005 Great Lakes Compact, an agreement among the U.S. states with similar legislative adoptions in Ontario and Quebec (Hall 2006). However, the Compact process was not perfect. The Accord successfully pressured Great Lakes States to recognize the need for tribal participation. However, the extent of recognition of Tribal authority on Great Lakes water diversions continued to be weighed secondary to state or federal powers. Furthermore, not all Indigenous Nations in the basin were formally consulted. Moreover, many Indigenous Nations felt the compact process was an attack on tribal sovereignty and an erroneous attempt by the states to usurp the U.S. and Canadian federal responsibility to consult with Indigenous Nations (Phelan Hand 2007).

The failure of the U.S. and Canada to adequately consult Indigenous Nations for Great Lakes decision-making, that has continued erratically since the early 2000s, is a key barrier to multilevel governance. When Indigenous Nations are not engaged in nation-to-nation relationships with Canada and the U.S. for lake protection, they often will mobilize and develop their own path for Indigenous water governance in the basin. For example, in 2006 Anishinaabe Tribal Nations and First Nations came together to sign the international *St. Mary's River Treaty* to protect the St. Mary's River from contamination and prevent further pollution (Ettawagheshik 2008). A portion of the river is designated as an Area of Concern under the Great Lakes Water Quality Agreement, and Indigenous Nations did not believe the U.S.-Canada remediation process for the binational AOC respected their sovereignty. So, Tribes and First Nations aligned together and the Sault Tribe of Chippewa Indians, Bay Mills Indian Community, Garden River First Nation, and Batchewana First Nation entered into a treaty for shared water governance (Ettawagheshik 2008). These developments occurred as Indigenous activism and assertion of rights were taking center stage in international law and policy with the signing of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

International Water Law

In 2007, UNDRIP was ratified by the UN General Assembly. The UNDRIP is an international instrument that delineates the individual and collective rights of Indigenous Peoples. However, Canada, the United States, New Zealand, and Australia were not initial signatories to the document. However, Canada, the United States, New Zealand, and Australia were not initial signatories to the document. In 2009 and 2010, Canada and the United States respectively endorsed UNDRIP (Black and McBean 2017). However, they both did so with qualifications and did not work immediately towards domestic implementation of the agreement.

In 2016, Canada announced it not only endorsed the document but would explore opportunities for domestic implementation. Although, to date, more than three years since the announcement, there has been no substantive UNDRIP implementation advancements under domestic law in Canada. Furthermore, under the Trump Administration, the previous U.S. endorsement for UNDRIP has been removed from the U.S. State Department website (U.S. Department of State 2017).

Despite these challenges to UNDRIP, the U.S. and Canada's endorsement of UNDRIP do in large part constitute support for conceptual changes in international customary law regarding Indigenous Peoples' water rights (Robison et al. 2018). Inspired by the advancements at the international level including numerous water declarations, Great Lakes Indigenous Nations articulated their teachings for water governance in 2008 when the Chiefs of Ontario convened a water gathering of all Nations who issued the *Water Declaration of the Anishinaabek, Mushkegowuk and Onkwehonwe*, acknowledging that Indigenous Peoples are the "caretakers" for the water (McGregor 2014; Arsenault et al. 2018). Undoubtedly, the evolution of discourse on the rights of Indigenous Peoples and their territories, lands, and waters impacted the institutional developments in the Great Lakes in subsequent years. Prior iterations of the Great Lakes Water Quality Agreement included no mention of Indigenous Peoples which shifted after the US and Canadian endorsements of UNDRIP by 2010.

Indigenous Water Governance Organizations

The shift in multilevel governance discourse in the Great Lakes is most prominently seen in the 2012 revisions to the Great Lakes Water Quality Agreement. Finally, in 2012 the U.S. and Canada recognized Indigenous Nations in the agreement as having a role in Great Lakes water governance. Although Indigenous Nations are finally mentioned in the 2012 GLWQA, they are

not signatories to the agreement and are often listed as consultative parties in textual strings that align them with “stakeholders” and/or “the public”. This is problematic because it amounts to tokenism in many instances rather than meaningful collaboration with equity in decision-making. Meanwhile, the increased mention of Indigenous Nations and traditional ecological knowledge in the 2012 GLWQA has led to more Indigenous representatives on International Joint Commission (IJC) advisory boards.

The current structure of the International Joint Commission provides three commissioner seats for the U.S. and three for Canada (Tarlock 2008; Kornfeld 2008). While there are no designated commissioner seats for Indigenous Nations, Canada appointed Henry Lickers, a Haudenosaunee citizen of the Seneca Nation, Turtle Clan, to one of the three Canadian commissioner seats in 2019 (IJC 2019). He is the first Seneca Nation citizen to serve as an IJC commissioner. Without a renegotiation to the Boundary Waters Treaty, an Indigenous commissioner does not represent the interest of their Indigenous Nation but those of the U.S. or Canada depending on the designated seat. Whereas true equality would include a designated seat for an Indigenous commissioner in full recognition of Indigenous sovereignty. However, many Indigenous leaders in the basin argue that one seat is not enough and may promote a pan-Indigenous identity lacking full recognition of the distinct sovereign nations in the basin.

In the absence of a multilevel governance organization for Great Lakes decision-making that respects Indigenous sovereignty Tribal Nations, First Nations, and Métis have developed their own organizations for Indigenous water governance (See Table 2). Two of the Indigenous organizations that have had formidable impacts on multilevel governance in the Great Lakes through their advocacy, science, and policy development include the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and the Haudenosaunee Environmental Task Force

(HETF). GLIFWC and HETF are well known for blending Indigenous and western science, innovation in scientific advancements, and being consistent recipients of key research funding. Other intertribal, political, territorial, and regional organizations have shaped the mobilization of Indigenous water governance in the basin through issuing resolutions, declarations, and research studies.

Table 2. Indigenous governmental and quasi-governmental organizations and their authorities in the Great Lakes Basin related to Indigenous water governance.

Organization	Acronym	Role/programme/authority
Aboriginal Water and Wastewater Association of Ontario	AWWAO	A non-profit promoting the importance of establishing an effective operations and maintenance management plan to ensure proper care is performed for the assets in connection with the water and wastewater treatment plants that serve First Nations in Ontario
Assembly of First Nations	AFN	A national advocacy organization representing First Nation citizens in Canada, which includes more than 900,000 people living in 634 First Nation communities and in cities and towns across the country
Association of Iroquois and Allied Nations	AIAI	Provincial Territorial Organization working to defend and enhance the Indigenous and treaty rights of member First Nations
Chiefs of Ontario	COO	Political forum and secretariat for collective decision-making, action, and advocacy for the 133 First Nations
Chippewa-Ottawa Treaty Fishery Management Authority	CORA	Inter-tribal management body for the 1836 Treaty providing fishery management, fishery enhancement and law enforcement
EPA's American Indian Environmental Office	AIEO	Leads EPA's efforts to protect human health and the environment of federally recognized Tribes by supporting implementation of federal environmental laws consistent with the federal trust responsibility, the government-to-government relationship, and EPA's 1984 Indian Policy
Great Lakes Indian Fish and Wildlife Commission	GLIFWC	An agency of eleven Ojibwe tribes in Michigan, Wisconsin and Minnesota; assists in protection of treaty rights and natural resources; provides natural resource management expertise, conservation enforcement, legal and policy analysis, and public information services
Great Lakes Inter-Tribal Council, Inc.	GLITC	An inter-tribal organization advocating for the advancement and promotion of tribal nations and communities by honoring the seventh-generation perspective
Haudenosaunee Environmental Task Force	HETF	Assists Haudenosaunee Nations in their efforts to conserve, preserve, protect and restore their environmental, natural and cultural resources
Inter-Tribal Council of Michigan, Inc.	(I.T.C.)	Inter-tribal organization assisting twelve federally recognized tribes in Michigan in environmental and natural resource assessment, planning, and permitting.
Métis Nation of Ontario	MNO	Indigenous government for Métis Peoples in Ontario.
Midwest Alliance of Sovereign Tribes	MAST	Coordinates public policy issues and initiatives at the state, regional and federal levels, promotes unity and cooperation among member tribes and advocates for 35 sovereign tribal nations of Minnesota, Wisconsin, Iowa, and Michigan
Mother Earth Water Walk	MEWW	Two Anishinawbe Grandmothers, and a group of Anishinawbe Women and Men have taken action regarding the water issue by walking the perimeter of the Great Lakes.
National Congress of American Indians	NCAI	Anon-profit organization, advocates for a bright future for generations to come by taking the lead to gain consensus on a constructive and promising vision for Indian Country
National Tribal Water Council	NTWC	Advocate for the best interests of federally-recognized Indian and Alaska Native Tribes, and Tribally-authorized organizations, in matters pertaining to water

Native American Fish & Wildlife Society	NAFWS	A national Native American non-profit organization serving as a communication medium for self-determined Native American fish and wildlife managers
Native Women's Association of Canada	NWAC	An aggregate of thirteen Native women's organizations from across Canada working to enhance, promote, and foster the social, economic, cultural and political well-being of First Nations, Métis and Inuit women
Ontario Indigenous Women's Water Commission	OIWWC	Reasserts and promotes the Traditional and inherent roles of Indigenous women as the caretakers of the waters by engaging in Traditional practices, participating in education and planning on water issues, and forming relationships among Indigenous women
The 1854 Treaty Authority		Inter-Tribal Natural Resource Management Organization that manages the off-reservation hunting, fishing and gathering rights of the Grand Portage and Bois Forte bands of the Lake Superior Chippewa in the territory ceded under the Treaty of 1854
The Anishinabek Nation, Union of Ontario Indians	UOI	Political advocate for 40 member First Nations across Ontario and traces its roots to the Three Fires Confederacy
United South and Eastern Tribes	USET	A non-profit, inter-tribal organization that collectively represents its member Tribal Nations at the regional and national level
United Tribes of Michigan	UTM	Inter-tribal organization committed to join forces, advance, protect, preserve and enhance the mutual interests, treaty rights, sovereignty and cultural way of life of the sovereign tribes of Michigan throughout the next seven generations
Wisconsin Tribal Conservation Advisory Council	WTCAC	Association that provides a forum for eleven Native American Tribes in Wisconsin to identify and solve natural resource issues on Tribal lands

Observations of Water Institutions in Great Lakes Basin and Indigenous Water Institution Recommendations

The review of some of the key developments in Great Lakes institutions influencing Indigenous engagement in multilevel governance in the basin highlight that principles of Indigenous water governance remain generally unarticulated by the U.S. and Canada Great Lakes management systems. To advance multilevel governance in the Great Lakes, Indigenous water institutions need to be recognized and policy reform must respect Indigenous worldviews for water protection. According to Karkkainen (2006), the core problem facing the Great Lakes “is that our institutions are mismatched to the nature and scale of the problems we are trying to address in the Great Lakes Basin” (p. 1254). This is especially true when the geopolitical scales of Indigenous Nations are considered in the context of existing settler-colonial institutions for Great Lakes governance. Indigenous Nations are left to participate in institutions they had little to no involvement in designing, which can be a crippling cultural mismatch contributing to water governance failures (Cornell and Kalt 2000).

Increasingly, intertribal organizations and political-territorial organizations that represent collectives of Indigenous Nations have been expanding their portfolios to include programs and advocacy for Indigenous water justice and governance as highlighted earlier with the work of the Assembly of First Nations and National Congress of American Indians. However, Indigenous Nations are realizing that those organizations continue to exist within a territorial frame set out by the settler-colonial state, that does not fully account for all Indigenous Peoples' needs in the basin. There is a lack of Indigenous institutions dedicated to water management for Great Lakes Indigenous Nations that respond to the diversity of sociocultural experiences and water knowledges of Tribal Nations, First Nations, and Métis. Indigenous governance principles for many of the Great Lakes Indigenous Nations center on collaboration and joint problem-solving recognizing that all nations have a role in decision-making and consensus building (Doxtater, 2011).

The principle Indigenous nationalisms of Anishinaabe, Haudenosaunee, Algonquin, and Métis have water laws and approaches to water governance that are similar in many ways although not the same; however, a unifying factor is their shared experience of water colonialism within the Great Lakes basin. A shared concern among Indigenous leaders in the basin is the lack of equitable representation in the transboundary water institutions that make decisions about the water of the Great Lakes. Indigenous Nations have continually resisted claims of 'aqua nullius' through legal and policy mechanisms available to them throughout history including but not limited to petitions, litigation, lobbying, declarations, protest, and occupation. Indigenous resistance to water colonialism led to innovations in water governance aimed at reforming the normative framework by reclaiming and creating viable Indigenous institutions for water governance. However, litigation and lobbying are often very costly and Indigenous protest and

alternatives such as protest and occupation have been met with state violence and criminalization of Indigenous Peoples.

This study has shown some institutional evolution of settler-colonial institutions for Great Lakes water governance. For example, the additions of Indigenous Peoples and Traditional Knowledge to the 2012 Great Lakes Water Quality Agreement. However, the evolution has not been sufficient, nor does it meet the U.S. and Canada's obligations under international law and the United Nations Declaration on the Rights of Indigenous Peoples. The path to dismantling inequities in decision-making for transboundary water governance that minimize Indigenous participation is said to be a path of litigation and legal reform (Bark et al. 2012). Bakker and Cook (2011) argue that within Canada First Nation water rights must first be litigated to see meaningful change in the equitable distribution of decision-making power in transboundary water governance. The necessity for litigated resolutions to Indigenous water governance claims is underscored by the colonial legacy that has disenfranchised Indigenous Peoples from our ancestral waters. A transboundary water governance system that does not recognize Indigenous sovereignty cannot claim institutional evolution in water management as it consciously masks the enduring legacy of colonization that created its contemporary water conflicts.

A new Great Lakes treaty that recognizes Indigenous Nations as parties with Canada and the United States would provide security for Indigenous water law. Furthermore, any new treaty should not negate previous treaties signed with Indigenous Nations, which remain the first transboundary Great Lakes water agreements. Indigenous leaders continue to express a desire for the Great Lakes to be granted legal personhood and a transboundary institutional evolution of this magnitude is critical for alignment with Indigenous water institutions. The International Joint Commission to fulfill its mandate of prevention and resolution of transboundary disputes

should seek to create three additional seats to be filled by commissioners from Indigenous Nations in the basin. Ultimately, a new treaty is needed to outline dispute resolution mechanisms that honor and build on the original treaties with Indigenous Nations in the basin. In the interim the International Joint Commission could facilitate coordination and allocate resources for all Great Lakes Indigenous Nations to gather and plan for a way forward that includes Indigenous water governance. Indigenous Nations also do not need to wait for settler-colonial institutions to do the right thing and immediately begin to scale up their political power creating a unifying transboundary Indigenous international organization that protects the water while reconstituting traditional kinship and nation-to-nation relations among Indigenous Peoples of the Great Lakes.

Conclusion

Through an examination of Indigenous Nation engagement in Great Lakes water institutions, this paper has shown that existing settler-colonial institutions do not adequately represent Indigenous interests which has led Indigenous Nations to seek out policy transfer opportunities to meet emerging needs. The study illustrates the many challenges Indigenous Nations have faced in seeking meaningful engagement and decision-making authority with respect to transboundary waters. In the end, Indigenous water institutions struggle to navigate an inherited colonial political system for water governance that limits recognition of their sovereignty and right to self-determination.

There is a growing subfield of water governance literature highlighting the unique components of Indigenous water governance, but it relies too heavily on theoretical and aspirational considerations of Indigenous parity in water governance and not enough on empirical evidence of Indigenous-led policy transfers. The study reveals that Indigenous water institutions emerge as Indigenous Nations seek meaningful engagement and decision-making

authority with respect to transboundary waters. Indigenous water institutions implement models of peoplehood and Indigenous nationalism rather than classification as stakeholders. This is important for the ongoing preservation and perseverance of Indigenous sovereignty. Sovereignty must be performed and within the context of settler colonialism Indigenous Nations operate under the principle of “use it or lose it”.

This study has identified a gap in the literature and future policy transfer scholarship on the Great Lakes needs to include Indigenous Nations. All of this suggests that Indigenous Nations seeking to create an Indigenous water institution should invest the time and resources necessary to insure the institution(s): (1) reflect Indigenous epistemologies for caring for water; (2) allow for meaningful nation-to-nation participation by Indigenous representatives across geopolitical scales; (3) support capacity development of Indigenous governments, agencies, and peoples to care for water in a manner supportive of traditional ways of life; and (4) supports Indigenous water rights and sovereignty without dependence on dominant society legal recognition. (Jackson, 2008).

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CHAPTER 3: GREAT LAKES PROTECTION AND INDIGENOUS PUBLIC OPINION POLLING

Introduction

The Great Lakes are essential to the cultural, political, socioeconomic and spiritual existence of many Indigenous Nations. In recent years, water (in)security of Indigenous Nations in the Great Lakes has emerged as a pressing concern, ranging from boil water advisories to climate change. Indigenous Peoples including Tribal, First Nation, and Métis leaders have expressed concern over the threatened state of the Great Lakes. Notably, Indigenous Peoples' understanding of Great Lakes issues and attitudes towards Great Lakes protection and restoration is largely absent from the Great Lakes public opinion literature (Benka et al. 2012). However, Indigenous resistance to the colonial water management status-quo has only gained more public attention with anti-pipeline and Indigenous rights movements such as NoDAPL and IdleNoMore, which were Indigenous mobilizations in defense of water led predominately by women and young people. Moreover, unique Indigenous voices advocating for Great Lakes protection have gained traction in Great Lakes public discourse, including water walkers like Josephine Mandamin or Autumn Peltier. Autumn is not only a water ambassador but made history as the youngest Chief Water Commissioner for the Anishinabek Nation. Despite the increase in media attention, recent polls surveying U.S. and Canadian citizens on Great Lakes issues have failed to accurately represent Indigenous Peoples in their sampling. The variances of attitudes of Indigenous and non-indigenous peoples in the Great Lakes is necessary to understand the support for Great Lakes policies or lack thereof, and potential for enhancing policies to be reflective of Indigenous concerns in fulfillment of Indigenous rights and treaty obligations.

This article presents the results of the International Joint Commission Water Quality Board Great Lakes Basin binational 2018 public opinion poll and places it in the context of the current state of Indigenous engagement in Great Lakes governance. It further examines Indigenous Peoples opinions on perceived threats to the Great Lakes, the importance of watershed and Great Lakes protection, awareness of the IJC, understanding of cross-border water protection efforts and the importance of cross-border solutions to achieving a healthy Great Lakes system. The first GLWQB binational poll was in 2015 and included a telephone survey of residents living in the Great Lakes basin catchment area. The 2015 poll established baseline data for Great Lakes residents' perceptions and perceived threats to the Great Lakes. The 2015 poll did not ask respondents whether they identified as Indigenous. Demographic data only included geo-political references to states, provinces, the U.S. and Canada. However, it was unclear from the 2015 poll how Indigenous Peoples in the basin may differ in their attitudes and awareness of the health and perceived threats to the Great Lakes. The GLWQB worked to address these concerns through a variety of policy changes and survey redesign discussed further in the article. In 2018, the second binational poll was conducted and included a representative sample of Indigenous Peoples based on self-identification. Although the 2018 poll generally expressed similarities of concerns for the Great Lakes across Indigenous and non-indigenous peoples, I found significant variation regarding attitudes towards: (1) Great Lakes health, (2) role of the IJC, (3) sources of environmental news information, (4) fishing, (5) drinking water, (6) environmental regulations, (7) political action and protesting, (8) impact of pipelines, and (9) intergenerational stewardship obligations.

I begin by discussing the role of Indigenous Peoples in public opinion polls and potential paths forward for greater representation. I then outline the evolution of engagement policy of the

Great Lakes Water Quality Board (GLWQB) and the main features of the Great Lakes Basin Binational Poll. I analyzed the results of the binational poll focusing on the attitudes of Indigenous Peoples towards Great Lakes protection and the specific perceived threats to water. Non-indigenous peoples' responses are also analyzed for areas of consensus, but also divergences. Lastly, the public opinion of Indigenous Peoples is examined for agreement, or lack thereof, with existing Great Lakes policy and potential for new policy innovation.

Indigenous Peoples and Public Opinion Polls

Public opinion polls constitute a fundamental component of western democratic political communication, especially in the U.S. and Canada (Vedachalam et al. 2014; Kuru et al. 2017). Political elites use public opinion polls to shape the policy agenda, and everyday citizens look to polls to inform their attitudes toward big policy issues such as the environment, climate change, and Great Lakes protection (Jacobs and Shapiro 2000; Kuru et al. 2017). Public opinion polls have an important role in political discourse and in expression of public views on policy and state building (Herbst 1993; Rosenstiel 2005). However, Indigenous actors are often not seen as polling influencers for policy agenda setting and lumped into a statistically insignificant subsection of the “public” that discounts their political status as citizens of sovereign nations (McLeod et al. 1994; Crespi 2013; Price 2008). As Clark (2005) highlights public opinion polls have historically marginalized Indigenous voices, which he calls an act of colonization that favors the opinions of the settler masses and that “[w]ith this transformation [Indigenous Peoples] lose our autonomy- our ability to speak for and otherwise render ourselves visible with all of our various faces, to represent all of our Indigenous diversity” (p. 229).

A critical juncture in the discourse of Indigenous public opinion polling occurred when *Sports Illustrated* published its 2002 article entitled “Indian Wars” claiming scientific findings

on American Indian attitudes towards Native American sports mascots (Clark 2005; King et al. 2002; Bresnahan and Flowers 2008). The polls referenced in the article claimed to be representative of American Indians and that the poll findings supported public assumptions that anti-Indian mascot advocates were out of touch with “real” Natives (King et al. 2002). The backlash explosion from Indian Country has reverberated since then, and now every public opinion poll is scrutinized by Indigenous Peoples and the leaders of Indigenous Nations for its scientific method, ethical design, and representative sampling. This is also part of a growing movement for Indigenous data sovereignty, which Kukutai and Taylor (2016) define as the “proper locus of authority over the management of data about [I]ndigenous [P]eoples, their territories and ways of life” (p. 14). Ultimately, Kukutai and Taylor (2016) prescribe a process of decolonization for the realization of Indigenous rights to self-determination including Indigenous data rights to data collection, ownership, governance, and use. Thus, polling must also undergo a process of decolonization that recognizes the autonomy and authority of Indigenous Peoples over our data, especially the conveyance of the diversity of Indigenous public opinions.

Indigenous Peoples have been excluded or ignored in most public opinion polling for a number of possible reasons. The absence of Indigenous Peoples in public opinion polling removes them from the media coverage of issues that shape public attitudes, influence political decisionmakers, and frame policy discussions (Rosenstiel 2005). This furthers Indigenous erasure among the public, political actors, and within the policy agenda. Indigenous opinions are often framed as counter to colonial state agenda and perhaps their erasure from the polls is seen as a necessary measure for sustaining a positive feedback loop of settler attitudes and preferences for agenda setting (Kuru et al. 2017). Indigenous public opinions are perceived as a threat to colonial state building because if communicated to the majority public, they might dissuade the

public from accepting current colonial practices in favor of the adoption of a decolonial policy agenda. As Kuru et al. (2017) highlight “[p]oll results can alter attitudes because people do not make political decisions in a vacuum” (p. 424). One explanation for the erasure of Indigenous Peoples from public opinion polls is that the colonial state is fearful of how Indigenous political ideologies might shift how settler citizens make political decisions.

Additionally, Indigenous erasure may also be attributed to the lack of Indigenous scholars designing and analyzing public opinion research. This may be attributed to an ontological misalignment of Indigenous and non-indigenous perspectives and use and benefit of “polling” in society. Prior to the formation of the U.S. and Canada it is unclear whether Indigenous Nations engaged in a “polling” process for informing Indigenous decision-making. Nevertheless, public opinion polls have become an important tool in social science research for understanding societal political discourse (Clark 2005). Indigenous scholars and governments may not perceive public opinion polls to be a cultural match or of governmental use for policy development, implementation and evaluation. However, new discourse on Indigenous Data Sovereignty argues that Indigenous governance data needs are expansive and necessary for good governance.

Furthermore, a critical actor in the flow of public opinion polling is the media, which has a well-documented dearth of accurate representation of Indigenous Peoples (Johnson 2011; Lam et al. 2017; Leavitt et al. 2015; Harding 2006). A contributing factor to the absence of Indigenous Peoples in public opinion polls is their historic lack of access to communications infrastructure technology used in polling such as the telephone and internet (Bissell 2004; Gordon et al. 2003; Parkhurst et al. 2015; Beaton et al. 2004). This Turtle Island digital divide has had a severe impact on Indigenous political participation in the broader landscape of U.S. and Canadian politics. The rise of new digital technologies including cellular phones and social

media and the decrease in service delivery costs have improved Indigenous Peoples' access to the world and their ability to participate in public opinion polls.

Another explanatory factor for the lack of Indigenous public opinion polls in the Great Lakes may link to the period of origination of public opinion poll use, specifically the New Deal era of the 20th century (Clark 2005). During this time Canada and the United States were not yet operating under a federal policy of self-determination for Indigenous Peoples; it was instead a period marked by termination and erasing the “Indian problem” (Newhouse and Belanger 2010; Koppes 1977; Stuart 1977; Philp 1983). Pollsters from the outset were not encouraged to document indigeneity, and if they were instructed to document all population subgroups perceived obstacles with surveying Indigenous Peoples led some researchers to label them “hard-to-reach” or “statistically insignificant” given sampling frames. (Lavelle et al. 2009, p. 385). Moreover, Indigenous Peoples may also be reluctant to participate in public opinion polls if they feel their participation would be complicit with the U.S. and Canada's ongoing attempts to colonize their people. Similar non-participation is well documented relating to Indigenous Peoples participation in the U.S. and Canadian federal censuses and electoral processes (Saku 1999; Smylie and Firestone 2015; Norton and Manson 1996; Jacobs 2010; Harell and Panagos 2013). The absence of Indigenous Peoples is a key gap in the research that has prevented the evolution of a representative examination of contemporary Indigenous politics in juxtaposition to American and Canadian policy development as informed by public opinion polls.

Great Lakes Polling

The underlying assumption is that public opinion in the Great Lakes is not driven by individual ideologies, but rather conformity to intellectual inheritances of state identity that inform U.S. and Canadian outlooks and choices for how best to protect the Great Lakes.

However, missing from the public opinion polling is the third sovereign identity within the transboundary framing – Indigenous Nations. Indigenous Peoples' associated identities with Indigenous governments and potential subscription to dual national identities claiming also that of Canada or the U.S., as a fiduciary, inform their outlook and choices for how to protect the lakes (Headley and Reitzig 2012; Devetak and True 2006). Previous studies have examined the differences between Canadian and American Public opinions on support for environmental regulations but recognize that other marginalized populations such as Indigenous Peoples are poorly represented (J. Méthot et al. 2015). In contrast, widening of the sampling frames for public opinion polls to include Indigenous Peoples enhances the reliability of the measures of opinion on issues of agenda setting (Vedachalam et al. 2014). Environmental policy development should be inclusive of Indigenous Peoples, and their public opinions on environmental-related issues is an important channel for connecting to non-Indigenous political actors, the public and the media (Tang et al. 2018).

A contributing factor to the absence of Indigenous Peoples in public opinion polls is their historic lack of access to communications infrastructure technology used in polling such as the telephone and internet (Bissell 2004; Gordon et al. 2003; Parkhurst et al. 2015; Beaton et al. 2004). This Turtle Island digital divide has had a severe impact on Indigenous political participation in the broader landscape of U.S. and Canadian politics. The rise of new digital technologies including cellular phones and social media and the decrease in service delivery costs have improved Indigenous Peoples' access to the world and their ability to participate in public opinion polls.

Like most public opinion polling, versions of Great Lakes Water Quality Agreement prior to 2012 did not include a direct mandate for the engagement of Indigenous Peoples,

resulting in limited avenues for the expression of Indigenous opinions on Great Lakes issues to be heard by the International Joint Commission, its advisory boards, and the public. The marginalization of Indigenous Peoples from public opinion polls on environmental policy and water management in the Great Lakes repeats historical acts of marginalization including the reserve system that in many instances forcibly relocated Indigenous Nations and limited their access to the Great Lakes (Perry and Robyn 2005, p. 599).

The invisibility of Indigenous Peoples in public discourse surrounding the Great Lakes may be contributing to the distrust Indigenous Peoples have towards the U.S. and Canadian governments. The lack of transparency of decision-making and uncertainty of how Indigenous opinions on critical Great Lakes issues are being considered limits intergovernmental coordination for Great Lakes protection. The combined invisibility and distrust make it difficult for Indigenous Peoples in the Great Lakes region to work collaboratively with non-Indigenous actors (Egan and Mullin 2017; Greaves et al. 2018). Furthermore, Indigenous participation in Great Lakes public opinion polls are important for the legitimacy of Canada and U.S. environmental decision-making (Drews et al. 2018). The exclusion of Indigenous Peoples as reflected in public opinion polls may be a violation of the U.S. and Canada's fiduciary responsibility to Indigenous Peoples, lands and territories as well as their international responsibilities under the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

Background on Great Lakes Water Quality Board

The 1909 Boundary Waters Treaty (BWT) established a mechanism for the management of transboundary waters between the United States and Great Britain (later Canada). It provided for dispute resolution pertaining to navigation rights, water use and diversion, and maintenance

of water levels. “The BWT established the International Joint Commission (IJC) to provide impartial advice to the governments related to issues regarding the boundary waters between the two countries” (Barbiero et al. 2018, p. 540). In 1972 the US-Canada Great Lakes Water Quality Agreement (GLWQA) was signed and the Great Lakes Water Quality Board (GLWQB) was established to serve in advisory capacity to the International Joint Commission on ways to ensure to realization of the Agreement. The stated intent of the board is that work “be conducted in a manner that merits public trust and confidence” (Great Lakes Water Quality Board 2018).

However, missing from the BWT and GLWQA was any mention of Indigenous Nations (Hand 2007). This did not change until 2012 when the agreement was revised and finally included Indigenous Peoples “RECOGNIZING that, while the Parties are responsible for decision-making under this Agreement, the involvement and participation of State and Provincial Governments, *Tribal Governments, First Nations, Métis*, Municipal Governments, watershed management agencies, local public agencies, and the Public are essential to achieve the objectives of this Agreement...” (emphasis added). Furthermore, the 2012 GLWQA required that the Great Lakes Water Quality Board for the first time include representatives from Tribal Governments, First Nations, and Métis. Indigenous representatives may have formerly been involved, but the recognition of formal Tribal Nation, First Nation, and Métis roles were not officially designated. The shift towards greater inclusion of Indigenous Peoples in the GLWQA was likely the result of multiple policy developments in the first decade of the 21st Century, including the 2004 Tribal and First Nations Water Accord (addressing Indigenous concerns for Great Lakes protection) and the 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Generally, this shift in U.S. and Canadian federal policy has supported greater representation of Indigenous Peoples on the advisory boards of the International Joint

Commission; however, there is limited evidence showing this increase in representation has led to any substantive legal or policy transformation towards realization of self-determination and nation-to-nation governance relationships among Indigenous Nations, the U.S. and Canada for Great Lakes protection.

Under the directive of the IJC, the Water Quality Board is charged with ensuring public engagement with board meetings and activities. The Directive also provides the board with the discretionary authority for the establishment of committees to meet the overall mandates. One of the committees established by the board is the Engagement Work Group (EWG), which consists of select WQB board members working to advance engagement with the public and Indigenous Peoples in the Great Lakes (Great Lakes Water Quality Board 2018). In response to the requirement of the 2012 GLWQA for public engagement, the Engagement Work Group of GLWQB developed the first Binational Poll in 2015 (GLWQB 2016). However, the 2015 Binational Poll did not track whether poll participants were Indigenous.

The GLWQB hosted a panel discussion with Indigenous leaders in Thunder Bay, Ontario in November 2016 that included commentary from local Indigenous leaders on how to enhance coordination for Great Lakes protection (IJC 2016). With new insight on engaging Indigenous Nations in the basin and in recognition that Indigenous Peoples have unique political, socioeconomic, and cultural concerns for the Great Lakes that often differ from the general non-Indigenous public, the WQB developed an “Indigenous Engagement Policy” in the spring of 2017 (GLWQB 2017). The board understood that there was a need to have a unique strategy for Indigenous engagement, separate from their strategy for general public engagement, acknowledging Indigenous Peoples as rightsholders. The 2017 WQB Indigenous Engagement Policy (IEP) recognizes that Indigenous Peoples have “diverse interests, needs and concerns,

distinct knowledge and ways of knowing, and their institutions for governance” and further that Tribes, First Nations, and Métis are rights holders as nations and not “stakeholders” (GLWQB 2017). The IEP further stipulates that the GLWQB “will seek opportunities to highlight the distinct perspectives of Tribal, First Nations and Métis peoples, and to account for distinct concerns among Indigenous peoples in the Great Lakes basin” and “in designing surveys to seek the perspectives of key actors in the basin, the WQB will ensure that Tribal, First Nations and Métis peoples are adequately represented in samples” (GLWQB 2017). The emergence of the IEP guided the design of the second binational Great Lakes Basin Poll developed by the GLWQB to ensure Indigenous Peoples were accurately represented in the polling sample.

The article reports on findings from a survey of public understanding of the Great Lakes amongst a sample of Indigenous residents in the region. Indigenous Peoples in the Great Lakes had not previously been an identified demographic for polling unlike states/provinces. Carving out space for Indigenous Peoples identification is important for our understanding of public opinion on the Great Lakes. Indigenous Peoples are likely to have differing views from the societal majority as individuals are often influenced by the opinion of their identifying societal group (Oshagan 1996). This study was primarily exploratory and aimed to reveal individuals’ unprompted knowledge and beliefs about the governance and security of the Great Lakes. A key point of focus was on whether there is any variation in understanding among Indigenous and non-indigenous peoples in the basin.

Methods and Data

I use public opinion data from the Great Lakes Water Quality Board Binational Great Lakes Basin Poll, specifically the survey issued in 2018 - Second Binational Great Lakes Basin

Poll¹⁰ – concerning the attitudes of Great Lakes Basin residents including a representative sampling of Indigenous populations (IJC 2018). I requested access to the crosstabulation report from the International Joint Commission and developed my analysis based on the provided dataset of with demographic tabulations of Indigenous and non-indigenous residents. The poll is the first survey to include Indigenous attitudes towards Great Lakes protection and watershed management. The poll was administered in January 2018 using a dual sample frame RDD telephone number database that included landlines as well as cell phones of residents in the Great Lakes basin catchment area. My analysis of the data centered on comparisons of Indigenous and non-indigenous respondents as demographic characteristics of interest to Indigenous research partners. Although future analyses of the data could also explore poll differentials based on intersectionality of cultural and jurisdictional plurality. The 2018 Binational Poll is the first water quality poll in the basin that is representative and inclusive of Indigenous populations alongside non-indigenous populations (See Table 1).

Table 1. Poll Participants

	Sample (N)	Percent (%)	Error Rate (95% Confidence Level)
<i>Non-Indigenous</i>	3950	92.9	±0.414%
<i>Indigenous</i>	300	7.1	±5.455%
Total	4250	100.0	±1.503%

¹⁰ IJC. (2018). 2018 Great Lakes Binational Poll Crosstabulation Report. Retrieved from https://ijccmi-my.sharepoint.com/:x:/g/personal/sarah_lobrichon_ijccmi_onmicrosoft_com/EWVKcevv9SZHs_hlDB_2smgB9rJM4ooFM8GwNFf15A93gg?rttime=8KjrYzg_10g. The 2018 Binational Basin Poll Results report can be accessed at: https://legacyfiles.ijc.org/tinymce/uploaded/WQB/WQB_Second_Poll_Report.pdf.

	Sample (N)	Percent (%)	Error Rate (95% Confidence Level)
<i>Ontario</i>	1100	25.9	±2.544%
<i>Michigan</i>	1100	25.9	±2.544%
<i>New York</i>	450	10.6	±4.369%
<i>Ohio</i>	350	8.2	±5.019%
<i>Illinois</i>	350	8.2	±5.019%
<i>Wisconsin</i>	280	6.6	±5.661%
<i>Indiana</i>	120	2.8	±8.82%
<i>Pennsylvania</i>	100	2.4	±9.685%
<i>Minnesota</i>	100	2.4	±9.685%
<i>Indigenous</i>	300	7.1	±5.455%
Total	4250	100.0	±1.503%

The 2015 Binational Poll did not ask respondents to identify if they were Indigenous. The 2018 poll included interviews with 300 Indigenous Peoples and a quota was set to ensure Indigenous, (CDA-First Nations) (US-Native American or Tribes) or Métis respondents were reached which resulted in an oversampling of this population to ensure a sample size $N=300 (\pm 5.7\%)$.¹¹

Oraclepoll designed a telephone survey instrument in consultation with members from the GLWQB Engagement Workgroup. The revisions to the 2018 poll including the addition of the Indigenous sampling techniques were reviewed by the Engagement Work Group of the GLWQB, which includes representatives from First Nations, Tribes, and Métis communities. The survey instrument was pilot tested among $N=20$ respondents to ensure clarity of design and that there were no errors in the CATI programming prior to full data collection (GLWQB 2018).

¹¹ The Indigenous/Métis breakdown by area is as follows: Ontario $N=80$, Michigan $N=60$ New York $N=25$, Ohio $N=25$, Illinois $N=25$, Wisconsin $N=25$, Indiana $N=20$, Pennsylvania $N=20$ & Minnesota $N=20$.

Thematic analysis is a flexible approach for assessing meaning across a data set including questionnaires that examine people's lived experiences and perceptions (Braun et al. 2019). The thematic analysis was guided by the six phases described by Braun et al. (2019): (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. The findings detailed below highlight the key findings from the review of the Second Binational Poll as it pertains to Indigenous public opinion on Great Lakes protection.

Indigenous Opinion on Great Lakes Protection

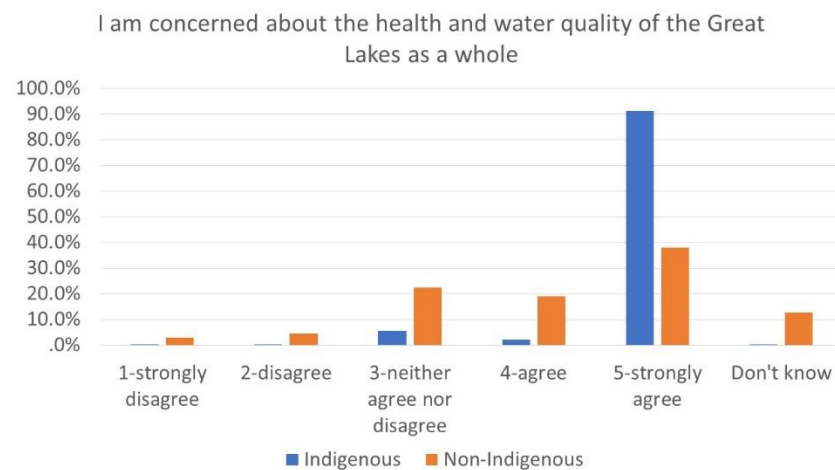
In this section, we examine six key areas of comparison of Indigenous Peoples' attitudes towards Great Lakes protection, including (1) the role of the International Joint Commission, (2) environmental regulation, (3) political resistance, (4) perceived threats to the Great Lakes, (5) cooperative governance, and (6) modes of engagement. Where possible we compare the results with the attitudes of non-indigenous peoples surveyed on those topics.

Perceived Threats to the Great Lakes

The first question for understanding Indigenous Peoples' attitudes towards Great Lakes protection is whether they perceive any threats to the lakes. I start by analyzing three questions from the Second Binational Great Lakes Basin Poll (2018) where Indigenous poll respondents (N = 300) shared their opinions on the Great Lakes. The first question asks poll participants to rate on a 5-point likert scale whether they agree or disagree with the statement, "I am concerned about the health and water quality of the Great Lakes as a whole." Positive responses of "strongly agree" were noted by 91.2% of Indigenous participants while only 57% of non-Indigenous respondents expressed any level of agreement with the statement (See Figure 1).

Suggesting that Indigenous Peoples have a high level of concern for the health of the Great Lakes.

Figure 1. Great Lakes residents’ concerns about the health and water quality of the Great Lakes.

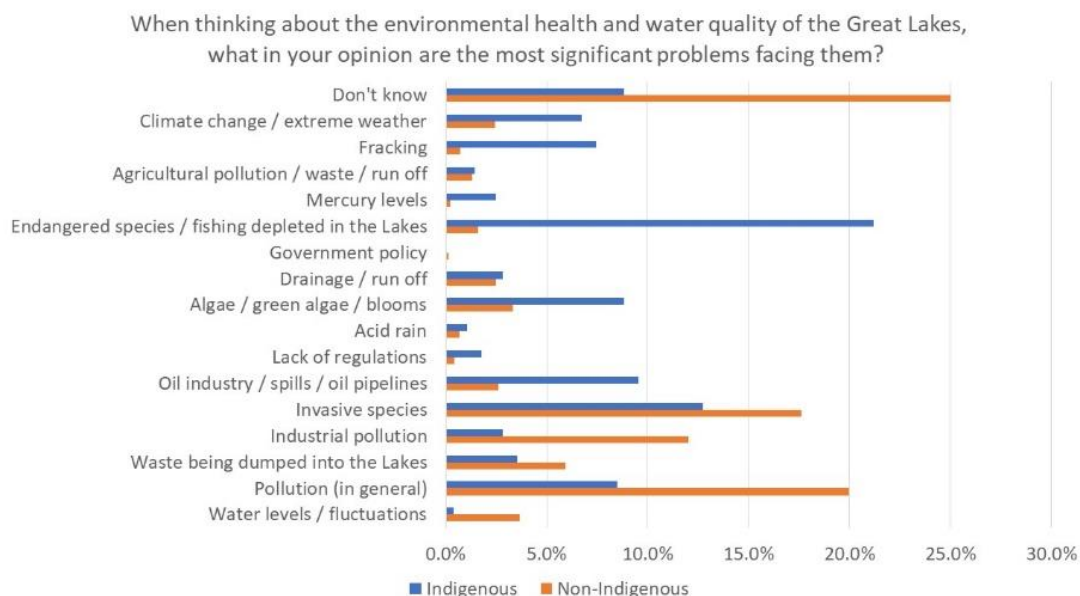


(Author’s Figure based on IJC 2018 Binational Poll Data)

A second question of the Binational Poll asks respondents: “When thinking about the environmental health and water quality of the Great Lakes, what in your opinion are the most significant problems facing them?” Indigenous participants’ top three responses included: endangered species and fish depletion (21.2%), invasive species (12.7%), and the oil industry, spills and pipelines (9.5%) (see Figure 3). There are treaty protected and non-abrogated fishing rights held by Indigenous Peoples of the Great Lakes and the maintenance of relationships with a variety of species are critical to Indigenous existence in the basin (Singel and Fletcher 2006). Scholars have noted the challenging impacts of invasive species on Indigenous communities (Beckford et al. 2010; Reo et al. 2017) as well as the depletion of fish stocks critical to Indigenous cultures and economies (Brenden et al. 2013; Doherty 2015). It is also not surprising that Indigenous respondents identified the oil industry, oil pipelines and oil spills as a top

problem facing the Great Lakes. In recent years Indigenous Nations and peoples throughout the basin have been actively resisting pipeline proliferation (Hunsberger and Awâsis 2019). Notably, only 2.6% of non-Indigenous respondents identified the oil industry as a problem facing the Great Lakes which aligns with previous studies (Brown et al. 2013) but highlights a discrepancy with Indigenous poll participants previously undocumented in the literature. A Great Lakes Commission study by Jérôme Marty and Adrian Nicoll (2017) entitled “Environmental Sensitivity to Oil Exposure in the Great Lakes Waters: A Multimodal Approach” provides support for the varying threats the oil industry poses to the Great Lakes and substantiates the concerns held by Indigenous Peoples.

Figure 2. Great Lakes residents’ identified problems facing the Great Lakes.



(Author’s Figure based on IJC 2018 Binational Poll Data)

Overall the results indicate that Indigenous poll participants have a strong concern for the health and water quality of the Great Lakes, and they attribute many of the problems facing the lakes to anthropogenic causes, particularly those of energy industries (fracking/oil). In contrast, non-

Indigenous respondents are much more likely to report a response of “I don’t know” or general “pollution” lacking the same level of specificity as seen with Indigenous respondents. These concerns for the threats facing the Great Lakes also map onto the constellation of water insecurity issues facing many Indigenous Nations in the basin such as water quality, quantity and ecosystem health. Ultimately, these water injustices have contributed to an enduring legacy of water colonialism (Robison et al. 2018). The Great Lakes threats as expressed by Indigenous respondents in the poll are important considerations for understanding agenda setting in the region and the way in which Indigenous water protection goals may not currently be considered amongst the majority non-Indigenous water agenda.

Indigenous Water (in)Security

There have been several studies on Indigenous water security (Arsenault et al. 2018; Norman and Bakker 2015; Mitchell 2019; Fox et al. 2017; Latchmore et al. 2018) and drinking water problems facing Indigenous Peoples in the Great Lakes region (Marshall et al. 2018; Collins et al. 2017). Lam et al. (2017) also documented how the media portrays water security issues in Indigenous communities in Canada, finding that there was limited coverage of Indigenous water challenges and existing coverage is often on settler government response to water problems. The Binational Poll provides an opportunity to explore Indigenous Peoples’ perceptions of water security issues, especially pertaining to drinking water. When asked “Can you tell me the source of where your drinking water comes from?” 20.7% of non-Indigenous participants responded with “I don’t know” compared to 1.4% of Indigenous respondents. The lack of understanding expressed by non-Indigenous respondents of where their water comes from may suggest they have lost their connection to the water. This is consistent with Indigenous elders concerns for the inability of contemporary society to sustain its connection to water

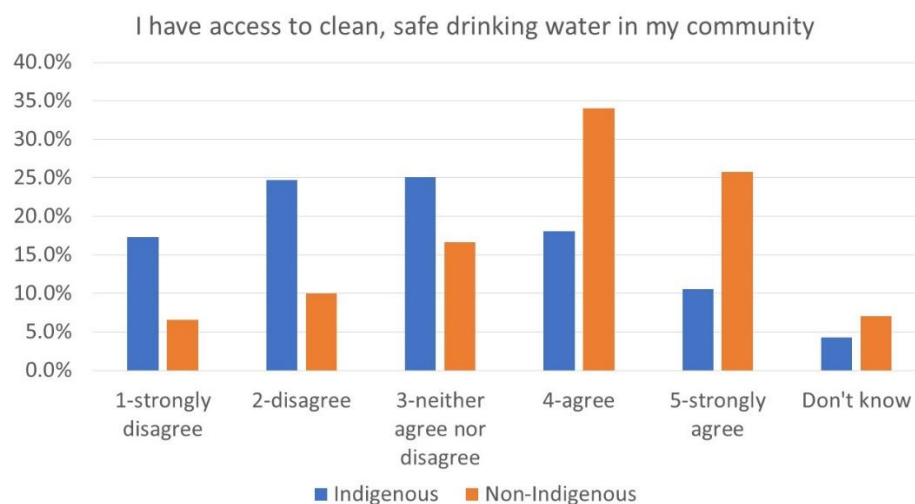
(Anderson et al. 2013). Indigenous Peoples overwhelmingly make the connection between the degradation of the Great Lakes and society's loss of connection to water. Once that connection is lost it is easier for society to disassociate the environmental degradation of the Great Lakes with human activity. Most Great Lakes residents get their drinking water from Lake Superior, Michigan, Huron, Erie and Ontario, although only 1 out of 4 non-indigenous respondents in the poll were able to name the lake their water came from.

An additional question asks poll participants to rate on a 5-point Likert scale whether they agree or disagree with the statement, "I have access to clean, safe drinking water in my community." Negative responses of "disagree" or "strongly disagree" accounted for 42% of Indigenous respondents, highlighting the drinking water concerns of many Indigenous poll participants. Non-Indigenous poll participants generally had positive responses expressing agreement (59.8%) with this statement (See Figure 3). This is not surprising since over fifteen First Nations in the Great Lakes basin currently or have been on long-term drinking water advisories lasting more than 12 months since 2015 (Indigenous Services Canada 2019), with many more shorter-term drinking water advisories occurring intermittently throughout the year (some lasting decades). Moreover, there is limited data on drinking water quality issues for communities that rely on private groundwater wells. In comparison to the Canadian government's commitment to end long-term drinking water advisories on First Nations reserves by 2021, there is limited data for drinking water advisories facing Tribal Nations and no increased financial commitment from the U.S. federal government under the current administration to ensure access to clean and safe drinking water for Tribes. Although non-indigenous people expressed less disagreement that they had access to clean, safe drinking water

recent water crises such as Flint, Michigan have changed the public discourse on drinking water concerns and how to communicate water risk in the basin (Ruckart et al. 2019).

Despite the community and individual water insecurity many Indigenous Peoples face in the basin, the poll results also show a greater concern to protect the Great Lakes not solely for human needs, but for all life, especially non-human relations and future generations.

Figure 3. Great Lakes residents’ opinions on their access to clean, safe drinking water.



(Author’s Figure based on IJC 2018 Binational Poll Data)

Why Protect the Lakes?

The Great Lakes Basin is home for more than 30 million people, including approximately 10 per cent of Americans and 30 per cent of Canadians. There are 112 Indigenous Nations¹² with occupied territories in the Great Lakes St. Lawrence River drainage basin and over 200 Indigenous Nations¹³ with a right and responsibility for the water of this region (Leonard 2019).

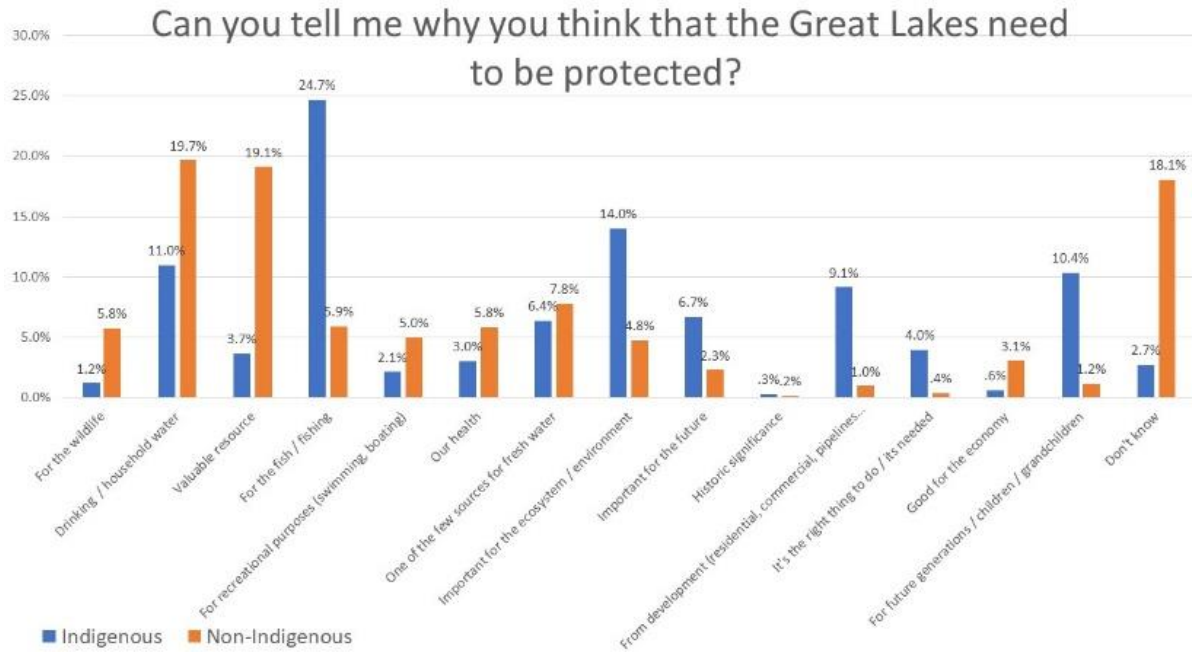
¹² Indigenous Nations is used to describe the political entities representing distinct national groups of Indigenous Peoples. Within the Great Lakes context this includes Tribal Nations, First Nations, and Métis.

¹³ Author’s own database – GLIAD.

Indigenous Peoples from the Great Lakes often comment that water is not commodity. Water has spirit it must be cared for and respected. As such, Indigenous residents of the Great Lakes have noted that economic benefits from water should not supersede the safety and well-being of the water and the life it supports. There is a long history of efforts to protect the Great Lakes (Creed and Laurent 2015). However, what is less known is the public's perception on why the Great Lakes should be protected. Notably, the 2018 Binational Poll asked participants: "Can you tell me why you think that the Great Lakes need to be protected?" The majority of Indigenous Peoples who participated in the poll responded that the protection of the Great Lakes is important for the fish (24.7%), ecosystem/environment (14%), drinking water (11%), and for future generations (10.4%) (See Figure 4). More than 97% of Indigenous poll participants had a reason they believed the Great Lakes should be protected whereas nearly 20% of the non-indigenous poll participants answered, "don't know".

Another key discrepancy among Indigenous and non-indigenous participants was the identification of the Great Lakes as a "valuable resource". Nearly one fifth of all non-Indigenous respondents identified that the Great Lakes needed to be protected because they are a valuable resource (19.1%); however, only 3.7% of Indigenous poll participants listed this reason. Indigenous Peoples often describe the lakes and all of the beings that inhabit the basin as their relations equating a familial connection that undergirds their efforts to protect these non-human relations. However, for non-Indigenous peoples Great Lakes environmental protection is often weighed against the economic needs of the settler state (Creed and Laurent 2015). The discrepancy in epistemological valuation occurring in the basin is key to understanding how economic driven policy decision making for the Great Lakes may be in opposition to Indigenous teachings on Great Lakes protection.

Figure 4. Great Lakes residents’ opinions on why the Great Lakes need to be protected.



(Author's Figure based on IJC 2018 Binational Poll Data)

The waters of the Great Lakes are integral to the creation stories of many Indigenous Nations in the basin and as such are woven into the cultural fabric of Indigenous communities as a source of life. Scholars have noted that the desire to protect the water is deeply rooted in cultural and spiritual preservation of Indigenous Peoples (Arsenault et al. 2018; Kozich et al. 2018). Many Indigenous Peoples express the sentiment that water is a gift from the Creator to be protected (Norman 2018). The Great Lakes ecosystems were central to many of the treaties made by the U.S. and Canada with Indigenous Nations in the basin who negotiated to protect in perpetuity their cultural, socioeconomic, and political identities encompassing activities such as fishing, hunting, manoomin (wild rice) harvesting, etc. (Whyte 2016). Generally, non-Indigenous Great Lakes residents are in support of protecting the Great Lakes, but have trouble identifying concrete actions to assist in their protection (Johns 2017). Indigenous Peoples’ protection efforts in the Great Lakes are often guided by Indigenous legal systems, clan teachings, and

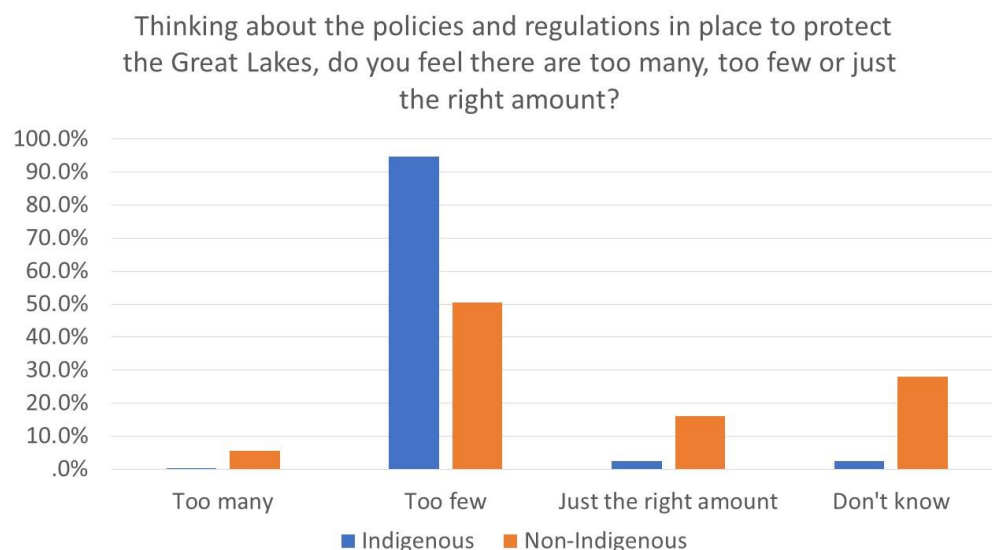
philosophies such as Baamaadziwin (Anishinaabe giikeedaasiwin) or the “Good Mind” (Haudenosaunee) (Whyte et al. 2016). There is also a documented mobilization for collective action among Indigenous Peoples to protect the lakes for the benefit of future generations (Arsenault et al. 2018; Whyte 2016). Importantly there are also gendered protection actions that account for the water teachings from Indigenous knowledge systems (Anderson et al. 2013). The poll results highlight key discrepancies among Indigenous and non-Indigenous poll participants’ opinions on why the Great Lakes should be protected. These results illuminate our understanding of the plural epistemologies of caring for water that exist in the basin and provide greater clarity on how environmental regulations can more adequately reflect and respond to Indigenous concerns.

Indigenous Peoples’ Pro-Environmental Regulation Positions

Poll participants were asked the following question: “Thinking about the policies and regulations in place to protect the Great Lakes, do you feel there are too many, too few or just the right amount?” Overwhelmingly, Indigenous poll participants (94.7%) thought there were “too few” policies and regulations in place to protect the Great Lakes compared to only 50.4% of non-Indigenous respondents (See Figure 5). Indigenous attitudes toward Great Lakes regulations and water policy are important for understanding basin politics and the growing water crises facing Indigenous Nations as they contend with industry and population expansion by the non-Indigenous community and settler-colonial state (Bishop 2013). Indigenous jurisdictions have also been targeted by corporations for perceived lack of environmental regulation, allowing for institutional exploitation where businesses pursue greater economic gain at the expense of the environment without fear of repercussions because they are aware of institutional and regulatory gaps on Indigenous territories (Hoover et al 2012; Leonard 2011). The rise of environmental

injustices facing Tribal Nations on the southern side of the Medicine Line¹⁴ led to the creation of the U.S. Environmental Protection Agency’s Indian Policy in 1984 (Darian-Smith 2010). The Indian Policy provided Tribes with greater access to exercise environmental authority over their reservations. Ranco (2008) highlights how this shift in federal policy allowed Tribal Nations to assume “primacy over certain portions of federal environmental laws in the United States (p. 354). On the U.S. side, Indigenous Peoples may be more accepting of environmental regulations because of their right to self-governance often reaffirmed in federal regulations whereby they exercise and assert primary regulatory authority in lieu of other sovereigns, as seen in the EPA’s Indian Policy (EPA 1984).

Figure 5. Great Lakes residents’ opinions on whether there are an adequate amount of policies and regulations in place to protect the Great Lakes.



(Author’s Figure based on IJC 2018 Binational Poll Data)

¹⁴ The “Medicine Line” is a term Indigenous Peoples often use to describe the “invisible” and politically fictitious border between the U.S. and Canada because of the “power” of the border to stop U.S. and Canadian soldiers from crossing during the Indian Wars of the 19th century. See Hogue, Michel. *Métis and the Medicine Line*. University of Regina Press, 2015, p. 4; and LaDow, B. (2013). *The medicine line: Life and death on a North American borderland*. Routledge, p. 41.

The literature is sparse on the opinions of Indigenous Peoples towards environmental regulations and scatter on their perspectives on regulations for protection of the Great Lakes. Scholars tend to focus on the regulatory relations of the U.S. and Canada, erasing Indigenous sovereigns from the conversation which then becomes centered around non-Indigenous regulatory norms (Darian-Smith 2010). Indigenous actors are not viewed as participants in the negotiations for development of policies and regulations for the Great Lakes; however, they are often negotiating regulatory development at multiple governance levels and active in consultation, public comment, petitions, litigation, lobbying and other means necessary for the protection of Indigenous rights. It is important to also recognize the systemic inequities preventing Indigenous Peoples participation in the creation of environmental regulations due to colonization and racism, which disenfranchises Indigenous Peoples from political decision-making forums of the settler-colonial state, especially with regards to environmental policy. However, Singel and Fletcher (2006) note there has always been a desire among Indigenous Nations in the basin for institutions and regulations that honor the treaties and support Indigenous sovereignty.

Indigenous Nations in the basin have also developed and enforced their own policies and regulations for Great Lakes protection (Hand 2007). Indigenous authority for regulatory primacy is protected under treaties and in many cases never abrogated to the colonial-settler state (McOliver et al. 2015). In both the United States and Canada, federal legislation requires consultation with Tribal Nations and First Nations for the creation of environmental regulations under the National Environmental Policy Act and Canadian Environmental Protection Act respectively (Dhillon and Young 2010, NEPA 1999, CEPA 1999). Under international law, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) Article 32

guarantees Indigenous Peoples right to free, prior, and informed consent. However, the proliferation of extractive industries in the basin such as mining and oil pipelines have often occurred without the consultation or consent of Indigenous Nations. As Darian-Smith (2010) highlights the omission of Indigenous Peoples from the conversation on Great Lakes regulation “reflects dominant attitudes toward native peoples that assume that tribes are peripheral, if not irrelevant, to mainstream society” (p. 360). This erasure of Indigenous environmental regulatory primacy from the multilevel decision-making in the Great Lakes supports the poll results indicating Indigenous Peoples believe there are not enough regulations.

According to McGregor (2010), there is a “breakdown” in U.S. and Canadian environmental regulations meant to protect Indigenous Peoples, lands, and resources per these federal governments’ fiduciary responsibilities (p. 76). Indigenous Peoples also tend to support increased environmental regulations, given the lack of engagement at provincial levels and the apathy at the federal level, which often leaves them prey to predatory industries (Garvie and Shaw 2016). Indigenous Peoples are generally in favor of increased regulations because history has shown it is regulation that provides protections for Indigenous rights. For example, in the U.S. protective measures such as Indian Child Welfare Act, Native American Graves Protection and Repatriation Act, and the American Indian Religious Freedom Act are only a few of the examples of federal regulations enacted to protect the civil liberties and rights of Indigenous Peoples. Indigenous favoritism towards environmental regulations is evident in the political and social mobilization of Indigenous Peoples during Idle No More and Standing Rock which emerged out of Indigenous resistance to the U.S. and Canada scaling back or blatantly disregarding existing environmental regulations (Norman 2017). Indigenous poll participants have identified that there are too few regulations in place to protect the Great Lakes and in many

ways the issues Indigenous Peoples face such as drinking water contamination, extractives industries, and predatory businesses are examples of why stricter regulations honoring the treaties and supporting Indigenous rights are needed.

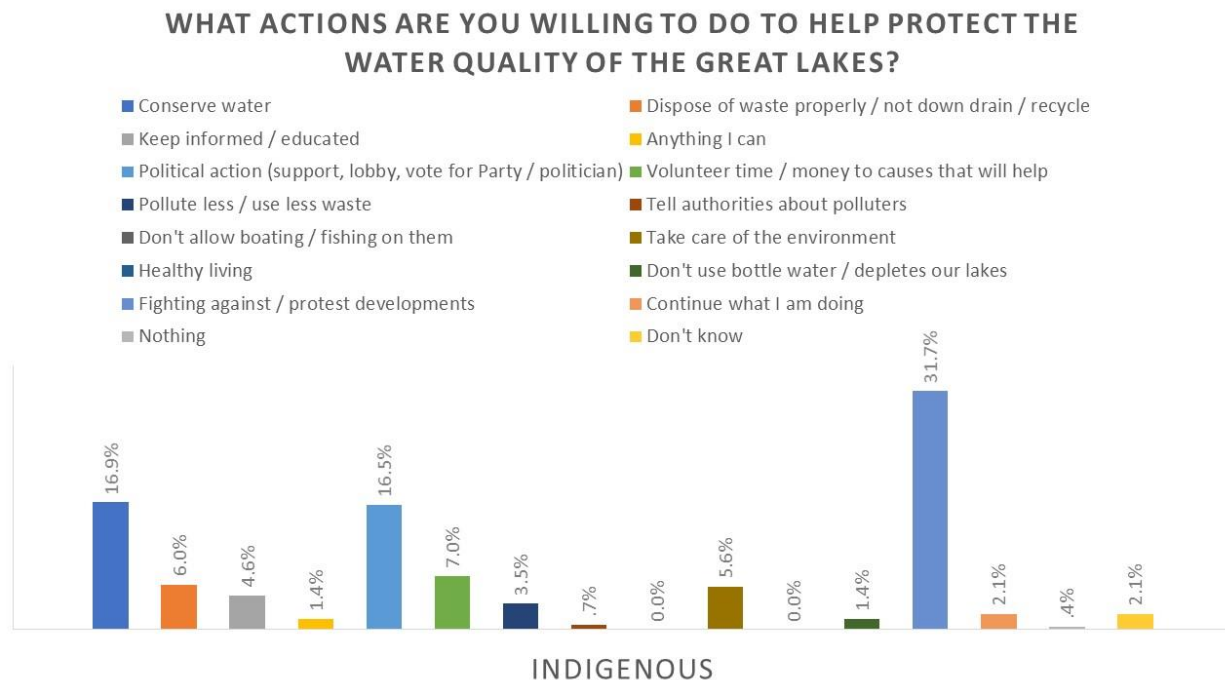
Indigenous Political Participation for Great Lakes Protection

The poll further provides insight into the attitudes of Indigenous respondents on preferred methods of mobilization for Great Lakes protection. Political representations of Indigenous Peoples in the media often portray angry tropes of Indigenous blockaders, protestors, tire burners, and generally anti-establishment terroristic actors that threaten the colonial-settler state status quo. The colonial state clings to these stereotypes out of fear of extinguishment of their ability to further settle and use the land because it can no longer meet the emerging legal thresholds for acquisition of Indigenous lands and resources established by mechanisms such as the UNDRIP (Proulx 2014). However, the stereotypes of Indigenous political activism remove Indigenous autonomy in defining our modes of political participation for water governance and protection of the Great Lakes. The existing literature has not studied how Indigenous Peoples in the Great Lakes basin mobilize for political change. The Second Binational Poll asked participants the following question: “What actions are you willing to do to help protect the water quality of the Great Lakes?” Notably, Indigenous participants top responses included: (1) Fighting Against/ Protest Developments (31.7%); (2) Conserve Water (16.9%); and (3) Political Action (16.5%). In comparison to non-Indigenous Poll Participants only 0.7% stated they would “fight against/protest developments” to protect the water quality of the Great Lakes. The discrepancy between Indigenous and non-indigenous people’s willingness to fight and/or protest for water protection represents an unprecedented finding for understanding Indigenous political participation. However, the willingness of Indigenous Peoples to fight and protest for the

protection of the water is not surprising given ongoing water colonialism, specifically the dispossession of Indigenous Peoples from their lands for water projects and the normalization of settler-colonial modes of land and water use (Robison et al. 2018). This dispossession is further exacerbated by the poor water quality to meet basic livelihood needs of Indigenous Peoples and the broader water security crisis affecting Indigenous cultural and spiritual ties to water.

Furthermore, Indigenous existence is political, and community and individual identity formation is often predicated on survivance – the act of survival through resiliency. Recently, an Indigenous social campaign launched entitled “Reclaim Your Power” with the slogan “Strong Resilient Indigenous” and it has been embraced by Indigenous Peoples around the world. The campaign was founded on Akwesasne Mohawk Territory and has over 100,000 followers on social media. The slogan is a political commentary on Indigenous history and contemporary existence. It gives agency to Indigenous Peoples and provides a mechanism for global mobilization and collective resilience in shared Indigenous struggles for justice. The campaign carries a message of decolonization, reconciliation and resiliency by Indigenous Peoples for Indigenous Peoples that resonates across political scales. Ultimately, contemporary resiliency is possible because of ongoing Indigenous social movements, such as Reclaim Your Power, resisting dispossession, forced removal, colonialism, and treaty conflicts (Gedicks 2004, 450). These uniquely Indigenous realities shape the types of actions Indigenous Peoples are willing to undertake to protect the Great Lakes.

Figure 6. Great Lakes Indigenous residents’ opinions on actions they are willing to take to protect the water quality of the Great Lakes.



(Author's Figure based on IJC 2018 Binational Poll Data)

As Gedicks (2004) notes social movement theory does not adequately account for Indigenous activism as there have been very few studies of social movement theory within a North American Indigenous context let alone Indigenous water justice struggles in the Great Lakes region. Indigenous People often articulate a willingness to fight for their rights as a pillar of survivance strategy recognizing that colonialism has stolen and eradicated so many facets of Indigenous society that they cannot stand for any more losses. Moreover, history has shown that any Indigenous assertion of rights is perceived as a threat to white settler claims and is met with violence, or often extra-lethal force and therefore any form of Indigenous opposition quickly turns into a fight because the settler-colonial state's first response is not diplomacy rather a show of military force (Walker and Walter 2018; Perry and Robyn 2005). This is especially prevalent in instances where Indigenous waters are threatened. Indigenous movements protesting water contamination have emerged through occupation camps such as the Standing Rock Camp,

Unis'tot'en Camp, L'Eau Est La Vie Camp, and the Anishinaabek Camp to Shutdown Line 5 in the Great Lakes region. The exercise of Indigenous treaty and fishing rights in the Great Lakes have not only been met with disapproval by non-indigenous peoples in the region but with extreme violence as was the case in the 1980s when Ojibwe spearfishers were attacked with rocks and pipe bombs by anti-Indigenous mobs (Gedicks 2004, p. 457). However, the first step for many Indigenous Nations in water diplomacy is not protest. As the survey results indicate Indigenous People are also inclined to use others means of political action such as their franchise rights to spur policy change. Additionally, Indigenous Nations often use diplomatic channels such as declarations, petitions, lobbying, and consultations prior to organizing protests (Garcia 2016). However, when those political instruments prove futile for policy transformation Indigenous nations up the ante occupying the thing the colonial-settler state values most – land.

Protests by Indigenous Peoples are often viewed as an illegitimate means of critiquing the colonial-settler state by non-indigenous peoples even though the right of peaceful assembly is a cornerstone of democracies around the world and protected in the U.S. Constitution and Canadian Charter of Rights and Freedoms (Proulx 2014, p. 88). The modern enactment of Indigenous protests is an evolution of the Red Power Movement that emerged in the 1970s across Turtle Island (Champagne 2008). However, the legacy of Indigenous Peoples protesting and fighting against developments initiated by the colonial state without their consent is a tale as old as colonialism itself. It is as if Indigenous Peoples have to use political superpowers to navigate internal and external political systems to shape policy agendas affecting their most inherent cultural, socioeconomic, and political rights that depend on water. Moreover, it is Indigenous women who wield these political superpowers in efforts to reconstitute and fulfill their responsibilities to protect the water as water carriers and life-givers. The poll may indicate

that water colonialism and the lack of Indigenous Nation involvement in transboundary Great Lakes decision-making has led to an increased willingness among Indigenous Peoples to fight and protest developments that would threaten the water quality of the Great Lakes. It also highlights the fractured nation-to-nation relationships between the U.S., Canada, and Indigenous Nations that are compounded by the lack of equitable Indigenous representation to the International Joint Commission.

International Joint Commission Role in Great Lakes Protection

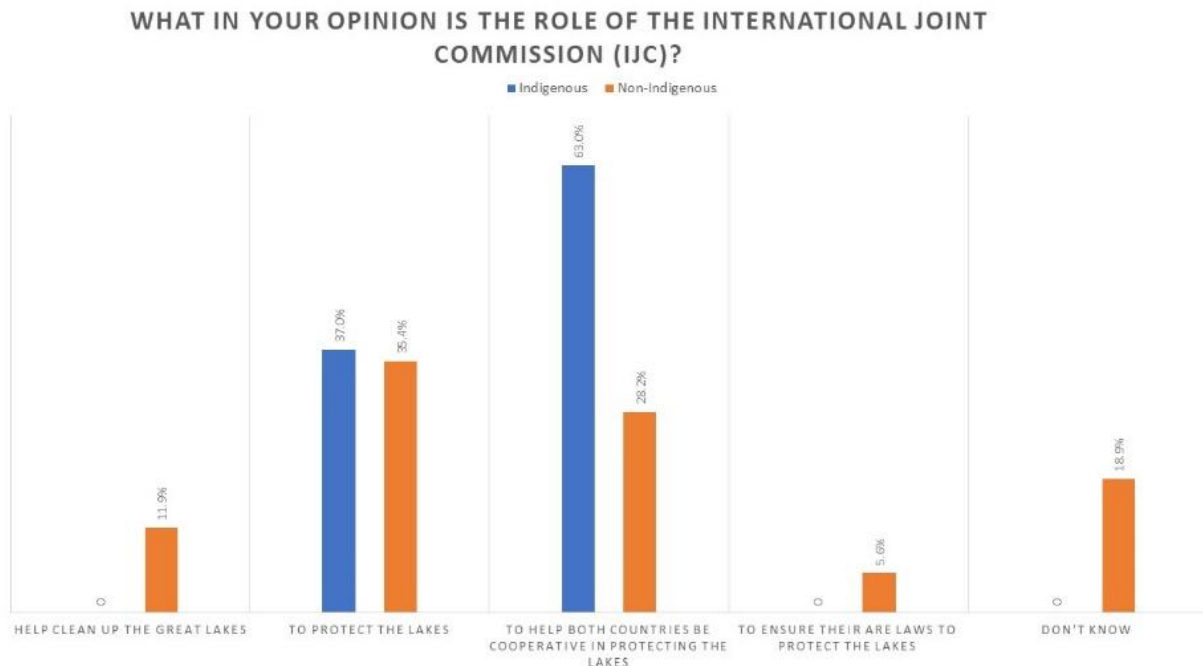
At the beginning of the 20th Century, the U.S. and Canada recognized the need for an agreement for access and use of transboundary waters, notably the need for a dispute resolution mechanism, which led them to sign the 1909 Boundary Waters Treaty (BWT) and establish the International Joint Commission (IJC) to prevent and resolve disputes between the U.S. and Canada pertaining to shared waters under the treaty (IJC 2019). Indigenous Nations were excluded from the BWT and the subsequent 1972 Great Lakes Water Quality Agreement (GLWQA) detailing how Canada and the United States would cooperate for the protection of the Great Lakes (Hand 2007; Botts et al. 2001). It was not until the 2012 Great Lakes Water Quality Agreement that representative roles on the Great Lakes Water Quality Board and Science Advisory Board were allocated for Indigenous representatives. However, these advisory board roles do not amount to a nation-to-nation relationship for transboundary water governance with Canada and the U.S. as required by treaties with Great Lakes Indigenous Nations and under international law. Currently, the International Joint Commission does not have a mechanism for representation of Indigenous Nations.

Notably in 2019 Canada appointed Henry Lickers, a Haudenosaunee citizen of the Seneca Nation, Turtle Clan, to one of the three Canadian commissioner seats in 2019 (IJC 2019).

However, there still are no distinct Indigenous IJC commissioner roles, because the BWT does not contain such language. It is unclear why the lack of adequate representation of Indigenous Nations on international forums for Great Lakes governance has yet to be remedied given there are modern precedents for Indigenous political representation on international forums with the U.S. and Canada, such as the Arctic Council (Ansson 1997). Unfortunately, the BWT and the GLWQA have failed to afford Indigenous Peoples the right of representation on the International Joint Commission and such a failure leaves a void in the effort to foster collaborative governance and fulfill the nation-to-nation relationship. Ideally, Indigenous Nations should be afforded a direct role in the administration of the BWT and GLWQA and representation on the commission. However, in the meantime, since Indigenous Nations lack a formal role on the commission, it is critical that Canada and the U.S. cooperate to not further jeopardize the protection of the lakes.

The Second Binational Poll asked participants the following question: “What in your opinion is the role of the International Joint Commission (IJC)?” More than majority of Indigenous poll participants responded, “to help both countries cooperate in protecting the lakes” (63%) compared to 28.2% of non-Indigenous participants who identified cooperation as a key role of the commission (See Figure 7). Indigenous respondents also overwhelmingly proffered the opinion that the IJC should focus its priorities on ensuring clean water and species protection.

Figure 7. Great Lakes residents’ opinions on the role of the International Joint Commission.



(Author's Figure based on IJC 2018 Binational Poll Data)

The poll results highlight an awareness among Indigenous participants of the necessity of the International Joint Commission for maintaining a cooperative relationship between the U.S. and Canada for protection of the lakes. It can be inferred that this is of paramount importance for Indigenous poll participants, because non-cooperation of the U.S. and Canada exacerbates water quality problems and species harm. Indigenous Peoples in the basin are keenly aware of the linkages between isolationist policies and Great Lakes degradation due to invasive species, algal blooms, and water diversions (Annin 2018; McGregor and James 2017). Furthermore, as Reo *et al.* (2017) identify, cooperation is a core principle of Indigenous worldviews for stewardship of the environment in the Great Lakes under the Dish with One Spoon wampum agreement. The Dish with One Spoon wampum belt constituted “a treaty between the Haudenosaunee and Anishnaabek to cooperate and share resources” (Reo *et al.* 2017, p. 59). This agreement continues to inform contemporary political philosophies of Indigenous Peoples in the basin who

highly value cooperation for Great Lakes protection. Non-indigenous poll participants may be less likely to identify US-Canada cooperation as a priority given the transaction costs associated with such cooperative efforts and the potential for state and provincial authority to be diminished (Baird *et al.* 2018). As Norman and Bakker (2015) note, sovereignty, whether national, state, or provincial, often supersedes the ecosystem-based cooperative needs of the basin for non-indigenous Great Lakes residents. However, this stands in stark contrast to water epistemologies of Great Lakes Indigenous Peoples, who often prioritize the holistic health of the lakes and other non-human relations before all else.

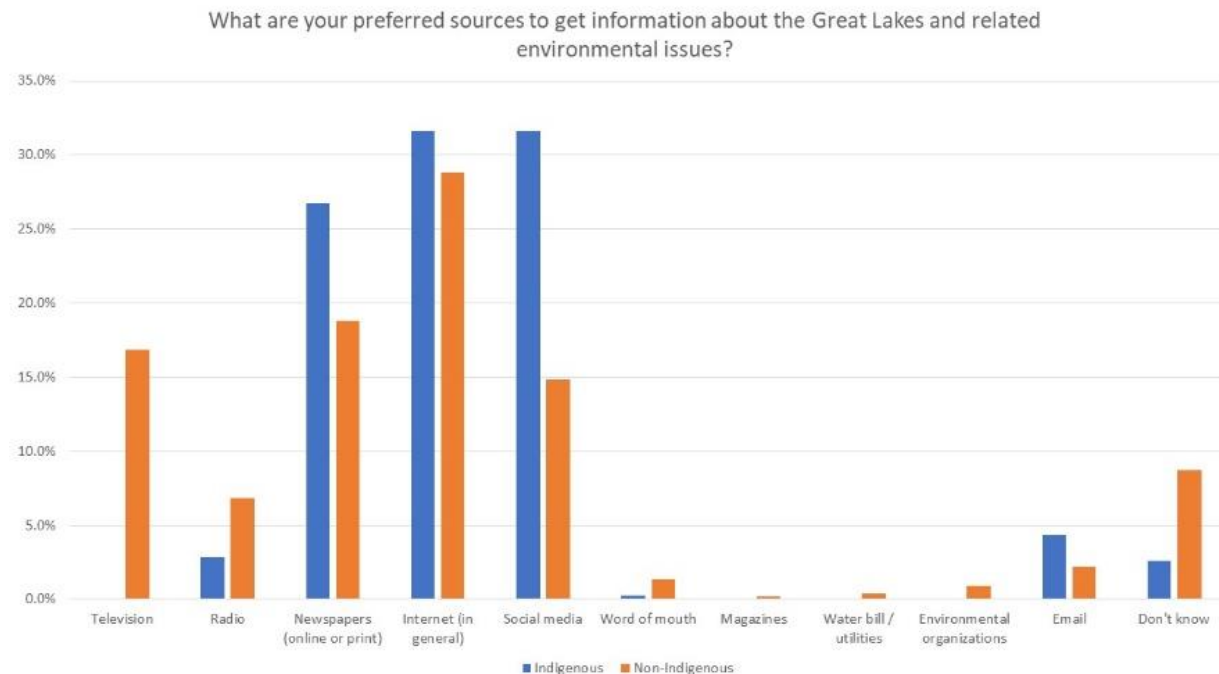
Communication is Digital

Public opinion on issues such as climate change, environmental policy and Great Lakes protection is generally understood to be mediated by mass media (Savigny 2002). However, there is a gap in the literature on how Indigenous public opinion is shaped by the media, especially on issues pertaining to the Great Lakes. Indigenous Peoples as consumers have more access to media options than ever before. However, media that is Indigenous owned and operated is less easy to come by. In Canada, there is the *Aboriginal Peoples Television Network* (APTN) and Indigenous divisions of major news outlets such as *CBC Indigenous*, but corollaries in the U.S. are limited. A prominent U.S. Indigenous media source has been *Indian Country Today*, but its stability has wavered over the years without consistent funding. Unlike non-indigenous Great Lakes residents, it is difficult for Indigenous residents to find a like-minded media source for news on the Great Lakes and related environmental concerns (Stroud 2011). Furthermore, the lack of mainstream news outlets covering Indigenous points of views on the Great Lakes and related environmental issues has likely skewed non-Indigenous audiences' understandings of Indigenous water injustices in the basin (Feldman et al. 2012). This increased fragmentation of

news media has likely increased the gap whereby Indigenous perspectives are not being covered on cable television news as these major networks search for hot topics that advance ratings within the mainstream public. Indigenous oppression let alone Indigenous innovation and resilience in the face of water injustices rarely make the mainstream news (Lam et al. 2017). Therefore, the Great Lakes Water Quality Board polling of residents helps to expand the understanding of Indigenous media consumption in the basin.

The Second Binational Poll asked participants the following question: “What are your preferred sources to get information about the Great Lakes and related environmental issues?” The top media sources identified by Indigenous poll participants included: (1) the internet (31.6%); (2) social media (31.6%); and (3) newspapers (26.7%) (See Figure 9). Notably, no Indigenous respondents identified television as a media source compared to 16.9% of non-Indigenous poll participants. Studies have examined the role of cable television in shaping public opinion finding that television media is a key influencer of political opinions on environmental issues (Newman et al. 2018; Feldman et al. 2012; Stroud 2011). However, if Indigenous Peoples are not consuming news through television then how are Indigenous political opinions being influenced?

Figure 8. Great Lakes residents’ opinions on preferred sources for information on the Great Lakes and related environmental issues.



(Author's Figure based on IJC 2018 Binational Poll Data)

The poll results present a path forward for enhancing engagement opportunities with Indigenous Peoples in the basin underscoring the need to ensure outreach and communication is digital through platforms such as online newspapers, the internet and social media. There is a movement of Indigenous citizen journalism surging through Turtle Island as Indigenous Peoples feel underrepresented in mainstream media and look to form accurate representations of news affecting their communities (Walker and Walter 2018; Uskali and Gynnild 2018; Brooks *et al.* 2019). Despite Indigenous poll participants' consumption responses, it is important to note that there are internet access disparities for Indigenous Peoples on reserve/reservation who have limited telecommunications infrastructure compared to off-reserve/reservation Great Lakes residents (Toth 2018 et al.; Moran and Bui 2018). Despite these challenges social media has the potential to amplify Indigenous voices on Great Lakes protection (Howlett and Mukherjee 2017). The infusion of Indigenous ideation on Great Lakes policy is a necessary discourse

transformation that must occur for there to be meaningful shifts in resetting the policy agenda to include Indigenous priorities for protection of the Great Lakes.

Conclusion

Overall the Second Binational Basin Poll has provided new insights into the public opinion discrepancies among Indigenous and non-indigenous residents and their attitudes towards protection of the Great Lakes. Previous polls and studies failed to account for Indigenous voices in the study of public opinion on environmental issues in the basin and in so doing mischaracterized and in fact erased Indigenous perspectives as the original basin stewards. A focus on Indigenous public opinions on Great Lakes protection through the poll carried out by the Great Lakes Water Quality Board provides areas for enhanced collaboration among varied levels of government, including Indigenous governments, but also for broader public engagement for Great Lakes protection. This study fills a gap in the literature by examining the relationship between Indigenous poll participants' responses and the broader state of Indigenous political participation in Great Lakes governance.

I found that Indigenous People have significant perspectives on perceived threats to the Great Lakes such as water insecurity, environmental regulation, political activism, the role of the International Joint Commission, cooperative governance, and modes of engagement. Evidence suggests that water colonialism is still a penetrating factor in Indigenous exclusion from Great Lakes protection efforts. Despite ongoing colonialism Indigenous Peoples are persistent advocates for cooperative governance that ensures the continued viability of Indigenous epistemologies of caring for water such as the Dish with One Spoon treaty. Moreover, Indigenous Peoples lack adequate representation on the International Joint Commission to substantially change the policy agenda to incorporate Indigenous perspectives. Notwithstanding

these critical concerns, this study suggests there are ample areas for Indigenous and non-indigenous synergies for collaborative agenda setting for Great Lakes protection that embrace Indigenous concerns on species protection, water quality, and intergenerational stewardship obligations. These findings should encourage the U.S. and Canada to expand their engagement of Indigenous Peoples in the basin to shape future political discourse so that advancements in reconciliation and decolonization are based in a nation-to-nation relationship that respects the sovereignty of Indigenous Nations in the basin to build a shared sustainable future.

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CHAPTER 4: NATIONS NOT STAKEHOLDERS: GREAT LAKES INDIGENOUS WATER GOVERNANCE

Introduction

In the last 50 years, Indigenous Nations have radically transformed the politics of the settler-colonial status quo by challenging the authority of the nation-state and asserting Indigenous nationalisms stating – “We’re Nations Not Stakeholders.” The international Indigenous rights framework, with notable instruments such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), has provided new legal and policy mechanisms for Indigenous Peoples around the world, but especially on Turtle Island (North America) to resist ongoing water colonialism as they seek water justice (Robison et al. 2018). The past 50 years have also been a time of radical governance transformations within the Great Lakes, commencing with the signing of the Great Lakes Water Quality Agreement in 1972. However, when the agreement was signed by the U.S. and Canada, Indigenous Nations were not parties to the negotiations nor signatories to the final agreement.

Fast forward to the present day and there have been formidable shifts in the federal policies towards Indigenous Nations and Peoples on the part of the U.S. and Canada with recognition of Indigenous rights and sovereignty (in some instances). However, there still is a persistent crisis in water governance that manifests through Indigenous exclusion from existing multilevel governance institutions and/or inadequate representation that does not provide parity with the Great Lakes co-governance roles of the U.S. and Canada. At the subnational level, there is increased involvement of states, provinces, municipalities, industry, non-governmental

organizations, academic institutions, and the public; however, Indigenous Nation representation is often wrongly relegated to the category of public or stakeholder consultation.

These trends demonstrate that there are implicit biases towards settler-colonial epistemologies and ontologies for water governance that do not align with Indigenous worldviews when it comes to water. This has led to the emergence of Indigenous water governance, a concept that this paper draws upon to illustrate the priorities for Indigenous Peoples and Nations when addressing and proposing solutions to a variety of complex water problems that are inherently transboundary as water does not recognize imagined political boundaries. Indigenous water governance recognizes the diminishing role of the colonial state in governing Indigenous Peoples' relationships with water as Indigenous Nations reclaim their water sovereignty. From the collective of understandings within the literature, Indigenous water governance (1) recognizes that water is a living entity; (2) affirms Indigenous and treaty rights; (3) respects Indigenous sovereignty and self-determination; (4) centers Indigenous worldviews; (5) values Indigenous science and knowledge systems; (6) incorporates holistic co-governance models; and (7) fulfills responsibilities to all life and future generations (Craft 2013; McGregor 2014; Wilson 2014; Black and McBean 2017; Simms et al. 2016; von der Porten et al. 2016; Norman 2014; Norman and Bakker 2017; Bradford et al. 2017; Wilson and Inkster 2018).

The Great Lakes St. Lawrence River Basin is the ideal paradigmatic place to explore these issues because there are more than 200 Indigenous Nations with a kinship and treaty relationship to the lakes, as well as the U.S., Canada, eight states, two provinces and numerous other actors at varying governance levels. The scholarship has not previously explored the application of Multilevel Governance and Indigenous Water Governance concepts within the Great Lakes. Additionally, the diversity of governance actors in the Great Lakes also underscores

the prevalence of the plurality of worldviews coming into contact (and often conflict) with one another as actors set objectives for water decision-making. This study discusses how Indigenous water worldviews differ from other actors involved in Great Lakes governance; presents an application of Indigenous water governance informed by Indigenous water worldviews to the Great Lake Water Quality Agreement Areas of Concern; and argues that an Indigenous water governance approach to water problems leads to more sustainable multilevel governance of the Great Lakes.

Understanding the Worldviews of the Great Lakes

The dominant worldview of Canada and the United States influencing water governance for centuries is that water is a resource for the benefit of humans and non-use of water amounts to waste (Shapiro and Summers 2015; Schmidt 2017). Worldviews explain the variance in water governance as actors' worldviews and inform how they make decisions about water. Scholars have noted how worldviews shape water law, policy, and institutional design (Switzer and Vedlitz 2017). The western worldview grounded in the *doctrine of discovery* encouraged (and in many ways still does) acts of water colonialism, whereby Indigenous Nations are excluded from water decision-making and prohibited from stewarding their relationships to water as it is seized for state-building, population expansion and advancement of settler societies under the auspices of a "divine right" and manifest destiny. In many ways, this worldview still dominates Great Lakes water governance discourses; however, scholars also recognize a policy paradigm shift that emphasizes mechanisms for co-governance and collaboration to solve Great Lakes water problems (Karkkainen 2006; McGregor 2008; Uhlig and Jordan 1996; Bakker and Cook 2011; von der Porten et al. 2016). Hall (1993) notes that these policy changes occur when there is a shift in power and the perceived authority of one paradigm to dominate another (p. 280). The

historic U.S.-Canada worldview of water colonialism is contested now more than ever before given increased political, economic, and legal authorities Indigenous Nations have in the Great Lakes as a result of court affirmed treaty rights, diversified economic development portfolios, Indigenous media proliferation, technology advancements, and performances of sovereignty.

Although the historic western worldview of maintaining the colonial *status quo* is being challenged, the U.S. and Canada have not yet recognized the worldviews of Indigenous water governance because of what scholars refer to as a “policy stalemate” where individuals are biased by their worldviews and unable to negotiate policy change (Baumgartner et al. 2006, p. 15; Jones and Baumgartner 2005). Tarlock (2006) argues that the Great Lakes has five main competing worldviews: (1) the lakes are a “perpetual gift” with intrinsic value; (2) the lakes are non-renewable resource that should be protected as a “world heritage ecosystem”; (3) the lakes are a “natural resource” for human use; (4) the lakes are a commodity to be exploited for human benefit; and (5) the lakes are a “constrained natural resource” that must be conserved for future generations (p. 28-35). The common thread across these worldviews is the centering of humans and exploitation of the water to meet human wants (not even necessarily needs). This is in direct conflict with the worldviews of Indigenous Nations in the basin that position their relationship to water and the Great Lakes through frameworks of relationality, reciprocity, respect, and responsibilities.

There is a teaching shared among many Great Lakes Indigenous Peoples that ‘water is the first medicine’ as water sustains human beings as they are carried in the mother’s womb and birthed into the physical world. The creation stories of how Indigenous Nations and Peoples came into being are fundamental to understanding their worldviews and connection to water (McGregor 2014). As Frank Ettawageshik (2008) says,

We are taught that water is the lifeblood of Mother Earth and that water is essential to life. I've had occasion to be with native elders and tribal leaders from all over the country, the North American continent, and throughout the world. We have been taught that we can live without oil, but we cannot live without water. We can live without gold, but we cannot live without water. Water is different from other things that we consider; water is not a commercial commodity, but rather it is required for our very existence; it flows in our veins; we all spend time in the water in our mother's womb; it flows in the veins of Mother Earth. We are taught that it is the women's role to protect the water. (p. 1477)

These teachings are central to conceptualizations of Indigenous water governance and understanding Indigenous worldviews in the Great Lakes (although not all are exactly the same). The worldviews of Indigenous Nations in the basin reflect a common understanding that humans are the newest creations on Mother Earth and therefore are like young children that must learn from and build respectful relationships with all creation on Mother Earth, including water (Reo et al. 2017). These worldviews are taught through ceremony, song, and prayer in connection with creation, land, and water. This is emblematic in the Mother Earth Water Walks and Nibi Walks that have occurred throughout the Great Lakes to rebuild ethical relationships with the water, to understand that water connects us all, and to reconstitute ancient practices of reciprocity for everything water gifts to the world.

Indigenous worldviews also differ from the U.S. and Canada in their articulations of time. Indigenous decision-making for water protection is informed by non-linear continuums of time whereby Indigenous policy makers are connected to seven generations past and seven generations future as they determine decisions for the present (Ettawageshik 2008). Similarly, McGregor (2013) eloquently writes,

Water transcends time and space. In some respects, the waters we interact with in the present are the same waters our ancestors experienced, and the same ones that may be experienced by future generations in turn, should we take care of the waters sufficiently to ensure their (and our) future viability. (p. 73)

Furthermore, McGregor (2014) argues that considerations of how water decisions impact “the spirit world, the ancestors and those yet to come [...] are an essential part of behaving ethically with respect to water” (p. 501). As such, Indigenous worldviews are based on concepts of reciprocity, relationality, respect, responsibility, and love (Craft 2013; McGregor 2013). The profound nature of making water-decisions with the aforementioned principles is not lost on non-Indigenous water scholars, who find the Indigenous worldview presents a “balance to the compelling demands of the industrial and commercial sectors” and can improve Great Lakes decision-making (Hand 2007, p. 838).

This context provides us with the opportunity to ask two questions to advance our understanding of Indigenous water governance and multilevel governance in the Great Lakes: What barriers exist in the federalist systems of the United States and Canada for Indigenous engagement in Great Lakes protection? Do these barriers to engagement in water governance lead to water injustices for Indigenous Nations and their citizens in the basin? Water issues in the Great Lakes are complex and involve multiple actors at different levels of government, working for enhanced collaboration necessitates Indigenous Nation participation at the highest-level of water decision-making (Zeemering 2018; Friedman et al. 2015). The following section provides the theoretical background for understanding multilevel governance in the Great Lakes within the context of Indigenous water governance.

Characterizing Theories of Multilevel Governance in the Great Lakes

Theoretical Background

This paper focuses on Indigenous water governance in the context of multilevel governance (MLG) in the Great Lakes Basin. Many Indigenous Nations in the Great Lakes face what Ostrom (2011) calls collective action “dilemmas,” which manifest because of the diversity of actors and institutions in the basin that share authority for water decision-making. According to Alcantara and Nelles (2014), “MLG is a process of political decision making in which governments engage with a broad range of actors embedded in different territorial scales to pursue collaborative solutions to complex problems” (p. 185). Scholars recognize that environmental problems are becoming more complex across scales and involve an increasing number of governmental, non-governmental, and other actors (Lubell 2013; Jetoo et al. 2015). As Latta (2018) describes, collaboration and co-management are essential elements of MLG, but alone they are not enough to adequately represent Indigenous rights of self-determination and sovereignty for Indigenous water governance. Thus, scholars are using MLG as a theoretical frame to explain the complex arrangements between Indigenous Nations and colonial states because alternative theoretical explanations (colonialism, federalism, decolonization, self-determination) on their own are insufficient (Alcantara and Nelles 2014, p. 184). MLG frames our understanding of how Indigenous Nations engage across political scales in the Great Lakes for Indigenous water governance.

A survey of MLG in the policy literature finds that the concept has been applied limitedly to understanding Indigenous politics but has rarely been applied to water governance in a transboundary context (Latta 2018). Moreover, MLG has not previously been applied to explore the concept of Indigenous water governance in the Great Lakes. Scholars have examined MLG from the lens of climate change policy (Rabe 2007), environmental governance (Eckerberg and

Joas 2004), and more generally the governance relationships among Indigenous Peoples and settler states (Papillon 2011; Rodon 2014; Alcantara and Nelles 2014; Alcantara and Spicer 2016; Ladner 2016; Latta 2018). The authority of Indigenous Nations to participate in shared water decision-making has been constrained by the power dynamics of colonial and federalist systems within the U.S. and Canada that have historically failed to include Indigenous actors in the dominant regime of Great Lakes governance (Andrews et al. 2018; Alcantara and Morden 2017; McGregor 2014). In recent years, new pathways for operationalizing government-to-government relationships between the U.S., Canada, and Indigenous Nations have emerged in the Great Lakes. The International Joint Commission and the Great Lakes Water Quality Agreement are examples of forums expanding for the inclusion of Indigenous voices in shaping water governance outcomes. These new opportunities, as Latta (2018) notes, for “intergovernmental relationships” and sharing water decision making authority are indicators of multilevel governance (MLG) (p. 3). Thus, MLG is an effective theoretical tool for understanding how and why these new relationships have formed in the Great Lakes for water protection.

Scholars have examined the theoretical fit of MLG in the Great Lakes finding that the variety of actors, including the U.S., Canada, states, provinces, local municipalities as well as institutions such as the International Joint Commission, align with the concept of MLG (Alcantara et al. 2016). Moreover, missing from the Alcantara et al. (2016) study is an exploration of the roles of Indigenous Nations in Great Lakes MLG. However, as Ladner (2016) notes, the multilevel governance literature largely “ignores Indigenous [N]ations and their governance structures” (p. 67). The Great Lakes MLG literature is no exception where the analysis includes only a perfunctory mention of Tribal Nations, First Nations, or Métis (Alcantara et al. 2016) and lacks adequate exploration of the ways in which Indigenous Nations

are engaged in water decision-making to build solutions to the water challenges of concern to their citizenry and facing the Great Lakes region at large. Ladner (2016) believes it is important for scholars to “decolonize” MLG and dismantle the convenience of water governance discourse that embraces the colonial *status quo* and erasure of Indigenous Nations. Ladner (2016) further alludes to this idea saying, “As part of its colonial strategy, the Canadian government (and its British forerunner) engaged in policies and procedures best described as political genocide. It sought to dismantle Indigenous structures of governance (including pre-colonial systems of multilevel governance) and Indigenous sovereignty, substituting its own system of puppet government” (p. 69). The precolonial structures that were diminished included Indigenous mechanisms for water governance.

Furthermore, Indigenous Nations struggle to engage with the U.S. and Canada because of the multitude of decision-making spaces where each sovereign has some level of authority but what is needed are new spaces for intergovernmental coordination grounded in equity and justice. Papillon (2011) describes this saying, “indigenous governance in Canada and the United States is characterized today by a multiplication of decision-making spaces and processes that often exist in tension with the existing federal structure without altering it” (p. 291). Rather I argue that within these new spaces Indigenous Peoples should have full recognition of our autonomy and authority with decision-making power. We would not serve in observer roles where our knowledge is mined to check a box of tokenistic inclusivity. There needs to be a pathway for restructuring the decision-making process rather than a meaningless proliferation of new forums for discussion without respect for Indigenous sovereignty and decision-making authority.

However, Indigenous Nations must also exercise caution in their use of MLG as it has limitations. Papillon (2015) points this out, “Multilevel governance (MLG) arrangements can be both a space for substantial [Indigenous] participation in decision-making processes and an iron cage, trapping [Indigenous Nations] in a logic of constant negotiation, under rules that are not of their choosing” (p. 6). Indigenous Nations must design the rules by which they engage across multiple scales and with varying levels of government. Indigenous Nations are not only seeking new ways to engage in multilevel governance with the U.S. and Canada in the Great Lakes, but they are also preserving existing and reconstituting pre-colonial systems of multilevel governance in the basin for water protection. Ladner (2016) describes this as a form of political mobilization for decolonization at national, intertribal, and supranational levels (p. 70). Scholars applying an MLG framework must be conscious moving forward that the exclusion of Indigenous governance systems and structures is an act of intellectual colonialism that furthers the “political genocide” of Indigenous Nations. The first step in abandoning intellectual colonialism in water governance discourse is to acknowledge that Indigenous Nations are Nations not stakeholders, which is the focus of the next section.

Indigenous Nations are ‘Nations not Stakeholders’

The application of multilevel governance to Great Lakes water governance tends to focus on actions by Canada, the U.S., states, and provinces (Newig and Fritsch 2009), excluding Indigenous actors and scholarship. Scholars generally fail to recognize the nationhood of First Nations, Tribes and Métis in the Great Lakes for water governance labeling them instead stakeholders, diminishing their sovereignty and inherent rights of responsibility for the water (Rizvi et al. 2013; Wilson 2014). As Bakker and Cook (2011) find if Indigenous Nations are not labeled as “stakeholders,” they are often categorized as “other” or given corollary status to

NGOs. As Indigenous scholars have noted, the mischaracterization of Indigenous Nations in the literature that erroneously erases their sovereignty is unethical scholarship and reflects a poor mastery of the theoretical underpinnings of Indigenous politics and governance (Reo et al. 2017). Scholars in part attribute this lack of recognition to misunderstandings of Indigenous rights and sovereignty (Reo et al. 2017). Non-Indigenous actors are not maliciously predisposed to the non-recognition of Indigenous sovereignty and violation of Indigenous rights; rather, they have been conditioned within a different worldview and governance system that has failed to educate policymakers on the plurality of legal, policy, and institutional features that have co-existed on Turtle Island prior to the formation of the U.S. and Canada.

Indigenous Nations were previously not in a position to assert their responsibilities for the water given the impacts of colonization, which only shifted in the 1970s with the onset of Indigenous self-determination policies in the U.S. and Canada. Moreover, Indigenous Nations were also prevented from equitable participation in decision-making due to the economic costs of participation in regional, national, and supranational political spaces (Hand 2007). The recognition of Indigenous sovereignty and nationhood also requires the U.S. and Canada to fulfill its treaty obligations and fiduciary responsibilities to ensure Indigenous Nations are not only consulted, but a part of the decision-making processes (Ladner 2016). Indigenous Nations want to be involved in governance from the outset as equal partners not consulted after policies have been developed enabling non-Indigenous representatives to check a box for Indigenous engagement (King et al. 2005; McGregor 2014).

Indigenous Nations are further irritated if they are left out of the development of policy that affects their territories and citizens while environmental organizations and/or industry have formal representation on decision-making bodies (Hand 2007, p. 829). Every nation should be

able to participate at the highest level of decision-making. Ultimately, respecting Indigenous sovereignty for water governance is linked to honoring the original treaties that detailed how nations were to co-exist. McGregor (2014) further illustrates this point saying, “Recognition that [Indigenous] Nations peoples have roles and responsibilities that require their involvement on a nation-to-nation basis must form the basis of a sustainable water governance system” (p. 501). This paper aims to expand on the MLG literature through a comparative analysis of U.S., Canada, and Indigenous water governance. The following section addresses why the Great Lakes is an ideal transboundary multilevel governance context to explore these issues. It further explains how the use of Indigenous Methodologies was critical to uncovering differences and similarities in worldviews, understanding perceptions of engagement in co-governance, and identifying barriers and strategies for navigating the complex system of Great Lakes governance.

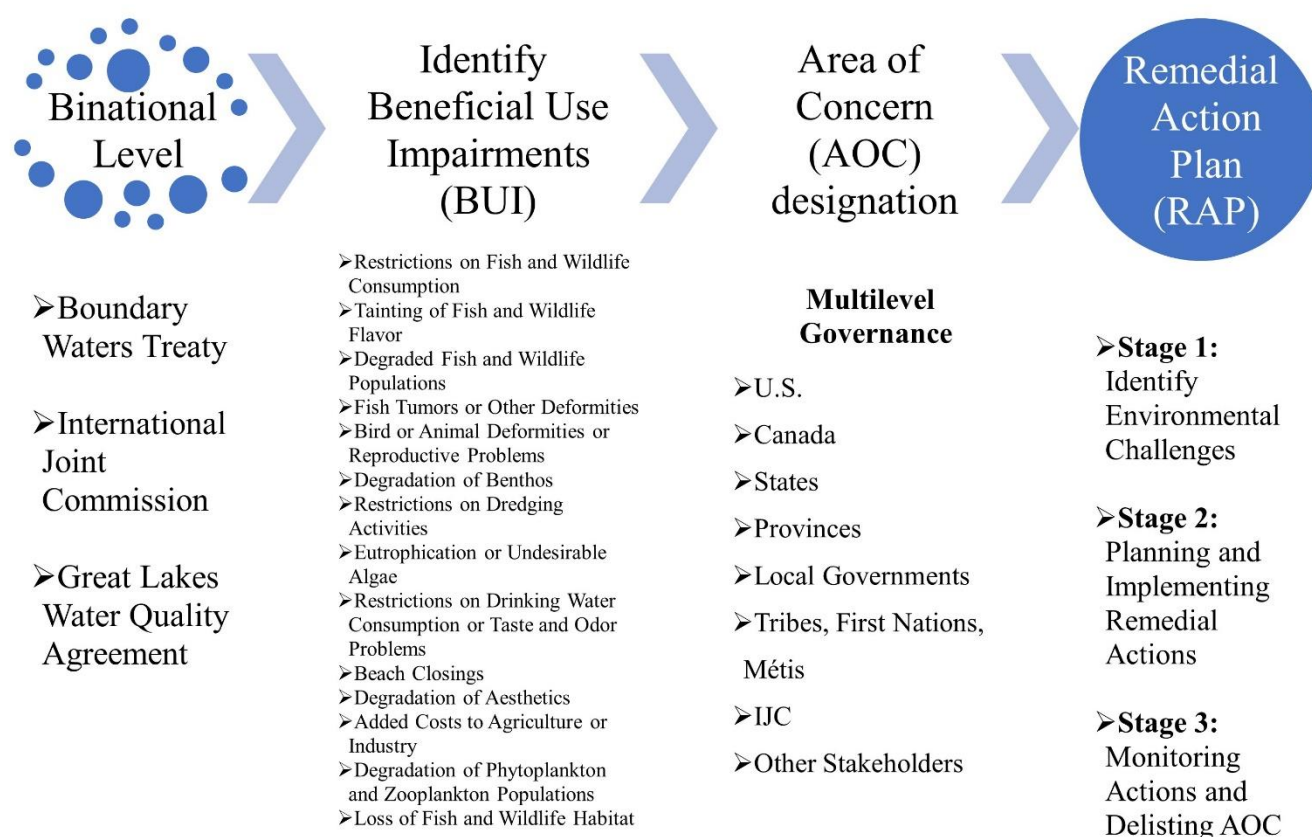
Great Lakes Indigenous Water Governance Case Selection and Methods

Scholars have characterized the Great Lake Water Quality Agreement (GLWQA) as a key structure of multilevel governance in the Great Lakes (Jetoo et al. 2015; Johns and Thorn 2015; Norman and Bakker 2013). The provisions for Areas of Concern (AOCs) are captured in Annex 1 of the Agreement (GLWQA 2012). AOCs were not included in the original 1972 GLWQA but were added in 1987 after public outcry on the degradation of the Great Lakes (CBC 1987). As Karkkainen (2018) notes these areas are often referred to as “toxic hotspots”. AOCs are designated areas with severe environmental degradation impairing human beneficial uses of the lake area (Zeemering 2018). The process for determination of the criteria for beneficial use impairments (BUIs) did not include Indigenous Nations. Canada and the United States, under authority of the Great Lakes Water Quality Agreement, identified 43 AOCs without the free,

prior, and informed consent of Indigenous Nations (IJC 2018; Holifield and Williams 2019; Hall 2008). Previous studies have not examined Indigenous participation in AOCs (e.g., Zeemering 2018; Grover and Krantzberg 2012; Hartig and Zarull 1992; Sproule-Jones 2002).

Each AOC is charged with developing a Remedial Action Plan (RAP) to articulate steps to improve the area based on the BUI criteria (Holifield and Williams 2019).

Figure 1. Multilevel Governance Across Area of Concern Designation and Delisting



(Author's adaptation from 2012 Great Lakes Water Quality Agreement).

In 2012, the Great Lakes Water Quality Agreement directed that Canada and the U.S. should work “in cooperation and consultation with State and Provincial Governments, Tribal Governments, First Nations, Métis, Municipal Governments, watershed management agencies,

other local public agencies, and the Public, [to] develop and implement a systematic and comprehensive ecosystem approach to restoring beneficial use” (GLWQA 2012, p. 22).

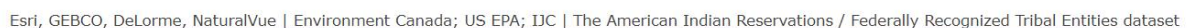
However, despite this policy prescription there are only eight of the 43 AOCs that list Tribal Nations, First Nations, or Métis as partners in the remediation process. They include: St. Mary’s River; Peninsula Harbour; Nipigon Bay; St. Louis River; St. Lawrence River at Massena; St. Clair River; Spanish Harbour; and Bay of Quinte.¹⁵ Furthermore, it is unclear how each AOC defines “partnership” and whether Indigenous Nations perceive their involvement as equal partners at the highest-level of decision-making. Studying the engagement of Indigenous Nations in AOCs provides insight into one part of Great Lakes multilevel governance and the role of Indigenous water governance in shaping Indigenous responses to exclusionary decision-making.

This study develops a dataset using publicly available data from U.S., Canadian, and Indigenous governments on Indigenous territories in the basin combined with geographic information system (GIS) approaches to locate within 50km and 10km the proximity of Indigenous Nations to AOCs (Author 2019). More than 50% of Indigenous Nations in the Great Lakes live within 50km of a designated Area of Concern (see Appendix A).¹⁶ This is a grave water injustice plaguing Great Lakes Indigenous Nations. The map of Indigenous Nation proximity to AOCs (Figure 2) was created using ArcGIS to convey the immensity of Indigenous water injustices as result of multilevel governance failures, which aims to be a “powerful means to mobilize Indigenous sovereignty” within Great Lakes governance (Olson et al. 2015, p. 349). Indigenous Nations have had varying levels of engagement with the Area of Concern decision-making process under the Great Lakes Water Quality Agreement. In the Peninsula Harbour Area

¹⁵ Author’s own database.

¹⁶ Author’s own database.

Indigenous Areas of Concern in the Great Lakes Basin



(Author's Figure based on author's database; Environment Canada; US EPA; IJC; US BIA)

The more than 50% of Indigenous Nations in the basin with proximity to an AOC each fit the case selection criteria explored earlier for exploring MLG and the GLWQA through an Indigenous water governance lens. However, for case selection this research endeavored to undertake an Indigenist methodologies framing that extended greater power and autonomy over the research to Indigenous Nations as research partners rather than research subjects.

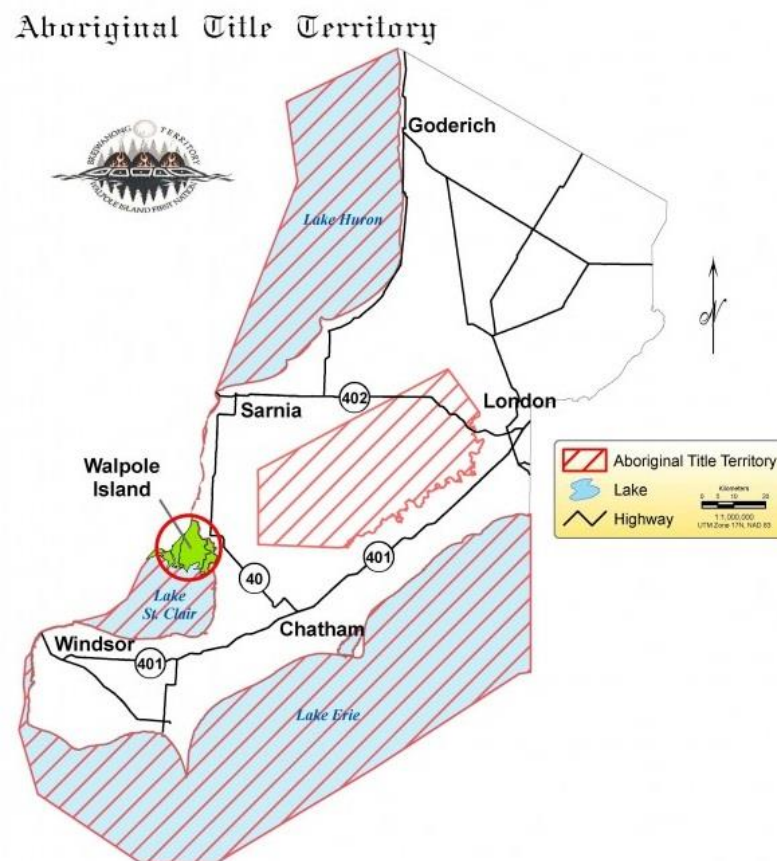
Case Study: Walpole Island First Nation and Great Lakes Areas of Concern

To understand how Indigenous Nation worldviews are critical to effective multilevel governance in the Great Lakes, I analyze Indigenous nibi workshop participants' perspectives from Walpole Island First Nation. We chose to highlight workshop participants' insights specific to the Great Lakes Water Quality Agreement Areas of Concern (AOC). The Great Lakes Water Quality Agreement provided a useful framework to examine multilevel governance because it includes the U.S. and Canada as parties to the Agreement but not Indigenous Nations. However, the exclusion of Indigenous Nations has far reaching implications for Indigenous water governance in the Great Lakes as explored in the following section. The current attempts to remediate AOCs present an opportunity for Canada and the U.S. to equitably engage Indigenous Nations in the governance of the Great Lakes.

In the 1980s, when the U.S. and Canada under the Great Lakes Water Quality Agreement designated the St. Clair River, Detroit River, Rouge River, Clinton River, and Wheatley Harbor as Areas of Concern, Walpole Island First Nation (WIFN) was not consulted. However, Walpole Island First Nation is a sovereign Indigenous Nation in a nation-to-nation relationship with Canada. Walpole Island First Nation currently occupies the delta islands of Lake St. Clair, but

their traditional territory known in Anishinaabemowin as Bkejwanong (where the waters divide) describes the entirety of the boundary waters area of Lake St. Clair, the St. Clair River, and parts of what are currently known as Ontario and Michigan claimed by the U.S. and Canada.

Figure 3. Walpole Island First Nation Aboriginal Title Territory



Map created by Walpole Island Heritage Centre. (Reprinted 2019).

Bkejwanong Territory is unceded aboriginal land that has never been taken by the U.S. or Canada and it is the historic meeting place of the Three Fires Confederacy of the Ojibwe, Odawa, and Potawatomi nations (Walpole Island First Nation 2018). WIFN draws their drinking water from the St. Clair River, but have to contend with major water security threats, including upstream toxic spills from chemical plants, agricultural runoff, other livestock related nonpoint

source pollution, and dredging of contaminated sediment for ship passage on a major connector of Lake Erie and Lake Huron (Mascarenhas 2007). In recent years WIFN has actively pursued litigation to defend their sovereignty and Indigenous rights. They have challenged provincial regulation of industrial sewage (*Walpole Island First Nation v. Ontario* 1997) and ownership of submerged lands (*Walpole Island First Nation, Bkejwanong Territory v. Attorney General of Canada* 2000). Given the history of industrialization, urbanization, and agricultural land use and the legacy of pollution, the St. Clair River was designated an AOC in 1985 (Environment Canada 2018). Since 1985, WIFN has had varying levels of engagement with the AOC and RAP processes for those designated AOCs within a 50km radius of Bkejwanong Territory and more recently have been invited participants for the St. Clair River AOC.

Centering Indigenous Water Research Methodologies

Indigenous methodologies shaped the design of this research. Smith (1999) highlights how “research” has become a “dirty word” for many Indigenous Peoples as a result of past negative experiences (p.1). The research therefore employed a decolonizing framework to be responsive to the historical traumas of western research and embraced the following methodological principles: “negotiating research relationships, utilizing Indigenized methods, recognizing reciprocal capacity building; and crediting Indigenous knowledge” (McGregor 2018, p. 136). To build authentic partnerships and respond to Smith’s (1999) call for Indigenous Peoples to be the researchers not only the researched I developed a protocol for a call for partnerships among Indigenous Nations and organizations in the basin interested in co-developing a project examining Indigenous Water Governance (see Appendix B and C). The call for partners was distributed via email to all of the heads of state for each nation or their main administrative or communications office as identified in the Great Lakes Indigenous Actors

Dataset (GLIAD). More than 15 applications of interest were submitted after one-on-one phone consultations there were seven partners who identified an interest in moving forward in designing a project. Partnership selection was namely that Indigenous Nations were geographically located in the Great Lakes St. Lawrence River drainage basin; that they have an identified Great Lakes governance concern; and a desire to develop outputs from the project that result in community benefit. One of the First Nation partners included Walpole Island First Nation. I worked in partnership with the First Nations to develop a research framework that would match community expectations for discussions on water, which included meetings with community contracts via phone and in-person to explore data collection methods. This iterative process led to the design of the nibi workshop and additional question framing for group discussions during the workshop.

The Indigenous Nation in the closest proximity to the most AOCs in the basin is Walpole Island First Nation. A case study exploring Walpole Island First Nation's engagement in the AOCs impacting their territory is discussed in the following section (Gerring 2004; Eckstein 2000). The case selection was based on a typical method design approach (Seawright and Gerring 2008) that is representative of Indigenous Nations' engagement in Great Lakes multilevel governance of Areas of Concern. In line with Patton's sampling approaches the case selection of Walpole Island First Nation further represents a critical case sample because it "dramatically" highlights the unique transboundary nature of Indigenous water governance in the Great Lakes as Indigenous Nations navigate a very complex system of multilevel governance (Patton 1990). In the case of Walpole Island First Nation this is extremely apparent given their territory is border by both the U.S. and Canada, states, provinces, and other levels of government. The case study is based on research conducted in the Great Lakes basin from June

2017 to December 2018. The research received ethics approval from Walpole Island Heritage Centre Advisory Committee and McMaster University (MREB protocol #2280). An early visit to Walpole Island First Nation fall community day allowed us to introduce the research project to the community on the banks of the Snye and St. Clair Rivers. During this visit we had informal discussions with community members of all ages, provided educational coloring sheets on Great Lakes habitat for children, and asked adults about their thoughts on the health of the Great Lakes. Our presence in the community nurtured our partnership and helped to carve out space for authentic community-based research. Further exchanges to co-develop a framework for data collection were essential for ensuring the research outcomes met the research goals of WIFN.

In partnership with Walpole Island First Nation, a structured and facilitated day long nibi (water in Anishinaabemowin) workshop comprised of Indigenous community members was held in December 2018. Workshop participants were recruited using purposeful and snowball sampling strategies that emphasized their knowledge and involvement as community members concerned with Great Lakes protection. The nibi workshop was informed by Indigenous methodologies for water research enacted by Craft (2013) and McGregor (2012,2014) that prioritize Indigenist perspectives and knowledge systems for story gathering. Storywork, an Indigenous methodology developed by Archibald (2008), privileges Indigenous Peoples' lived experiences and the oral tradition that allows for research to build respectful and reciprocal relationships grounded in ancient storytelling. The workshop was utilized as a method of community-based participatory research that privileged storywork to allow for collective knowledge mobilizations that respect the spiritual, physical, emotional and mental connections to water of Indigenous Peoples (Bell 2018). Furthermore, the methodology aligned with the Anishinaabe protocols of the community promoting "kindness, honesty, sharing, and strength"

(Bell 2018, p. 181). In the context of Indigenous water research scholars have emphasized the need to center discussions of water within the communities locally to advance their “ontologies, lives, and visions of the community” (Restoule et al. 2018).

The overarching purpose of the event was to allow for Walpole Island First Nation members to come together to review the status of the First Nation’s Great Lakes protection efforts and to make recommendations for future water governance. The nibi workshop was open to all citizens and community members of the First Nation. As research partners we did not set participant exclusion criteria recognizing that members of the community all have relationships to water that are integral to understanding Great Lakes protection whether they hunt, fish, harvest; live on the territory and rely on surrounding drinking water infrastructure; or participate in water protection efforts at varying levels. As such, nibi workshop participants were recruited through purposeful and snowball sampling strategies that included announcements through Walpole Island First Nation’s newsletter, Facebook page, email listserv, and community bulletin boards. The workshop was held in the territory at the Walpole Island Heritage Centre.

Community research partners determined the optimum time and location for the workshop in accordance with Indigenous methodologies for community based participatory research (Manitowabi and Maar 2018). Together we co-developed the pre-event survey and set the event agenda. All participants received tobacco and wampum in recognition of the knowledge they would be gifting through their attendance at the workshop. In collaboration with WIFN an appropriate community gathering is being planned to disseminate findings. In recognition of reciprocity and respect (McGregor 2018), food was provided for attendees to connect over lunch and dinner. Water was also placed in a vessel in the center of the room in recognition of its living spirit and teachings that water listens and holds memories. The

workshop consisted of a series of themed breakout sessions based on the three priorities identified previously through a community survey including Climate Change, Areas of Concern and Interjurisdictional Coordination the latter two of which this case study focuses. Each session structure was adaptive to the needs of participants but generally involved group discussions (averaged 8-10 participants) after a few exploratory questions for each theme had been posed by the facilitator to the participants (See Table 1).

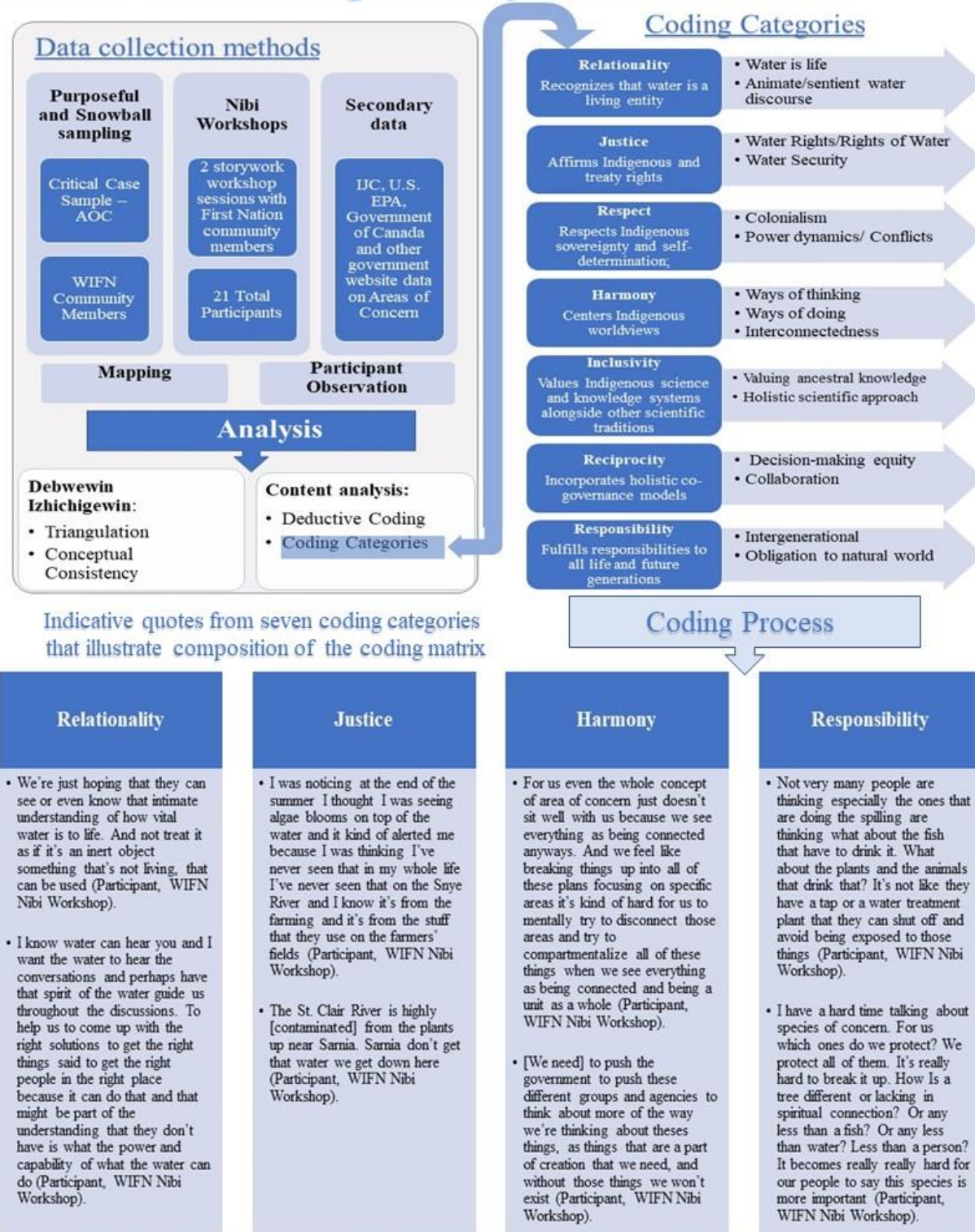
Table 1. Breakout Session Questions.

Topic	Question
<i>Areas of Concern</i>	Where are the highly contaminated water sites?
<i>Areas of Concern</i>	St. Clair River, Clinton River, Detroit River and Rouge River have all been identified as Areas of Concern (Wheatley Harbour delisted). Has this contamination impacted you or your community in any way?
<i>Areas of Concern</i>	Who do you see as water contaminators?
<i>Areas of Concern</i>	Who is responsible for restoring the water of these highly contaminated sites?
<i>Interjurisdictional Coordination</i>	Who is responsible for protecting the Great Lakes?
<i>Interjurisdictional Coordination</i>	What are some barriers and challenges you see to First Nation involvement in water governance in the Great Lakes?
<i>Interjurisdictional Coordination</i>	Have you seen any changes in how First Nations are being involved in water governance in the Great Lakes?
<i>Interjurisdictional Coordination</i>	How does your First Nation interact with other levels of governments (municipality, province, federal government, IJC) with respect to water management and planning?
<i>Interjurisdictional Coordination</i>	How does your First Nation interact with other First Nations with respect to water management and planning?

We used digital audio recorders (placed throughout the room, along with extended microphones) and notetaking to record conversations, dialogue and engagement during the workshops. Flipcharts were used for notetaking and were digitized for analysis. Other hardcopy materials such as maps or drawings made during the workshop were digitized for inclusion in the workshop record of notes. All materials produced during the workshop (for example – group discussion, flipcharts, maps, drawings, surveys, etc.) were recorded and content analyzed for inclusion in the findings of this case study. I listened to and created written transcripts from the audio-recordings. Keeping in line with storywork methodology, these texts were placed in relationship with one another to identify where participant stories overlapped. I tested the seven Indigenous water governance principles of relationality, justice, respect, harmony, inclusivity, reciprocity, and responsibility as Porras et al. (2019) describe through content analysis, deductive coding, and thematic coding categories based on the Indigenous water governance literature. Please see Figure 4 below for a description of the nibi workshop data analysis process.

Figure 4. Nibi Workshop Data Analysis Process

Nibi Workshop Analysis Process



Author adapted based on Porras et al. , (2019).

Data collected through the workshop were used to inform and confirm information obtained through personal observations. Indicative quotes by participants during the workshop were categorized in a coding matrix as illustrated in Figure 4. As Patton (1999) notes multiple data collection methods were used to avoid weakness in the study through a process of triangulation. Additionally, a conceptual consistency approach as outlined by Bockstaller and Girardin (2003) was used to confirm consensus on the coding categories. Workshop participants were given the opportunity to review and provide comments on the workshop findings and recommend corrections as necessary. The WIFN Environmental Officer and researcher partner was available to review and discuss the findings with participants as requested. Notably, the analysis did not focus on data validation but on Anishinaabe cultural protocols of truth seeking or Debwewin Izhichigewin (truth seeking methodology). Basil Johnston has described the meaning:

Let's take another word, the word for truth. When we say "w'daeb-awae" we mean he or she is telling the truth, is correct, is right. But the expression is not merely an affirmation of a speaker's veracity. It is as well a philosophical proposition that in saying a speaker casts his words and his voice as far as his perception and his vocabulary will enable him or her, it is a denial that there is such a thing as absolute truth; that the best and most the speaker can achieve and a listener expect is the highest degree of accuracy. Somehow that one expression, "w'daebawae," sets the limits to a single statement as well as setting limits to truth and the scope and exercise of speech. (1991, p. 57)

In this way the information shared by workshop participants should not be sought to be invalidated, but rather accepted as part of debwewin philosophy. Another Anishinaabe elder Nancy Jones (Ogimaawigwanebiik) has said,

I listen carefully; I listen carefully to the way they talk. I fully understand the Anishinaabe language or the Ojibwe language; I understand also when they speak. When we gather somewhere, especially those ones that work on the Anishinaabe way of life and the Anishinaabe language, we all should listen to them carefully.

We should all believe them; we should never think that they are lying to us.
(2013, p. 9)

The analysis of participants stories and sharing during the workshop therefore followed a Debwewin Izhichigewin (truth seeking methodology) whereby all insights were accepted as truth and story gathering continued until there was saturation and consensus on discussion topics. The analysis of the case is further based on insights derived from community visits, a nibi (water) workshop held at Walpole Island First Nation in December 2018, and the analysis of treaties, policy reports, legislation, regulation, grey literature and media coverage. The workshop participants represented First Nation environmental employees, traditional knowledge holders, and community members. The next section's discussion of findings of the nibi workshop are organized in relation to the purpose of this paper, by considering the seven teachings of Great Lakes Indigenous water governance in relation to Indigenous engagement in multilevel governance of AOCs under the Great Lakes Water Quality Agreement.

Results and Discussion

This paper aims to highlight how existing Great Lakes multilevel governance perspectives and approaches do not align with the Indigenous water governance epistemologies and ontologies shared by many Indigenous Peoples and Nations in the basin. If multilevel governance strives to include a diverse range of actors to develop solutions to complex water problems, we need to work to ensure Indigenous Nations have a seat at the table and that the following principles of Indigenous water governance are recognized including (1) Relationality – recognizes that water is a living entity; (2) Justice – affirms Indigenous and treaty rights; (3) Respect – respects Indigenous sovereignty and self-determination; (4) Harmony – centers Indigenous worldviews; (5) Inclusivity – values Indigenous science and knowledge systems

alongside other scientific traditions; (6) Reciprocity – incorporates holistic co-governance models; and (7) Responsibility – fulfills responsibilities to all life and future generations. The following results explore ways to (1) understand Indigenous engagement in Great Lakes governance; (2) uncover how conflicting worldviews lead to governance disagreements; and (3) explore barriers and strategies for greater co-governance opportunities and Indigenous water justice. The analysis illustrates how Indigenous nibi workshop participants perceive their Indigenous Nation, Canada and the U.S., and considers how other subnational actors can work to enact change to combat the water injustices their territories face given the high prevalence of toxic hotspots.

Relationality - Water is a living entity

Overall, community participants in the nibi workshop shared the understanding that water is a living and sentient being. They also expressed concern that this teaching and humanity's responsibility to care for the water was not shared with non-Indigenous actors in the Great Lakes. Some participants expressed this mismatch of worldviews regarding AOCs. Specifically, they mentioned that the process of designating AOCs operates in anthesis to Anishinaabe worldview because it does not view water holistically or understanding that water is all connected. For example, one participant explained:

“We’re tied to our way of life and our way of knowing and I feel as when it comes to people that want to protect the Great Lakes we’re not asking them to appropriate our culture or to make our culture theirs but we’re just hoping that they can see or even know that intimate understanding of how vital water is to life. And not treat it as if it’s an inert object something that’s not living, that can be used” (Participant, WIFN Nibi Workshop).

In instances of addressing legacy pollutants, participants revealed that they were concerned the process of removal of pollutants does not further damage the river. They spoke of the river and

the water as a relative with deep emotional connection. Conceptualizing harm to the river was as if someone wanted to harm a family member. Indigenous water governance as a praxis for decision-making is grounded in the teaching that water is a living entity, and the AOC and RAP processes currently do not fully embrace that worldview to fully welcome Indigenous engagement in multilevel governance.

Justice - Affirms Indigenous and treaty rights

Walpole Island First Nation's treaty rights and Indigenous rights under international law must be respected. Workshop participants revealed that they believed their protected rights to hunt, fish, and harvest plants were threatened by the contamination and the failure to remediate the AOCs in proximity to their territory. The water in the Bkejwanong Territory is severely impacted by farming. Participants commented on the increasing noticeability of algal blooms in the territory, which they attribute to area farming practices:

“I was noticing at the end of the summer I thought I was seeing algae blooms on top of the water and it kind of alerted me because I was thinking I've never seen that in my whole life I've never seen that on the Snye River and I know it's from the farming and it's from the stuff that they use on the farmers' fields. And so, its impacting the Snye River, which is a really really deep river and its fast flowing and how can it develop so quickly on top of a fast moving river. So, with the algae blooms I've noticed we're starting to get surrounded by them and it's getting worse” (Participant, WIFN Nibi Workshop).

Workshop participants commented on the changes they have seen in their territory and surrounding areas where they exercise their hunting and fishing rights commenting that the rights of agriculture and industry are prioritized over the rights of the water and all life who depend on it. Participants expressed concern that the St. Clair River has been contaminated by the chemical plants in Sarnia and as downstream users they have to deal with the aftermath of the chemical pollution such as fish deformities. Community

members expressed a desire for all actors in the region to work to protect the water and all life who depend on it in fulfillment of the treaties.

Respect – respects Indigenous sovereignty and self-determination

Throughout the nibi workshop a recurring theme recited by attendees was that they did not believe non-Indigenous governments in the Great Lakes respected Indigenous sovereignty and rights to self-determination. Moreover, participants expressed concern that non-Indigenous governments in control of the AOCs and RAP process are in service to corporations often privileging their voices in the decision-making process over Indigenous Nations, stating:

“It comes down to industries. We didn’t create the herbicides. We didn’t put the stuff in the water. We didn’t create these plants up in Sarnia” (Participant, WIFN Nibi Workshop).

Participants revealed that they believe the plants in Sarnia are one of the largest contributors to water contamination in their territory. In large part the legacy pollutants and beneficial use impairments can be traced back to agriculture and the chemical plants according to participants. Additionally, the U.S. or Canadian governments’ punishment for water contamination is not severe enough to deter future pollution according to Indigenous community members:

“They do try to get the plants [to be responsible for the spills] but [if] there’s a big spill and they’re only going to fine them a little bit of money. They just pay the fine and then they’re going to spill it again. They don’t think about who’s down river. And when you look at our fish to this day we get like pickerel, blue gill, they’re all missing part of their fin, their back you know there’s something wrong with them and that’s from the water they have to live in every day” (Participant, WIFN Nibi Workshop).

Many WIFN community members in attendance expressed a desire to be able to drink the water, eat the fish, harvest medicinal plants, and exercise their ancestral knowledge, but are fearful of the toxicity and contamination noting the high rates of cancer and other diseases in the

community. Participants felt that the dominant water regime is replicating patterns of colonialism and now they are colonizing the water. A workshop participant commented,

“What they did to us with their legislations and policies and governments and rules and everything like that they’re doing to them – the animals and the water – same thing” (Participant, WIFN Nibi Workshop).

The current AOC and RAP processes have not decolonized and continue to enact the colonial *status quo* of water management in the Great Lakes to the disadvantage of Indigenous Peoples and the water.

Harmony – Centers Indigenous worldviews

The AOC and RAP processes will not embrace teachings of Indigenous water governance until they center Indigenous worldviews in the policies and programming. Participants stated that the philosophy behind Areas of Concern does not align with Indigenous worldviews. A workshop participant commented,

“For us even the whole concept of area of concern just doesn’t sit well with us because we see everything as being connected anyways. And we feel like breaking things up into all of these plans focusing on specific areas it’s kind of hard for us to mentally try to disconnect those areas and try to compartmentalize all of these things when we see everything as being connected and being a unit as a whole” (Participant, WIFN Nibi Workshop).

For WIFN members it is important to have a more holistic understanding of how everything is connected to the water. Often the “compartmentalization” of water issues is a barrier to Indigenous engagement, because it does not translate and is hard for Indigenous Peoples to comprehend why non-indigenous actors prefer to view the water as inanimate and separate from themselves. Thus, Indigenous engagement could be improved if there was increased blending of non-indigenous and Indigenous knowledge systems. AOC and RAP processes would have a more holistic strategy if they included

ecosystem-based approaches that align better with Indigenous worldviews rather than focusing on traditional single species, habitat, or contaminant solutions.

Inclusivity - Values Indigenous science and knowledge systems

Workshop participants included scientists and traditional knowledge holders, and all expressed concern that Indigenous science was not equally valued with western science. Additionally, community members felt that their knowledge of ecosystem change was not valued or was deemed not appropriate given the biased western scientific mandates of various intergovernmental Great Lakes efforts. One participant expressed frustration that the AOCs only address legacy pollutants not new or emerging pollutants. A workshop participant commented,

“With regards to beneficial use impairments things that are considered impaired they relate all of those things as being impaired due to legacy issues like legacy pollution things that have settled to the bottom of the river in the sediments. They’re not doing a lot of focusing on these new and emerging issues. And if you try to say ‘Well we’ve got these problems’ they will say ‘Well we’re really trying to phase areas of concern out’. It sort of bothers me because I feel like they’re spending a lot of research, a lot of money, trying to prove that things are no longer impaired based on things that they observed back in the 80s when it was first listed an area of concern. So, if you do talk about these new issues or these things that are now being noticed they’ll say ‘well you know we don’t want to cover that as an area of concern problem we want to just put that under one of the lake wide management plans,’ which is looking at the lakes rather than looking at these specific areas” (Participant, WIFN Nibi Workshop).

This is emblematic of the larger problem with the current AOC and RAP processes – they were designed without Indigenous consultation or consent. Indigenous Nations are now being asked to sign off on a remediation process that does not represent their interests or understandings of the problems. Furthermore, solutions they propose that are different from those proposed by non-Indigenous actors in the processes are often shot down or labelled as outside of the mandate of the decision-making body. Attendees commented that this only seems to happen to Indigenous

proposed solutions and not those put forward by other actors. Participants also expressed concern that their Indigenous knowledge systems and understanding of impairments to the water were not being considered or valued in the AOC process. A workshop participant commented,

“Go out on the water and you lay down tobacco. These are simple little things they could be putting in front of their policies. We as a government should be putting down tobacco. We should be respecting the waters, because First Nations people have been here for centuries and they’re finally now starting to implement that in their policies” (Participant, WIFN Nibi Workshop).

The current practices of decision-making related to the AOCs and RAPs were not seen as suitable for the workshop attendees. Their reflections indicated that the current policies for AOCs are not representative of Indigenous epistemologies of caring for water, but that simple changes could create a Great Lakes governance system that respects Indigenous knowledge.

Reciprocity – Incorporates holistic co-governance models

The lack of government-to-government governance models are an obstructing force to Indigenous engagement in management of AOCs according to workshop attendees. They noted that the existing structures meant to facilitate interjurisdictional coordination such as the Lakewide Area Management Plans (LAMPs) lack participation of First Nations. A workshop participant commented,

“The thing is when those lakewide management plans which have been most recently been developed and created there was in my opinion a lack of First Nation participation in those processes. So, I know they exist but I’m not really well informed on what’s in those documents, what are they working on ... [and] just because they’re may be a few representatives from the First Nation that may sit on those International Joint Commission boards doesn’t mean that they’re representing the community at large. So, I haven’t seen the action where they’ve come here to say hey you know we want your input” (Participant, WIFN Nibi Workshop).

WIFN workshop participants felt they were involved in the St. Clair River AOC but not properly engaged at the highest-level of decision making for the Clinton River, Detroit River, Rouge River, or Wheatley Harbor RAPs. Attendees remarked that Indigenous Nations want to be equal partners in the decision-making, to have their voices heard, and their sovereignty respected. The lack of formal partnership roles, consultation, and co-development of decision-making policies from the on-set has severely limited their participation. However, despite the negative experiences, attendees noted a continued willingness to want to work collaboratively with the U.S. and Canada to find solutions for Great Lakes protection. This speaks to a desire to develop holistic co-governance models that embrace water philosophies of all basin actors.

Responsibility - fulfills responsibilities to all life and future generations

Lastly, workshop participants discussed how the determination of an AOC should not be based on beneficial use impairments (BUIs) that are tied to human use, because they do not account for use of the water by fish, plants, or animals. A workshop participant commented,

“The thing about that [BUI] list is that they’re all tied to human use like drinking water that relates to drink water for people, you know agriculture and industry a lot of these things are tied to people and when I often go to speak about drinking water the beneficial use for that is that I always try to bring it back home to the people that we work with on this is that even though if there’s a spill coming down the river we have that option of shutting off our water treatment plant but just say we do that and we fill our water tower up and we rely on the reserves for that and wait for the spill to pass. Not very many people are thinking especially the ones that are doing the spilling are thinking what about the fish that have to drink it what about the plants and the animals that drink that it’s not like they have a tap or a water treatment plant that they can shut off and avoid being exposed to those things” (Participant, WIFN Nibi Workshop).

Attendees advocated for a reframing of AOC priorities to be less anthropocentric. There was a call for a collective conscience to emerge that does not put humanity above all other life, but rather considers all life that depends on water now and in the future. Residents of Bkejwanong Territory expressed that despite the challenges for non-indigenous people to understand their valuing of all life they were hesitant to lay the responsibility for remediation of the contaminated areas only on polluters. When asked “Who is responsible for cleaning up the AOCs?” participants unanimously and unwaveringly said: “We are all responsible.”

Based on the insights from the nibi workshop, Indigenous engagement under the Great Lakes Water Quality Agreement, Areas of Concern program has not been successful for the realization of multilevel governance that is inclusive of Indigenous Peoples. However, as “Strong, Resilient, Indigenous” attendees reclaiming their power for Indigenous water governance in the Great Lakes, they recommended that governance reform involve multiple solutions including policy changes, personal responsibility, and investments in technology to reduce the region’s dependency on the products of the chemical plants. Furthermore, they recommended infrastructure changes including developing closed loop systems to disconnect factories from the rivers and banning return of treated chemical waste water. In general, collaboration with diverse actors in the Great Lakes at different levels of government is welcomed so long as Indigenous water governance principles are upheld including (1) Relationality – recognizes that water is a living entity; (2) Justice – affirms Indigenous and treaty rights; (3) Respect – respects Indigenous sovereignty and self-determination; (4) Harmony – centers Indigenous worldviews; (5) Inclusivity – values Indigenous science and knowledge systems alongside other scientific traditions; (6) Reciprocity – incorporates holistic co-

governance models; and (7) Responsibility – fulfills responsibilities to all life and future generations.

Strategies and Barriers to Indigenous Nation Participation in Great Lakes Multilevel Governance

There are seven substantial barriers to the full participation of Indigenous Nations in the existing multilevel governance structures for the Great Lakes. The proximity of the majority of Indigenous Nations in the Great Lakes to an area of concern (highly contaminated site) is a grave water injustice symptomatic of water colonialism (Robison et al. 2018). In order for Indigenous Nations to be recognized as equal partners for building shared solutions for Great Lakes protection a variety of barriers to multilevel and Indigenous water governance must be overcome. Within the literature and as illustrated in the case study there are recurring barriers to the Indigenous Nation participation that include (1) capacity failures; (2) information failures; (3) violations of free, prior and informed consent; (4) fragmentation; (5) funding gaps; (6) data gaps and (7) lack of equal representation (Zeemering 2018; Bakker and Cook 2011; Arsenault et al. 2018; Norman et al. 2011; Holifield and Williams 2019; Ettawageshik 2008).

Some Indigenous Nations are making important contributions to Great Lakes governance, but not all are equipped to do so. Limited capacity of Indigenous Nations for staffing environmental departments as well as tools for navigating the complex web of laws, policies, and institutions of the U.S. and Canada are significant barriers (Norman et al. 2011). Capacity constraints not only limit Indigenous Nations abilities to co-govern with the U.S. and Canada, but also their ability to develop water laws, policies, and institutions for benefit of their communities (Simms et al. 2016). Capacity constraints also impact another barrier – information failure. Indigenous Nations often express frustration that they are not contacted about programs,

studies, policies, initiatives in the Great Lakes that would affect them. If they are contacted, they may not receive the communication because it is a form letter or e-mail that although sent out never actually reaches the intended recipient. These communication failures manifest frequently in transboundary water governance and often are linked to basic errors including lack of contact information for current leadership; incorrect information in the directory; or untimely delivery.

The discussed communication crises can also lead to missed funding deadlines that exacerbate an already dismal funding gap for Indigenous Nations that limits their participation in Great Lakes governance. Inequitable funding distributions are barriers for Indigenous Nations (Arsenault et al. 2018). Tribes as well as First Nations and Métis are able to receive funding through the Great Lakes Restoration Initiative and the Great Lakes Guardian Fund respectively. Additional, funding sources may include federal grants, foundations, or the economic development enterprises of the individual Indigenous Nations (Tribal Nations Issues and Perspectives Report 2005). Indigenous Nations are often concerned with funding barriers to their participation in multilevel governance structures, especially with increasing decentralization of Great Lakes governance this can mean funding streams are eliminated that specifically benefit Indigenous Nations in favor of states, provinces, or local municipalities (Tribal Nations Issues and Perspectives Report 2005). Inadequate funding can also reproduce data gaps that are already profound for Indigenous Nations in their governance of the lakes (Arsenault et al. 2018). Therefore, the decolonization of Great Lakes water governance must include allocations of cross-jurisdictional data sharing for informed decision-making. Indigenous Nations also need to be included in the process by which research and data priorities are determined for the Great Lakes. Data systems, their development, and management must also value Indigenous Knowledge Systems equally with western science.

Another barrier to Indigenous participation in Great Lakes governance is fragmentation. Fragmentation, or the lack of coordination among multiple actors, is a well-documented barrier among the U.S., Canada, and other subnational actors (Bakker and Cook 2011; Arsenault et al. 2018; Norman et al. 2011). There are many actors across the Great Lakes with a seat at the table for water decision-making. However, as Bakker and Cook (2011) note, “A plurality of actors is not necessarily problematic, but in the absence of an effective coordinating mechanism it can produce multiple conflicting policies and, therefore, poor water management outcomes” (p. 281). Indigenous water institutions have been formed to foster enhanced coordination among Indigenous Nations and with external governments such as the U.S. and Canada. However, these institutions are not only developed to overcome the barrier of fragmentation but also serve to mobilize for collective action, engage with other levels of governments such as states, provinces, municipalities, and international forums. Moreover, these institutions are leading science, technology, and research arms bridging the data fragmentation for water governance that face many Indigenous Nations. Indigenous Nations, like the “canaries in the mine”, are sounding the alarm that the status quo for governance of the Great Lakes is not working. Additionally, they are underscoring the need for reform of existing institutions and or the creation of new institutions to effectively coordinate all Great Lakes governance actors.

This is also related to the lack of equitable representation of Indigenous Nations at the multitude of “tables” in the Great Lakes with authority for water decision-making. Indigenous Nations have a right to be present on all Great Lakes decision-making bodies and the decision whether or not to participate on an intergovernmental body should be their choice. Furthermore, representation of Indigenous water institutions such as the Great Lakes Indian Fish and Wildlife Commission or the Chippewa Ottawa Resource Authority do not supplant the right of each

individual Indigenous Nation in the basin to be represented on decision-making entities. They may choose to have their interests represented collectively, but that does not negate their individual sovereign statuses nor the treaty obligations of the U.S. and Canada to each Nation. Lastly, effective participation by Indigenous Nations cannot be a foregone conclusion, even if the governments are listed as participants on public documents. As scholars point out, “Often Indigenous Nations will be listed in reports, but have not received any communication or consultation” (p. 32). The UN Declaration on the Rights of Indigenous Peoples guarantees the right of Indigenous Peoples to free, prior, and informed consent (FPIC) (UNDRIP 2007). The participation of Indigenous Nations as meeting attendees does not amount to consent. Furthermore, the practice of “meaningful consultation” whereby Indigenous Nations’ consent is still not obtained prior to the authorization of a project that would be detrimental to their waters is a violation of Indigenous rights. Frank Ettawageshik (2008) advises,

It is thus our right, our responsibility and our duty to insist that no plan to protect and preserve the Great Lakes Waters moves forward without the equal highest-level participation of Tribal and First Nation governments with the governments of the United States and Canada. Merely consulting with Tribes and First Nations is not adequate, full participation must be achieved. (p. 480)

Indigenous Nations in the Great Lakes still face a huge barrier in ensuring the fourth pillar of FPIC – consent – is achieved prior to policy change. These barriers must be overcome for Indigenous water governance to thrive in the Great Lakes and for existing multilevel governance structures to embrace Indigenous worldviews.

However, Indigenous Nations have found seven affirming strategies of Indigenous water governance to resist and navigate the complex multilevel governance of the Great Lakes: (1) speaking for ourselves; (2) respecting Indigenous water rights; (3) asserting sovereignty and right to self-determination; (4) connecting to community through education and awareness; (5)

reclaiming ceremony and prayer; (6) honouring of treaties; and (7) valuing Indigenous science. Firstly, Indigenous Nations and Peoples are committed to speaking for ourselves. In practice, this may mean filing petitions asserting Indigenous rights when a project is being approved without our consent. Other outlets for insuring our voices are heard include mainstream media, social media, and often as a last resort litigation. Indigenous Peoples and Nations in the Great Lakes are also advocating for other basin actors to respect Indigenous rights to water, territories, and self-determination as protected under the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Violations of Indigenous rights have been reported to the UN Special Rapporteur on Indigenous Rights, at the United Nations Permanent Forum on Indigenous Issues, the Expert Mechanism on the Rights of Indigenous Peoples, and through the Universal Periodic Review process of the Office of High Commissioner for Human Rights.

To protect traditional territories, sacred sites, places of cultural patrimony and to fulfill Indigenous stewardship obligations, Indigenous Peoples, often with Indigenous government support, have built occupation camps in opposition to settler-colonial projects in violation of Indigenous sovereignty. Indigenous Nations are also using the language of Article 32 of UNDRIP to protect their territories from water colonialism. UNDRIP Art. 32 requires free, prior, and informed consent for any project that would impact the territories, lands, waters, and resources of Indigenous Peoples. There has also been a strategy among Great Lakes Indigenous Nations to share Indigenous epistemologies for caring for water through water declarations and water walks. These are practices of Indigenous water knowledges that build water citizenship among all peoples of the Great Lakes. Furthermore, Indigenous Nations are challenging Canada and the United States to live up to their treaty obligations and restore meaningful nation-to-nation relationships for shared governance of the Great Lakes.

Lastly, Indigenous Nations in the basin are navigating many of the barriers previously discussed by leading with Indigenous knowledge and science. Intertribal organizations such as the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) are developing innovative ways of mobilizing Indigenous and western science for species protection and Great Lakes stewardship. The case study demonstrates that non-Indigenous basin actors must fully recognize and support Indigenous nationhood for there to be an increase in Indigenous participation in collaborative governance of transboundary waters. Effective transboundary collaboration endorses Indigenous self-determination by respecting Indigenous sovereignty and assists with capacity building so that Indigenous Nations are equitable decision-makers with full control over the use of their knowledge in the planning and governance processes. If water shows us anything it is that we are all connected. Water flows and does not recognize political boundaries and as such innovation in water policy needs to be reflective of this connectivity and recognize that self-governance and self-determination mean collaboration and working together to create a shared sustainable future for the next seven generations. Future research will explore further examples of best practices for navigating these barriers among Indigenous Nations in the governance of the Great Lakes.

Conclusion

Uncovering differences and similarities in worldviews for multilevel governance in the Great Lakes can begin to bridge the equity gap in shared decision-making between Indigenous Nations and the region's decentralized water management structures. In many instances, what is considered "good water governance" by non-Indigenous actors in the basin is considered highly unjust and irresponsible to Indigenous Nations leading to disagreement and conflict over priorities and actions for Great Lakes protection. Multilevel governance in the Great Lakes is

well acknowledged and has been explored from the national lenses of Canada and the U.S. as well as the sub-national units in the basin. However, previous studies failed to examine the way Indigenous Nations and Indigenous water governance engage in the existing multilevel governance of the Great Lakes. Over time opportunities for Indigenous Nations to engage in Great Lakes multilevel governance have increased however barriers to their engagement at the highest level of decision-making in full recognition of their sovereignty have not yet been overcome. The persistence of Indigenous water governance is a resistance movement against the colonial *status quo* for Great Lakes protection. If multilevel governance in the region is to be inclusive of Indigenous Nations and reflect Indigenous water governance worldviews it will be important to encourage more equitable representation of Indigenous Nations in all levels of legal, policy, and institutional arrangements in the Great Lakes.

The nibi workshop has shown to be an appropriate Indigenous methodology grounded in Indigenous epistemologies of relationality allowing for an overview of the pressing concerns of Indigenous Peoples regarding Great Lakes protection and Indigenous water governance. The findings confirm previous research on Indigenous cooperative environmental protection in the Great Lakes (Reo et al. 2017). Additional research should emphasize the multilevel governance approaches of Indigenous Nations in securing their water sovereignty, while considering their positioning in the overall network of Great Lakes governance actors, which would provide a pathway for identifying future initiatives for decolonization of the dominant U.S.-Canada water regime. Furthermore, Great Lakes scholars need to include Indigenous Nations as governance actors in future studies to not only advance ethical research, but to provide insights for enhancing the nation-to-nation relationships of all sovereigns in the basin for transboundary Great Lakes governance.

With regard to Areas of Concern there are grave water injustices plaguing Indigenous Nations in the basin given their overrepresentation of proximity to AOCs without a formal partnership role in the management and remediation processes that affect their territories and citizens. Moving forward Indigenous Nations should be given the opportunity to have a role at the highest level of decision-making. Furthermore, this may necessitate a renegotiation of the Boundary Waters Treaty to honor the first transboundary water agreements – the treaties with Indigenous Nations. The treaty renegotiations will also allow for the expansion of the International Joint Commission to include equitable representation for Indigenous Nations in full recognition of their sovereignty and in fulfillment of nation-state obligations under the UN Declaration on the Rights of Indigenous Peoples. Lastly, as noted in the Walpole Island First Nation nibi workshop we are all responsible for the water. It is time we lived up to those responsibilities, remembering our connection to Mother Earth, and that ‘water is life’.

APPENDIX A: Indigenous Nation Proximity to Great Lakes Areas of Concern

Area of Concern	Indigenous Nation(s) Within 10 Km	Indigenous Nation(s) Within 50km
<u>Ashtabula River</u>		
<u>Black River</u>		
<u>Buffalo River</u>		Tonawanda Band Of Seneca Indians Of New York; Tuscarora Nation Of New York; Seneca Nation Of New York
<u>Clinton River</u>		Walpole Island First Nation; Sarnia Indian Reserve No. 45
<u>Cuvahoga River</u>		
<u>Deer Lake Delisted</u>		Keweenaw Bay Indian Community
<u>Detroit River</u>	Walpole Island First Nation	Walpole Island First Nation
<u>Eighteenmile Creek</u>	Tonawanda Band Of Seneca Indians Of New York;	Tonawanda Band Of Seneca Indians Of New York; Tuscarora Nation Of New York
<u>Lower Green Bay & Fox River</u>	Oneida Tribe Of Indians Of Wisconsin	Oneida Tribe Of Indians Of Wisconsin; Menominee Indian Tribe Of Wisconsin; Stockbridge Munsee
<u>Grand Calumet River</u>		
<u>Kalamazoo River</u>		Match-E-Be-Nash-She-Wish Band Of Pottawatomie Indians Of Michigan
<u>Manistique River</u>	Sault Ste. Marie Tribe Of Chippewa Indians Of Michigan	Sault Ste. Marie Tribe Of Chippewa Indians Of Michigan
<u>Maumee River</u>		
<u>Menominee River</u>		Tribes In Proximity Are Approx. 60km Away
<u>Milwaukee Estuary</u>	Forest County Potawatomi;	Forest County Potawatomi;
<u>Muskegon Lake</u>		
<u>Niagara River</u>	Tuscarora Nation Of New York	Tonawanda Band Of Seneca Indians Of New York; Tuscarora Nation Of New York;
<u>Oswego River Delisted</u>		
<u>Presque Isle Bay Delisted</u>		

<u>River Raisin</u>		
<u>Rochester Embayment</u>		
<u>Rouge River</u>		Walpole Island First Nation
<u>Saginaw River And Bay</u>	Saginaw Chippewa Indian Tribe Of Michigan	Saginaw Chippewa Indian Tribe Of Michigan
<u>Sheboygan River</u>		
<u>St. Clair River</u>	Walpole Island First Nation; Sarnia Indian Reserve No. 45	Walpole Island First Nation; Sarnia Indian Reserve No. 45; Kettle Point Indian Reserve No. 44; Moravian Indian Reserve No. 47;
<u>St. Lawrence River At Massena</u>		
<u>St. Louis River And Bay</u>	Minnesota Chippewa Tribe, Fond Du Lac Band; Ho-Chunk Nation Of Wisconsin;	Minnesota Chippewa Tribe, Fond Du Lac Band; Ho-Chunk Nation Of Wisconsin; ; Minnesota Chippewa Tribe, Mille Lacs Band; Minnesota Chippewa Tribe - Leech Lake Band; Minnesota Chippewa Tribe, Bois Forte Band
<u>St. Mary's River</u>		
<u>Torch Lake</u>		Keweenaw Bay Indian Community
<u>Waukegan Harbor</u>		
<u>White Lake Delisted</u>		
<u>Thunder Bay</u>	Fort William First Nation	Fort William First Nation ; Minnesota Chippewa Tribe, Grand Portage Band
<u>Nipigon Bay</u>	Red Rock Indian Band; Lake Helen Indian Reserve No. 53a	Red Rock Indian Band; Lake Helen Indian Reserve No. 53a; Pays Plat Indian Reserve No. 51
<u>Peninsula Harbour</u>	Pic River Indian Reserve No. 50	
<u>St. Mary's River</u>	Garden River Indian Reserve No. 14; Bay Mills Indian Community; Whitefish Island Indian Reserve; Sault Ste. Marie Tribe Of Chippewa Indians Of Michigan	Thessalon Indian Reserve No. 12; Zhiibaahaasing Indian Reserve No. 19; Garden River Indian Reserve No. 14; Bay Mills Indian Community; Whitefish Island Indian Reserve; Sault Ste. Marie Tribe Of Chippewa Indians Of Michigan
<u>St. Clair River</u>	Walpole Island First Nation	

<u>Detroit River</u>		
<u>Niagara River</u>		
<u>Hamilton Harbour</u>	Six Nations Of The Grand River; Mississaugas Of The New Credit First Nation	
<u>Toronto And Region</u>		Mississaugas Of Scugog Island; Chippewas Of Georgina Island First Nation;
<u>Port Hope Harbour</u>	Hiawatha First Nation	
<u>Bay Of Quinte</u>	Tyendinaga Mohawk Territory; Hiawatha First Nation; Sugar Island Indian Reserver No. 37a; Islands In The Trent Waters Indian Reserve No. 36a; Mississaugas Of Scugog Island	Chippewas Of Georgina Island First Nation; Tyendinaga Mohawk Territory; Hiawatha First Nation; Sugar Island Indian Reserver No. 37a; Islands In The Trent Waters Indian Reserve No. 36a; Mississaugas Of Scugog Island
<u>St. Lawrence River</u>	Akwesasne; St Regis Mohawk Tribe	Kahnawake Indian Reserve No. 14; Kanesatake Lands; Akwesasne; St Regis Mohawk Tribe
<u>Collingwood Harbour (Delisted)</u>		Christian Island Indian Reserve No. 30;
<u>Severn Sound (Delisted)</u>	Wahta Mohawk Territory; Christian Island Indian Reserve No. 30;	Moose Point Indian Reserve No. 79; Chippewas Of Rama First Nation; Parry Island First Nation; Wahta Mohawk Territory; Christian Island Indian Reserve No. 30;
<u>Wheatley Harbour (Delisted)</u>		Walpole Island First Nation;
<u>Spanish Harbour (In Recovery)</u>	Serpent River Indian Reserve No. 7; Sagamok Indian Reserve;	Mississagi River Indian Reserve No. 8; Sheshegwaning Indian Reserve No. 20; Sucker Creek Indian Reserve No. 23; Sheguiandah Indian Reserve No. 24; Whitefish River Indian Reserve No. 4; Whitefish Lake Indian Reserve No. 6; Serpent River Indian Reserve No. 7; Sagamok Indian Reserve;
<u>Jackfish Bay (In Recovery)</u>		Pays Plat Indian Reserve No. 51

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CHAPTER 5: WALKING FOR THE WATER: INDIGENOUS WATER CITIZENSHIP AND THE RESURGENCE OF WATER AS KIN

Introduction

I think what people don't understand is that they enter this world walking into the soul of water as spirit is growing this beautiful blanket around their mother's womb. The first introduction to all of the elements is water ...This is something that has been birthed in us since the beginning of time. We're the seeds of our ancestors and when you blossom from those seeds it has been nourished from water. So, it's a greater understanding of what water really means to you.
(Anishinaabe Grandmother, 2018)

Indigenous water governance in the Great Lakes challenges mainstream assumptions of the value of water. Often settler-colonial society associates valuations of water as a resource or commodity framed around discourse of “what is water?” within the context of capitalism (Wilson and Inkster 2018; Linton 2010). However, it is clear from the opening statement that Indigenous society asks a different question, not “what is water” but “who is water”? These conflicting worldviews shape the diplomatic pluralisms for enacting water citizenship across contested boundaries in the Great Lakes by Indigenous Peoples, settlers and newcomers of Turtle Island (North America). Increasingly, Indigenous waters in the Great Lakes and around the world are threatened by oil pipelines, dam proliferation, non-point source pollution, boil water advisories, climate change and other water security issues. Furthermore, Anderson et al. (2013) identify that the gendered dimensions of water insecurity for Indigenous Peoples are especially salient for discerning the diversity of experiences of water governance in the Great Lakes. Historically, Indigenous women have been excluded from dominant water regimes structured within settler-colonial modes of water governance (Fauconnier et al. 2018). There are inherent structural barriers and constraints that perpetuate Indigenous women's exclusion (Kymlicka and

Norman 1994). As life givers, Indigenous women are often seen as the keepers of “water knowledge” (Anderson et al. 2013), and their exclusion has disenfranchised Indigenous Peoples from exercising their water citizenship through prayer, song, ceremony, law, science, and policy for protection of the Great Lakes and other waters across Turtle Island.

The genocidal policies of removing Indigenous children from their families, homes, territories, and nations in many instances severed the transference of intergenerational water knowledge. In a time of reconciliation, and as a testament of Indigenous survival and resilience, Indigenous Peoples are reclaiming water knowledges through kinship diplomacy (Patterson 2018) reconstituting treaty relations (Simpson 2013) with water through diverse modalities of water citizenship, including water walking. Water walks are Indigenous-led extended water ceremonies of prayer and song that honour water as relation and life-giving force (Nibi Walk 2019).

There are gendered dimensions of water walking that recognize the unique role of women as keepers of water knowledge charged with ensuring those teachings are passed on to future generations. However, for many decades Indigenous women were prohibited from passing on these water knowledges as a result of U.S. and Canadian federal laws and policies. Indigenous ceremonies, spiritual practices and religious freedom were not protected in the U.S. until the passage of the American Indian Religious Freedom Act in 1978. In Canada, religious persecution was systemic (Bakht and Collins 2017) and so pervasive that some legal scholars have argued religious freedom for Indigenous Peoples will never be recognized (Shrubsole 2017). Indigenous Peoples are still in a process of healing from the legacy of residential schools domesticating Indigenous women and girls stripping them of their connections to their ancestral homelands, waters, and the ecological knowledge millennia old contained within their languages.

Furthermore, ongoing practices of forced and coerced sterilizations severing Indigenous women's ability to carry life pass on that natal connection to water to future generations. However, water walks also embrace the plurality of genders in Indigenous societies and aspire for non-binary roles that restore balance between all peoples and the water.

It was clear from the outset of the water walks that they were not protests, but enactments of ancient stewardship responsibilities through ceremony, prayer, song and other means to reclaim our original connection to the first medicine we receive as human beings on this planet – water. Water citizenship includes the non-activist actions for water protection in the public sphere that fulfill Indigenous water responsibilities and ensure the transmission of Indigenous water knowledges. This article addresses the unique ways in which water citizenship is constructed amongst water walkers in the Great Lakes and globally.

Origins of the Water Walks

Many water walkers communicate that the water walks are not a new phenomenon, but a reclamation of ancestral knowledge and resurgence of traditions for establishing relationship with water as kin. However, the contemporary organization of water walks as prayerful action embodying Indigenous water citizenship began in 2003 with the first Annual Mother Earth Water Walk around Lake Superior (Mother Earth Water Walk 2019). However, the story of how the first walk began dates back a few years prior. In 2000, Indigenous leaders in the Great Lakes began sharing water prophecies on the dire conditions of Mother Earth's lifeblood – water. Grandmother Josephine Mandamin, often credited as the originator of the modern water walks, has said she was awakened to the threats to the water while in ceremony when an elder remarked “how in thirty years from now, that water was going to cost as much as an ounce of gold” (Mandamin, 2015, p. xii). She recounts that when the elder finished speaking he asked everyone

“What are you going to do about it?” and that question “sat in her heart” and directed her on the path that eventually became the water walks three years later (Mandamin, 2015, p. xii). Notably, Mandamin visited with other Indigenous women and Grandmothers to determine how best to protect the water. In essence, the water walks were birthed through the visionary diplomatic capacity of Indigenous women to “pick up their bundles” to fulfill their responsibilities for caring for the water. The term “Grandmother” as defined by Anderson et al. (2013) is used to describe elder Indigenous women who have taken on a leadership role in their nations and communities who also are often charged with teaching water citizenship.

The idea to walk around Lake Superior with a pail of water in prayer and ceremony originated in the same way many Indigenous diplomatic conversations are born, by women having kitchen talk (Mandamin 2015). Water and food are sacred medicines that form the roots of Indigenous diplomacy so discussions of their protection originating from the home, the heart of Indigenous families, is the quintessence of Indigenous sovereignty. Mandamin and the other Mother Earth Water Walkers chose to begin their walk in the spring time as it is a time of regeneration and birth (Mandamin 2015). In the early years of the water walks, there were not very many walkers. Grandmother Josephine commented that she often walked alone when she first began the walks. But, slowly as the world saw an Indigenous Grandmother walking the lakes with a copper pail and an Eagle Staff, the world was awakened, inquisitive, and began to pick up their bundles and support the spiritual intent of the water walks.

More than 200 water walks have been held since the Mother Earth Water Walkers began walking around the Great Lakes in 2003. Additionally, walks have not only been held across Turtle Island (North America) but in Belgium, Brazil, China, Japan, and South Africa. Grandmother Josephine walked all five of the Great Lakes and the St. Lawrence River as well as

many other waters in her lifetime totaling more than 32,000 km. According to the Nibi Walks every step is a prayer and water walks, led by Anishinaabe Grandmothers “respect the truth that water is a life giver, and because women also give life they are the keepers of the water” (Nibi Walks 2019). Although the water walks generally resemble one another there is no set requirements or “right way” to participate. Many walkers have commented that if you feel called to walk for the water in your own way you will find the path necessary to restore that connection to the water. The water walks provide modes of enacting Indigenous water citizenship that is informed by Indigenous diplomacy which includes kinship with non-human relations and inform the objectives of Indigenous water governance in the Great Lakes.

Theoretical Framing

Water Governance

Water governance continues to be broadly interpreted and definitions remain elusive. However, generally scholars use the term to refer to how decisions about water are made (Norman 2014) or as Fauconnier et al. (2018) note it is the “rules of the game” for water allocation, use, and protection (p. 5). Water governance recognizes that diverse actors organize themselves around informal and formal rules and institutions for water decision-making (Fauconnier et al. 2018). Notably, in 2004, the United Nations Development Programme (UNDP) defined water governance as the “political, economic and social processes and institutions by which governments, civil society, and the private sector make decisions about how best to use, develop and manage water resources” (UNDP 2004, p. 10). However, these definitions and frameworks only include the policy and governance context of water use and do not account for the spiritual and cultural context of water decision-making important to Indigenous societies.

Emerging discourse on Indigenous water governance provides a framework for recognizing the increasing role of Indigenous Peoples in governing water and restoring their spiritual and cultural relationships with water. As I have argued elsewhere Indigenous water governance “(1) recognizes that water is a living entity; (2) affirms Indigenous and treaty rights; (3) respects Indigenous sovereignty and self-determination; (4) centers Indigenous worldviews; (5) values Indigenous science and knowledge systems; (6) incorporates holistic co-governance models; and (7) fulfills responsibilities to all life and future generations” (Leonard 2019).

Indigenous water governance is therefore the process by which water decision-making occurs for Indigenous Peoples centering Indigenous ontologies of “water is life” enacted through water diplomacy and water citizenship (See Figure 1).

Embedded at the center of Indigenous decision-making for water governance in the Great Lakes is an epistemological understanding of water as a living relation and that water is life. Emanating from that foundational principle are the individual and collective actions of water citizenship within a spiritual and cultural context such as prayer, ceremony, song, water walking, and birth. In tandem there may also be individual and collective actions of water citizenship within a policy and governance context such as performances of law, kinship, sovereignty, and relationality. For each sequential circle there are aspects of Indigenous decision-making for water diplomacy and governance that are informed by policy, governance, spiritual, and cultural contexts. Notably the embedded nature of the circles does not place a hierarchical value of superiority on governance rather the figure acknowledges that governance, diplomacy, and citizenship are interdependent and ripple from a *debwewin* understanding of water is life.

Figure 1. Author’s elaboration of conceptual framework for understanding involvement in Indigenous water governance, diplomacy, and citizenship and its gendered intersections

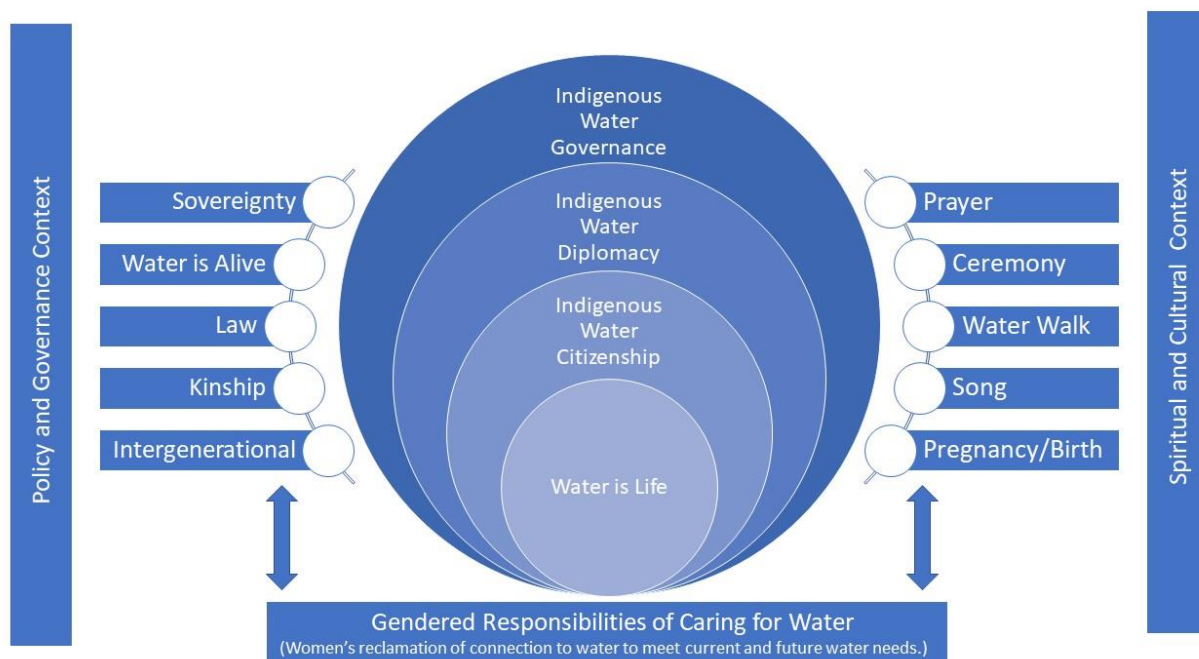


Figure 1 displays the interconnectedness of Indigenous water citizenship, diplomacy, and governance grounded in Indigenous ontologies of water as a life-giving force. The policy context dictates the formal mechanisms of law, sovereignty and kinship that create governance spaces for Indigenous water decision-making and the spiritual and cultural context shapes the mobilization and performances of water knowledge in those spaces. This interconnectedness suggests that changes in access to governance spaces and performances of Indigenous women's water knowledge influences Indigenous Peoples abilities to meet current and future water needs including fulfilling gendered responsibilities of caring for water.

Water Diplomacy

The waters of the world are shared across medicine lines (imagined boundaries) and multiple levels of governance with a diversity of actors shaping decision-making. Water diplomacy, sometimes referred to as hydro-diplomacy in the literature, refers to the struggle of state and non-state actors to create spaces for dialogue to develop solutions for transboundary

water governance (Van Genderen and Rood 2011; Klimes et al. 2019; Islam and Repella 2015). According to Klimes et al. (2019) “water diplomacy is a process leading towards establishing and/or enhancing cooperation over shared freshwater resources among a wide range of actors at multiple levels; formal and informal, intra and inter-state” (p. 1). The conceptualization of water diplomacy is multidimensional for Indigenous Peoples and embedded within the framework is a relational and reciprocal understanding of water citizenship grounded in Indigenous ontologies and epistemologies. Within Anishinaabe diplomatic traditions,

Each nation has its own spiritual and political mechanisms, rooted in its own unique legal system, for maintaining the boundaries of territory, for immigration and citizenship, and for developing and maintaining relationships with other nations regarding territory, the protection of shared lands, economy, and well-being, among many other things. Indigenous diplomatic traditions generate peace by rebalancing conflict between parties. Spiritual and social practices such as storytelling, the oral tradition, ceremonies, feasting, and gift-giving are designed to bond people together toward a common understanding. Our diplomacy concerns itself with reconciliation, restitution, mediation, negotiation, and maintaining sacred and political alliances between peoples. (Simpson 2013)

This elucidation proffered by Simpson (2013) guides the understanding of water diplomacy adopted in this study. It also helps to explain the complexities of water citizenship among Indigenous Nations and the gendering of water responsibilities that has developed over millennia. Indigenous diplomacy includes treaty relationships with the non-human world (Simpson 2008a) and water is a living entity with whom Indigenous Peoples may form treaty relationships. Hayden King (2018) highlights that Anishinaabe diplomacy embraces understandings of jurisdictions as shared and sovereignty as mobile which is divergent from Westphalian sovereignty and defined territoriality through state borders. According to Anderson et al. (2013), within many Indigenous ways of knowing on Turtle Island, water is able to form relationships because water is sentient “[b]ecause it is “spirit”, or carries spirit, water is capable

of establishing relationships with other life forms” (p. 14). Paterson (2018) contends that to have treaty relations with water is to establish the water as kin through a process of kinship diplomacy which he states is a corollary for the diplomatic traditions of Indigenous Peoples of Turtle Island and the expanse of the Westphalian system on the European continent. As King (2018) and Simpson (2008b) highlight, Indigenous water diplomacy is an awakening of ancient transboundary treaty relationships and diplomatic mechanisms. Indigenous water diplomacy is a right of self-determination and an exercise of Indigenous sovereignty that honors Indigenous treaty relations (Lightfoot and MacDonald 2017; Bauerkemper and Stark 2012). Therefore, diplomacy is not only the art of dialogue between and among nations but importantly it should promote action and spaces for the fulfillment of responsibilities to the natural world (Simpson 2013). As such Indigenous Nations in the Great Lakes believe water is a living entity through which a treaty relationship must be diplomatically maintained by Indigenous Peoples through the enactment of water citizenship.

Water Citizenship

The concepts of water diplomacy and citizenship are closely linked to water governance as they are arguably different sides of the same drum. Water citizenship stems from the conceptualization of environmental citizenship where citizenship has “something to do with the relationship between individuals and the common good” (Dobson 2007, p. 280). According to Dobson (2007) environmental citizenship is an intergenerational balancing of individual and collective rights and responsibilities as a matter of natural justice (p. 280). He theorizes this notion of citizenship falls within the republican rather than liberal tradition of citizenship as it accounts for responsibilities individuals have to the collective (Dobson 2007; Bell 2005). Paerregaard et al. (2016) was one of the first studies to extend Dobson’s (2007) theoretical

framing to water within an Andean context in Peru and additional studies have also referred to this concept as hydrocitizenship (Sarmiento et al. 2019). However, these frameworks examined water citizenship within a non-Indigenous water management regime exploring how citizens and communities relate to water within a settler-colonial worldview.

In the same way that environmental citizenship has been used to “define the role of the citizen in pursuit of sustainability” (Kennedy and Boyd 2018), Indigenous water citizenship is being used to define Indigenous pursuits for water diplomacy and governance as defined through Indigenous political, spiritual, and cultural contexts. The underlying assumption is that Indigenous citizens have unique relationships to water and their participation in water decision-making is necessary for Indigenous water justice. I argue that Indigenous water citizenship recognizes a boundary for inclusion among Indigenous nationalisms of the Great Lakes that fostering a connection to water and protection of water are paramount to inclusion in Indigenous political communities (Jensen and Papillon 2000). Indigenous Nations are further defined by the acts of water citizenship undertaken by members of the political community such as water walking, ceremonies and declarations. Citizenship is also inherited through notions of decent and intergenerational transference of water knowledges connected to distinct waterscapes not an inheritance based on the western social construction of race (Scott 2004). Indigenous water citizenship is the process by which cultural, spiritual, political, economic and territorial integrity of Indigenous Nations is maintained. As Chief Matthew Coon Come, former National Chief of the Assembly of First Nations, states:

We have discovered that people who have lost their family lands are at great risk of losing their traditions and values. The activities and knowledge that bind a family become a painful memory when the land is gone. We have discovered that our way of life, our economy, our relationship to the land, our system of knowledge, and our manner of governance are an interlinked whole. Remove us

from the land, and you destroy it all. We are then left with social disruption, suicide, epidemics of disease and violence, and loss of hope. (Coon Come 2004, p. 158)

As Indigenous Peoples we are not awaiting a climate apocalypse we have been surviving it since colonization of Turtle Island began more than four centuries ago. Through our resilient survival tactics, Indigenous Peoples have identified the cultivation of water citizenship as integral for our survivence. In this way Indigenous water governance cannot be separated from water citizenship because they are “an interlinked whole” (Coon Come 2004). This study puts forward what is the first (to our knowledge) Indigenous conceptualization of water citizenship through the lens of the water walks and Indigenous water diplomacy and governance emerging from Turtle Island. In order to achieve positive outcomes for the water, Indigenous Peoples must be able to teach and use their water knowledge for decision-making. Therefore, Indigenous water citizenship includes the non-activist actions for water protection in the public sphere that fulfill Indigenous water responsibilities and ensure the transmission of Indigenous water knowledges to future generations.

The water walkers are an example of water citizens who utilize Indigenous water knowledges to restore their connection to water, care for the water, and inspire others by sharing water teachings. The sense of belonging and collective identities water walkers form are a part of the citizenship process Jensen and Papillon (2000) identify as integral to political boundary setting. Indigenous water governance is a cooperative effort between men and women that embraces diverse but balanced gendering of water citizenship roles intended to foster diplomatic relations with the water. Men not only participate in water walks, but they are integral to fostering the previously described balance sought during the walks. Accordingly, an Indigenous water citizen is someone who works daily to restore their natal connection to water by fulfilling their political, cultural, and spiritual responsibilities to the water while considering the impact

their choices will have on the water for future generations. Water citizenship is different than environmental activism because as water citizens, Indigenous Peoples exercise their rights and responsibilities to maintain their relationship to water as kin. The water walks are not demonstrations or defined protest activities of environmental organizations (Dono et al. 2010). They are a collective of water protectors walking for the water in prayerful pursuit of its healing and well-being as part of their rights and responsibilities as the original peoples of Turtle Island. In the political resurgence of Great Lakes Indigenous Nations and communities water diplomacy is the basis for understanding transboundary Indigenous water governance and practices of Indigenous water citizenship including the water walks.

Methodology

Multiple methods were used to conceptualize Indigenous water governance as emanating from the core principle that water is life enacted through water diplomacy and citizenship among water walkers. Data collection included a mixed methods approach grounded in Indigenous methodologies (Smith 1999; McGregor 2018). This study consists of an online water walker survey ($n = 94$), semi-structured interviews ($n = 18$), and participant observation conducted between September 2017 and December 2018. The largest water walk – Great Lakes Water Walk - by count of attendees and not distance (approximately 2,000 walkers) was held on September 24, 2017 along Lake Ontario. There are thousands of water walkers globally and nearly 4,000 members of the *Water Walkers United* Facebook group where much of the online organizing for the water walks occurs and through which the survey was shared. The survey was created in response to a request on Facebook from Grandmother Josephine Mandamin for research support to count how many water walks have occurred since she began walking for the water in 2003. After initial consultations with Grandmother Josephine and Joanne Robertson,

key organizers for the water walks, a questionnaire was drafted and submitted for review by water walker collaborators. Revisions to the questionnaire were made based on feedback from collaborators and the survey instrument was finalized. The survey was disseminated through various water walker Facebook groups (a key forum), shared by research collaborators Joanne Robertson and Josephine Mandamin via Facebook and email. We also developed a Facebook page dedicated solely for sharing information on the survey including how to participate and as a portal for sharing results. A research ethics certificate for the project was granted by the McMaster Research Ethics Board, Hamilton, Ontario, Canada (MREB protocol # 2357).

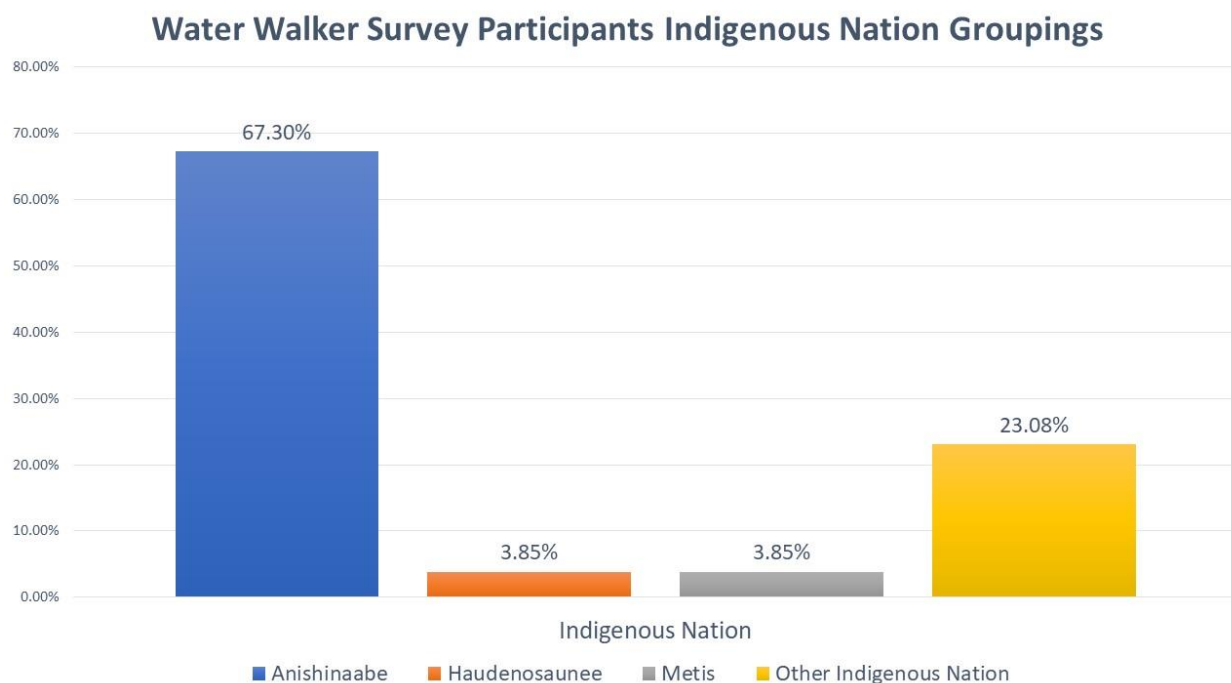
The author's participant observation included participation in five Great Lakes water walks during September 2017 to September 2018. Additionally, the researcher obtained letters of support for the research from organizers of the Hamilton Harbour Water Walk and the Great Lakes Water Walk both held in 2017 in southern Ontario around Lake Ontario. Conversations with water walk organizers early in the project guided project refinement so the objectives would be responsive to the lived experiences and knowledges of water walkers. Additionally, the networks built between the researcher and water walk community later assisted with project survey dissemination.

Participants and supporters of water walks were invited to participate in an anonymous survey and participate in an exit poll identifying if they would like to participate in a follow-up interview. In addition to invitations via email and social media namely Facebook (preferred method identified by research collaborators), flyers were also distributed at a Water Walker event honouring Grandmother Josephine at the University of Toronto in November 2017. To our knowledge this is the first survey of water walkers to be conducted and the resulting dataset of water threats, protection efforts, and motivations will be archived with the research partner -

Mother Earth Water Walkers. Interview participants' data were not linked to their survey data. Women, men, and non-binary persons were featured in the interviews and surveys. The majority of survey participants had participated in water walks as a water walker (84.04%, n = 79) while others fulfilled additional roles during the walks such as firekeepers, support vehicle drivers, etc. and they did so for a variety of reasons.

Our survey sample of 94 adults ranged in age from 18 to 80 with the largest number of respondents (29.79%, n = 28) ranging in age from 50-59. A majority of participants identified as female (81.91%, n = 77) and Indigenous (60.64%, n = 57). Survey participants who identified as Indigenous claimed the following Indigenous national affiliations: Anishinaabe (67.03%, n = 35), Haudenosaunee (3.85%, n = 2), Métis (3.85%, n = 2), and Other (23.08%, n = 13), where “other” accounts for Indigenous Nations not represented in the previously mentioned polities such as Mi'kmaq (See Figure 2).

Figure 2. Water Walker Survey Participants Indigenous Nation Responses



In consultation with water walk collaborators it was identified that the quantitative methodology of an online survey may be a barrier to the project as some water walkers may be distrusting of university data collection methods given past historical harms and violations of Indigenous data sovereignty (Kukutai and Taylor, 2016). As such, the research team agreed that interviews would be an important *Debwewin Izhichigewin* (truth seeking methodology) to enhance our understanding in addition to the survey responses. Also providing an opportunity more aligned with Indigenous methodologies for “story sharing” and knowledge mobilization (McGregor 2018; Archibald 2008). The water walk participants interviewed were all consulted on cultural protocols for obtaining consent prior to interview. Based on interviewees’ preferences, consent was either obtained verbally or with a written consent form and all participants were offered wampum and tobacco as gifts for their knowledge sharing. To maintain Indigenous ownership of the knowledge shared and not lose connection to distinct Indigenous relationalities and nationalisms, participants’ Indigenous identity was included if available (Anderson et al. 2013). The researcher travelled throughout the Great Lakes region in 2018 conducting in-person interviews where possible, remaining interviews were done by phone or skype especially given some interviewees were located outside of the Great Lakes region and Turtle Island (North America).

I conducted 18 in-depth semi-structured interviews with water walkers and used a combination of purposeful and snowball sampling (Patton 2002) as described above to identify survey and interview participants. Interviews were limited to individuals that had experience with the water walks no additional parameters were established to acknowledge a process of *Debwewin Izhichigewin* (truth seeking methodology). I developed a general interview guide (See Appendix H), but per the nature of the semi-structured and storywork approaches the depth

and scope of discussed topics varied given the expertise of each participant. The focus of all interviews was to expound on the survey and learn more about participants motivations for participating in the water walks to better conceptualize water citizenship and diplomacy.

Interviews were analysed using an iterative grounded theory approach whereby I as the researcher immersed in the data near water to draw on that natural connection explored the associations and distinctions among themes arising in the data (Strauss and Corbin 1998). The interviews were recorded, transcribed and manually coded for thematic analysis. Interview transcripts were individually and collectively interpreted to deduce individual as well as collective water knowledges to ensure proper attribution to Indigenous nations. I began by developing an open coding system through which I grouped the data under conceptual names applicable to the described phenomena. For example, all transcript excerpts that discussed water and its connection to birth and maternal responsibility were coded together under the topic of “Water is our First Medicine”. I allowed for the debwewin (truth) contributions of participants to organically saturate our understanding of Indigenous water citizenship and diplomacy formation not confining participants knowledges to an already existing framework given that studies on water walking are very limited. This is not the only approach that could have been done to analyse the data but is the approach that aligned with the research partners intention for gaining knowledge, cultural protocols, and a desire to build consensus or come to one mind through a process of Debwewin Izhichigewin (truth seeking methodology).

Results

The results presented here are those most salient to the water walks as a performance of Indigenous water citizenship, providing critical insights into gendered dimensions of Indigenous water knowledges, water walker motivations for participation in water walks and perceived

threats to the water. The analysis of the survey and interview responses identified the following salient themes across the datasets supporting our understanding and framing of Indigenous water citizenship: (1) “Water is Our First Medicine”; (2) Colonialism disenfranchised Indigenous women; (3) water is threatened; (4) water walker motivations; (5) technology for collective action; and (6) definitions for good water governance. Furthermore, the identified salient themes provide political, governance, spiritual, and cultural context for Indigenous water governance, diplomacy and citizenship in the Great Lakes. The results have global implications for meaningful Indigenous citizen participation in water decision-making and dismantling of oppressive settler-colonial modes of water governance.

Water is our First Medicine

A recurring Indigenous water knowledge discussed by water walkers was the concept that water is alive and is the first medicine that nurtures us in the womb as human beings. A Mi'kmaq Grandmother and water walker communicated,

“Water is our first medicine. When we are in the womb we are surrounded by water and we can drink that water and breathe the water and we are the water. It becomes us. We are over 50% water. So that water is our first medicine is to acknowledge that we are water and that when we are formed in the womb we are surrounded by water and we're formed in the water, we become the water. And when we are ready to be born the water is what comes first and we're born into that water into this world. So that to me is the teaching why it's so important for us to honor the water, respect, love, and thank the water for our life. Water is Life.”

Water scholars have highlighted the importance of this ontological centering for understanding that Indigenous water knowledges may be diverse across Turtle Island, but recognition of water as living and having rights in itself is a common trait expressed with the shared sentiment – water is life (Chiblow 2019; Wilson et al. 2019; Anderson et al. 2013; Mitchell 2018; Chiblow

and McGregor 2014). As the Grandmother notes, our relationship to water is intricately connected to our birth and it is a relationship that lives on past birth given the connection between the amount of water in the human body and the amount of water on Mother Earth. Another water walker shared that the relationship to water can be maintained through song and prayer and in return the water will continue to offer itself to humanity for cleansing and healing. A water walker offered the following insight into her water citizenship,

“I sing to the water. There’s a song that I sing to the water and it’s the water song. It’s called the water song. Nibi Song. I sing to the water my prayer to the water. Whenever I’m by a river or a lake I will sing the song during ceremonies. I pray for the protection of the water and that all people are blessed by the water. I give thanks to water when I’m showering and I pray in the shower. I give thanks to the water when I’m making coffee or tea doing laundry, gardening, its continual.”

Continuity was an important principle in the water protection actions of water walkers interviewed. They emphasized that the water knowledge they have received has awakened them and is something they use daily, share with others (especially younger generations), and commit to restoring their connection to the water through water walks, ceremony, prayer, song and other actions.

Colonialism Disenfranchised Indigenous Women

Participants expressed gratitude for the awakening of the sleepy water knowledges through the water walks and to Nokomis Josephine Mandamin and the other Grandmothers for picking up their bundles to do it for water and share their teachings. The legacy and continued acts of colonialism against Indigenous women, the keepers of water knowledge, were noted by many of the survey and interview participants. A Mi'kmaq Grandmother and water walker commented,

“As survivors of residential schools a lot of our teachings were put aside for many years, a few generations, and what we’ve been doing in the last ten years is to revive those cultural teachings and expand on the knowledge that comes from our cousins in Anishinaabeg territory. Our role here as Mi’kmaq, in Mi’kmaq territory, is to bring those teachings back and teach them and to practice those teachings and pass those down, which is what we are doing as grassroot Grandmothers.”

Settler colonialism stripped Indigenous women of their franchise rights, severed ties to the land and waters, pushing water knowledges into sleepy comas, awaiting NibiKweag (Water Women) with the spiritual fortitude to reawaken them. For many non-Anishinaabe Indigenous water walkers who share diplomatic relations and migration histories, such as the Mi’kmaq, the cultural teachings of their Anishinaabe cousins have led to increased water citizenship and reclamation of water responsibilities by Mi’kmaq people.

Water walkers also discussed how they believe the violence against the land and waters are connected to the violence against Indigenous women. A Grandmother commented, “There’s environmental racism against the land and that’s connected to the treatment of women. Mother Earth and women in general, but especially Indigenous women.” In Canada and the United States, there is an epidemic of Missing and Murdered Indigenous Women that Indigenous legal scholars, such as Sarah Deer (2009) have linked to Anglo-settler law and its devaluing of Indigenous women. According to Whyte et al. (2018) settler colonialism and patriarchy are the roots of the male-dominated governance systems that exist across Turtle Island and have led to the exclusion of Indigenous women in water decision-making. However, Indigenous women are resilient, and the water walks are a mode of reclamation and exercise of Indigenous water knowledges. Indigenous women are on the frontlines of water conflicts globally standing up as water citizens to protect the water. An Anishinaabe Grandmother provided the following reflection on the role of women and water citizenship,

“The Indigenous women are going to stand up because we hold the balance, we’re the faith keepers of the generations yet to come. We will take a beating. We will take criticism. We will take everything that’s thrown in front of us because our ancestors did it for us and we’re going to do it for our children. That’s just part of our lineage.”

Threats to the Water

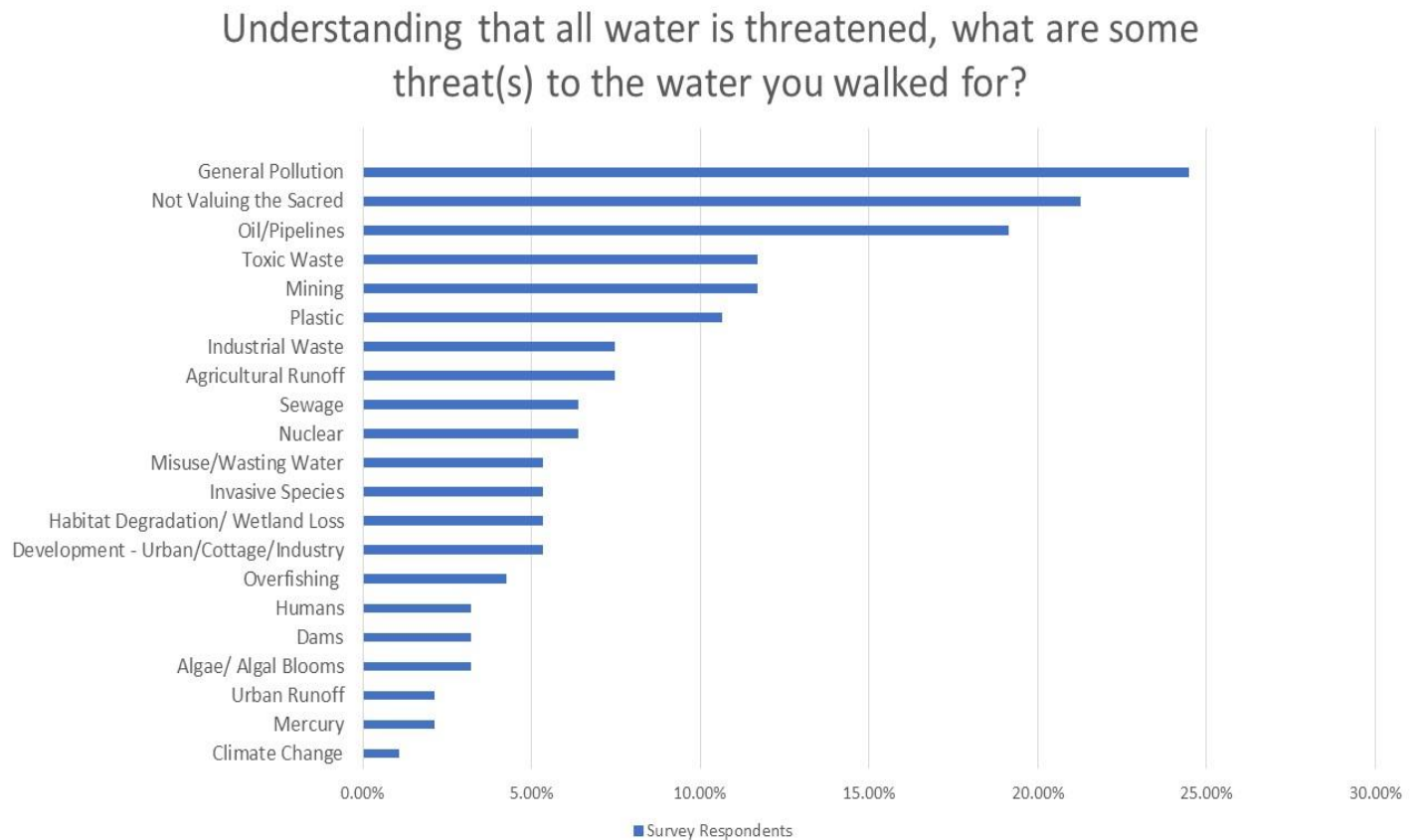
Early conversations with research collaborators, Grandmother Josephine and Joanne Robertson, for survey design included a powerful discussion on the state of the water, its health and well-being. In settler-colonial water regimes, water is generally not perceived to be unhealthy or threatened unless there is an impairment to human use of the water. However, within Indigenous ontology and epistemology water is threatened if any life within the water or the water itself is suffering. Emerging from this research conversation was the understanding that all water is threatened in large part due to humanity’s failure to be good water citizens as instructed by Indigenous laws. As such, we did not ask survey participants if the water was threatened, but probed deeper to understand their experiences and identifications of current threats to water. As one water walker noted, as Indigenous Peoples we have “the owner’s manual for this place” but it is struggle for settlers and newcomers to these lands to recognize they can learn from us. Describing the challenges to water citizenship an Anishinaabe Grandmother communicated,

“The biggest threats are ignorance and apathy. The ignorance to not know what’s happening in your back yard. And apathy to know what’s happening and you still don’t do anything. Those are the biggest threats.”

Survey participants were asked to respond to an open question asking “Understanding that all water is threatened, what are some threat(s) to the water you walked for?” Survey respondents could write in as many threats as they would like to identify. Open-ended survey responses often

provide an opportunity for survey participants to explore a deeper dimension of their experience (Sproull 1988). A word-based method of textual analysis of survey responses identified co-occurrence of word units to cluster concepts (Ryan and Bernard 2000). First a list of all the unique words in the survey question responses was created and then a counting of the number of times each occurs for a word frequency list of threats to the water. Similar words such as “oil” or “pipeline” when content meaning was further analyzed led to clustering. Additional examples of cluster concepts include “not valuing the sacred” where word co-occurrences included “respect” “sacred” “sacredness” “valuable”. The top threats to the water survey participants identified included: (1) General (Unspecified) Pollution (24.47%, n = 23); (2) Not Valuing the Sacred (21.28%, n = 20); (3) Oil/Pipelines (19.15%, n = 18); (4) Mining (11.70%, n = 11); (5) Toxic Waste (11.70%, n = 11); and (6) Plastic (10.64%, n = 10) (See Figure 3). Similar to the views expressed by the Grandmother, survey participants recognize that there is a crisis in how different water actors value water. The relegation of water to the realm of the profane is a direct affront to Indigenous water knowledges that value water as a sacred life-giving force and first medicine.

Figure 3. Water Walker Survey Participants Responses on Threats to the Water



Source: Leonard, Kelsey. (2018). *Water Walker Survey*. [Data Set]

Water Walker Motivations

Threatened waters cannot be the only motivating factors for participants of the water walks. If that were true then water walks would be born out of a place of fear; but, in speaking with water walkers they describe the walks as generating from hope and resilience. Our study hypothesized that the success of water walks in transmission of Indigenous water knowledges and the growth of water citizenship mobilization can be attributed to deeper ontological and epistemological motivations and pursuits. Initially, the water walks are often mistakenly interpreted as Indigenous protests, which as Clark (2014) highlights can be attributed to settler-colonial racism and racist stereotypes and tropes of the Indigenous protestor often portrayed by

mainstream media. Furthermore, existing social movement theory does not adequately account for Indigenous practice in the public sphere as there have been very few studies of social movement theory within a North American Indigenous context let alone on Indigenous water justice struggles in the Great Lakes region (Gedicks 2004). But, as one AnishinaabeKwe water walker communicated,

Water is important to all of us and the people who are doing water walking or water prayers or water protecting or any of the people who are doing that are doing it from a place of love and concern. Not to be protesting.

This response exemplifies the deeper motivations many survey participants expressed for why they pursue water walking as a mode of water citizenship. Participants were asked the following question: “Why do you walk for the water?” The greatest number of participants (n = 25) responded because “Water is Life”. Additional motivators identified by survey participants included: Intergenerational Responsibility; Spiritual Responsibility; Raising Awareness of the Sacred; Restoring Connection to Water; Love for Water; Responsibility to Mother Earth; Female Responsibility; Identity; Healing; Reciprocity; and Connecting to Community (See Table 1).

Table 1. Water Walker motivations from survey respondents.

Motivator	Illustrative quote	Frequency of Responses (n)
Water Values - Water is Life	"Water is life and we are water ourselves so we must care for it like we take care of ourselves." "I am Water and Water is life, my spirit resides in this shell of a body that carries water and depends on this element for nourishment to exist. Without water, there would be no me while I reside here on Mother Earth!"	25
Intergenerational Responsibility - Ancestors & Future Generations	"In order to honor the water and the generations who have passed these teachings to us and for my Grandchildren and all children of the next generations." "It is life, we need that water for our future generations."	22
Spiritual Responsibility/ Prayer/ Ceremony	"It is our responsibility and blessing to pray with the nibi." "Sacred ceremonial practice that I completely believe in and honour my sacred responsibility ..."	19

Awareness/ Educate Public/ Understanding Sacredness of water	"Create awareness of the need for clean water. Water has a spirit and needs to be recognized and appreciated." "To bring awareness to the water and its perilous state." "Bring awareness to the sacredness of water"	19
Restore Connection to Water/ Kinship/ Relationship	"To build a better relationship with water, to acknowledge our reliance on water" "I walk for the Water because I accepted a responsibility and a relationship with her ... I heard Grandmother Josephine in 2014 speak very clearly about NOT waiting for her, but rather developing our own direct and personal relationship with Nibi. The next time I visited Nibi I really opened up my heart and let her know I was willing to listen to her and do my best to learn what she needed from me."	15
Love for Water	"Because I love it. It is a part of me and i am a part of it." "Love. Water is the most pure expression in our understanding the magnitude of love. This is the work I am born to."	12
Responsibility to Mother Earth/ Respect/ Honor/ Thanks	"Because it brings us together as one and it reminds us of our responsibilities to mother earth" "To honour Mother Earth and her give thanks to her for all that she offers."	10
Female Responsibility /Support Women	"I am Anishinaabe Kwe it is my duty to protect the water." "I walk for the water because my teachers, Bawdwaywidun Banaise and Josephine Mandamin have taught us and demonstrated that as Ojibwe women and Midekwe, our role is to protect and stand up for our Nibi. I love our Three Fires Midewiwin Lodge and my teachers, and I love our water. Three Fires Lodge teachings are that WATER IS LIFE so as Midekwe, I protect, love and stand up for our water."	9
Identity - Water Protector/ Harvester/ Fishermen	"Because I'm a fisherman, gitchee gumii is how i make a living, we have the most to lose." "I have always been drawn towards the water. My earliest memory is admiring the water, smelling clean water. My spiritual name has nibi in it."	9
Connect to Community/ Support Friends/ Allyship	"To connect with water and fellow water walkers." "The experience of being part of a group and carrying the water together is extremely important and powerful for me. I treasure both my relationship to the water AND to the community of water walkers."	6
Healing	"I do it for my own healing and the healing of the water." "Nibi heals and our prayers, love and words heal her."	5
Reciprocity - Give back to water	"Water gives a kind of peace of mind that things are going to be alright. It is time to give back to someone who has given me so much..." "I want to give back to the land and life that sustains me, and I have an affinity to water as I grew up in or on our pond, playing with tadpoles, eating fish I caught, watching kingfishers hunt."	3

The results indicate the motivations for individuals to participate in water walks vary, but also center around the original teaching from which Indigenous water citizenship, diplomacy and

governance ripple out that “Water is Life” (as identified earlier in Figure 1). An Anishinaabe Grandmother highlighted how everyone has their own motivations for water walking,

“You walk for something. We gather people for a common cause. It’s like a pilgrimage. So, the people gather, and the more people gather the stronger prayers and songs will be so the Creator will hear us and also people might see and become aware of how important the water is. It starts within the family and it starts within the children. The children will help to teach us how we look at the water and how important that water is.”

In the same way that there is no singular “right way” to water walk there is no singular motivation for enacting water citizenship through water walking. The intergenerational transmission of water knowledge and the fulfillment of responsibilities for caring for the water as noted by the Grandmother are key to enacting water citizenship and creating spaces for Indigenous participation in water decision-making all of which should start with children the future water leaders. Furthermore, some water walkers are motivated by a spiritual calling for peace, as one Grandmother shared,

“I’m trying to accomplish world peace. If we could truly treat the water with love and kindness and respect and then we could treat ourselves that way with love and kindness and respect, because after all we are the water. Our bodies are composed of mostly water. If we could treat ourselves with love, kindness, and respect then we could treat other people with love, kindness, and respect indeed we could achieve world peace and I think we have a ways to go but we all should have a dream and a vision and I guess that’s mine.”

Can you SPOT the Technology?

A key finding of the survey was the influence of technology for mobilization of water walkers for organizing the water walks. Survey participants were asked “Where did you learn about the water walks?” Participants responded that if they did not learn about the water walk from another water walker or elder, they learned about the water walks through social media,

namely Facebook (45.74%, $n = 43$). Survey respondents' identification of Facebook over other social media and communication methods (such as Twitter) aligns with the pre-identified recruitment method of my research collaborators and the increased communication role of Facebook in Indigenous water movements, such as Standing Rock and Idle No More (Burrows 2016; Dhillon and Estes 2016; Levin and Woolf 2016; Wood 2015). There are numerous water walker groups on Facebook, where water walkers gather virtually to enact Indigenous water citizenship. The largest water walker Facebook Group identified by survey participants is Water Walkers United, and it has over 4,000 group members. Water walkers are able to share water walk updates online, post videos and pictures of the walks, and build a community of water citizens that embrace Indigenous water knowledges.

Another technological innovation that has aided in the success of the water walks as identified by interview and survey participants is a geolocation tracking device SPOT. Prior to SPOT, water walkers had difficulty finding each other during the extended water walks that often can go for more than 30 days and cross thousands of miles/kilometers. In 2011, for the Four Directions Mother Earth Water Walk, Nokomis Josephine and Joanne Robertson introduced SPOT to the water walkers. SPOT is attached to the water walkers copper pail and uses satellite technology to keep the water walkers connected pinpointing their exact location (See Figure 4). The SPOT geolocation device is shared among water walks across Turtle Island that request to have the support from the device manager Joanne Robertson during their walk. The device is expensive, so sharing is an economic necessity but also promotes relationality and reciprocity among water walkers. Joanne can monitor the device remotely via satellite from wherever the walk may be occurring. SPOT not only helps others to join walkers in real-time through the live feed updates but serves a needed safety measure to locate walkers in the event of an emergency.

The technology allows for greater consciousness raising and for more people to participate at any point in the walks for an hour, a day or the whole walk. Previously, not being able to find the water walkers meant that if you did not join them at their morning starting point you would likely not be able to locate them easily. SPOT also provides a mechanism for water walk supporters who for various reasons may not be able to walk to connect digitally. The use of various technologies to advance water citizen goals for the water walks is an inspiring example of Indigenous digital sovereignty and innovation.

Figure 4. Geolocation SPOT Device on Water Walk Copper Pail



Good Water Governance

Interview participants were asked to explore how they would define good water governance as informed by their participation in the water walks. A Mi'kmaq Grandmother and water walker communicated,

“Water governance. We have our own laws, natural laws. We have our own Indigenous laws regarding our connection and our responsibilities and our relationships with Mother Earth and the water and everything around us. When I look at the places where they’ve recently gave Mother Earth rights and where they’ve actually given rivers and waterways human rights that’s what needs to happen across the land. So, when we talk about governance here. It’s our responsibility, our responsibility as Indigenous Peoples to protect the water and to give the water that protection, because it has spirit. It is alive. And it sustains us and we protect that water. It’s what needs to happen across the land. It’s not a resource to be bottled up and sold.”

Earlier water governance was broadly defined as the process by which decisions about water are made including the objectives for water allocation, use and protection. However, the Grandmother underscores that Indigenous Peoples have not been a part of the objective setting in many instances, because if we were allowed to participate in the decision-making, our Indigenous laws would grant legal personhood to water with rights and responsibilities for protection. Canadian legal scholar Aimée Craft (2014) has posited that Indigenous Knowledge Systems conceptualize water as not only a living entity, but that water has legal personality under Indigenous Law. In 2017, New Zealand granted legal personhood to the Whanganui river, while in Canada a bill was put forward by a member of parliament for recognition of legal personhood for the Great Lakes (O’Donnell et al. 2018; Ruru 2018; Bill 1030 Navigable Waters). Granting legal personhood to water was a common response among interviewees as to how they would define good water governance. Lastly, they noted that good water governance means protecting the water for future generations.

Discussion

The water walks are an enactment of Indigenous water diplomacy that can be seen as an Indigenous women’s movement led by Indigenous Grandmothers who teach and live out Indigenous water citizenship. Although an Indigenous women-led movement it is balanced by

welcoming and participation of all genders. The water walks have created a process to generate transformative learning spaces for enacting and teaching Indigenous water citizenship. The enactments of this water citizenship through the water walks vary but may include song, prayer, ceremony, offerings, menstrual and birth rites of passage, as well as walking to reconnect in relation to the water. As Leanne Simpson (2013) tells us Indigenous diplomacy, including our water diplomacy, is rooted in “Spiritual and social practices such as storytelling, the oral tradition, ceremonies, feasting, and gift-giving are designed to bond people together toward a common understanding”.

The ability for the water walks to shape local and global understandings of societal and individual relations to water is a necessary process of transformative learning to ensure Indigenous water citizenship thrives. According to Hall (2004) “transformative learning” is critical to environmental action and refers “to the process of learning, whether in formal or non-formal education settings which is linked to changing the root causes of environmental destruction or damage. This includes changes in relations of power, gender relations, and other patterns which allow for a healthy relationship with the Earth” (p. 171). As one Anishinaabe Grandmother commented,

When we’re carrying the water it’s to speak to the spirit of the water. That’s what we’re doing. And if we raise some awareness or publicity around it fine, but that’s not the purpose. The purpose is to speak to the spirit of the water, because that’s where the power lies.

Fundamentally, the water walks are attempting to reconnect humanity with the water so that further desecration and destruction of this sacred life force ceases. Hall (2004) further identified the following nine “indicators” for determining the efficacy of the environmental learning process: (1) the development of new practices; (2) increased participation or mobilization; (3)

changes in gendered roles or behavior; (4) linking between local and global contexts; (5) production or recovery of knowledge; (6) new legislation or policies; (7) increases in self-sufficiency and bio-regionalism; (8) increases in cooperation; and (9) existence of new alliances and networks (p. 186-87). Each indicator is a step in a larger process of decolonization for Indigenous Peoples as we reclaim ancestral knowledge, reconstitute traditional kinship networks, and build new societal institutions to dismantle existing oppressive water regimes and ongoing water colonialism (Lowan-Trudeau 2017).

Through walking, prayers, ceremonies, language, songs, and stewardship the water walks have developed new practices for Indigenous water citizenship action. The water walks have helped individuals and communities relate to water differently, from not leaving the tap running to advocating against oil pipelines that would endanger sacred manoomin (wild rice). In describing the new practices water walking inspires, a water walker commented,

You can go to your water and you can sing to her and you can have ceremony with her and even if that's the little piece that they remember and they continue to do then maybe then they teach that to their kids and that this is a normal way to be Anishinaabe to interact with the water in that way - that's huge.

These new practices are incremental but have exponential potential for changing societal attitudes towards water to give greater recognition of its personhood and kinship with humanity rather than solely exacting its economic resource valuation.

There has been an increase in participation and mobilization of the water walks since Grandmother Josephine and the Mother Earth Water Walkers began walking in 2003. Since the first water walk more than 200 water walks have been held across Turtle Island, and the world, with thousands of water walkers globally (Mother Earth Water Walkers; Woodworth 2018). In 2018, to honor the work of Nokomis Josephine, Peter Cameron, a teacher at St. Elizabeth's

School in Thunder Bay, Ontario created the Junior Water Walker program, which is a global initiative for educational classrooms to select a body of water in their area to “learn about, adopt and help protect” (Cameron, 2018). The water walks now have global participation and mobilization is organically growing across all ages, and among Indigenous and non-Indigenous Peoples.

Furthermore, the water walks have also provided a space for Indigenous women to reclaim their roles and responsibilities for the water. During the water walks, gender roles and responsibilities are able to be reclaimed in many instances where men and women previously felt disenfranchised from their water citizenship based on their Indigenous teachings. A Mi'kmaq Grandmother and water walker communicated,

Our women are the caretakers of the water. Our responsibility our role is to teach and pass down these visions and pass down these cultural ceremonies. Our teachings and our ceremonies that came to us it's about our role as women, as carriers of life, we've been given that gift to bring life forward and with that gift we were also given a responsibility to protect the water. Because we are water. When teaching about our role as Grandmothers and as women it's very important.

The water walks allow for the free expression of Indigenous women in their reclamation of their roles as caretakers for the water. This is a powerful deconstruction of colonial modes of domesticity of Indigenous women that removed them from the land and water and in many instances stripped them of their ability to receive and pass down women's teachings on water citizenship. The Grandmother water walker further commented on the removal of women from water governance saying,

They don't even speak about the Grandmothers anymore. So, now our role today is to revive those things and to push for that recognition that women do have a role and have always had a role whether it's sanctioned by any government or agency we just continue to work and do what we have to do to teach about that and revive. It's who we are. It's our responsibility as women.

Indigenous women's water citizenship enacted through the water walks has been a powerful force in dismantling oppressive colonial structures aimed at disenfranchising their water rights.

A key teaching of the water walks is that water connects us all. In this vein it is not surprising that the water walks are centered on local contexts but have a global reach connecting Indigenous Peoples and communities around the world through our shared understanding of the sacredness of water. Water walks have been held all over the world including Brazil, Belgium, Japan, and South Africa. Additionally, the Junior Water Walker classrooms extend outside of Canada and the United States to Europe, Central America, and Asia. Many of the water walkers expressed an understanding that water is the “life blood” of Mother Earth and that it's not surprising the water walks originated in the Great Lakes. As one Anishinaabekwe states, “The Great Lakes are the heart of the continent. If you think about that structure, if you want to talk about it as Turtle Island that's her heart. There's no question in my mind that we need to protect the heart.” The Great Lakes as the heart of the continent are important to protect and they connect the planet through an intricate hydrologic system of lakes and rivers all the way out to the ocean. The water is the physical ecological link between the local and the global. The water walkers often say they aspire to “be like water” and it is clear that the transformative learning process they have created is making that linkage.

Colonialism often severed the transmission of Indigenous knowledge needed for learning water citizenship by Indigenous Peoples. Instances of water colonialism include residential schools, prohibition of Indigenous spiritual practices, taking of land and water for hydro development and more (Robison et al. 2018). The water walks have led to a recovery of that knowledge. Importantly, Indigenous Peoples recognized that this knowledge is not new, nor has it been lost, rather as Hall (2004) notes it is “sleepy knowledge” that is finally able to be

awakened (p. 177). One of the Anishinaabe Grandmothers discussed the impact of colonialism on Indigenous women's water knowledge,

All of these teachings were forbidden for a long time, so a lot of these traditional teachings were forgotten there only coming back now for Native women to take on their roles again. So, they're sharing the teachings to other women who want to help or want to be part of the water movement. Because we believe that water shapes us ... and when you're feeling bad the elder women usually tells us to go and sit by the water. And that water spirit will take that feeling of sadness or hurt away ... They tell us that the water really shapes us and heals us.

The water walks enable not only the recovery of knowledge through Indigenous collective action, but also the production of knowledge as water walkers share concerns over threats to the water, motivations for water walking, and opportunities for future water protection.

Water walkers have also contributed a powerful voice to ongoing debates on legislation recognizing the legal personhood of water, including granting personhood to the Great Lakes. Bill 1030 was initiated by water walker Edward George in collaboration with other water walkers and protectors advocating for recognizing the Great Lakes as "Living Entities". Many of the water walkers have also attended the gatherings that led to drafting Indigenous water declarations such as the Chiefs of Ontario (2008) First Nations Water Declaration and Treaty #3 Water Declaration (2019). Water declarations are Indigenous policy instruments for articulating Indigenous epistemologies of caring for water and defining objectives for decision-making under Indigenous water governance. One Grandmother water walker when asked if she felt the water walks influence decision-makers commented,

Definitely. When you see a Grandmother on the road walking with a bucket of water and an eagle staff people are questioning what that is and what that means and what they are doing. And it's been 15 years that Grandmother Josephine has been working on this and all these walks have happened as a result of her commitment to raise this awareness and pray for the water it's awakened the people and helped the water to heal and kept that prayer going for 15 years. And

everywhere there's people starting to pick that up, pick those teachings up and walk for the water and begin that education in their area, so I really believe that it helped immensely.

The water walks although not designed to influence settler-colonial policymakers have generated greater awareness for policy changes regarding Indigenous water security such as drinking water advisories, mercury contamination, bulk water exportation and other water issues. Moreover, education policy is shifting to better incorporate Indigenous science in school curriculum. The water walks and *The Water Walker*, a children's book on the water walks by Joanne Robertson, are existing teaching tools used by Great Lakes teachers to teach Indigenous water values.

The reclamation of Indigenous knowledge through the water walks has led increased self-sufficiency of Indigenous Nations and communities. Furthermore, the water walks are a realization of Indigenous self-determination and sovereignty through Indigenous water laws. A Mi'kmaq Grandmother highlighted how the water walks have empowered Indigenous Peoples and communities saying they have committed us to,

Stand up for Mother Earth and the Water. It's come at time when Mother Earth is in crisis and has been for a long time...they have awakened everybody of the precious resource that we have and that it's a source of life and that everybody has to take their responsibilities for protecting the water.

The water walks are also a process by which Indigenous communities have been able to exercise agency over their water security through prayer, song, ceremony, walking and other acts of Indigenous water citizenship to restore water diplomacy. Indigenous sovereignty and self-determination can be more fully realized when water diplomacy and the relationship humans have to water is restored. As an Anishinaabe Grandmother explained,

The whole reason for the water walks is simply to help people recreate this primal relationship that we have with the water. Until people can realize that relationship we will continue to pollute and destroy our water ways. So, the water walks when you're carrying that water then you have that relationship. Long ago people had

relationships like that with the water, because when I was a kid, we never had running water. You went and fetched it from the pump or from the well and that was the first thing you did in the morning and the last thing you did at night. And so that whole reason why I continue to walk these rivers is to get people to understand and recreate that relationship and acknowledge that relationship.

The water walks are successfully helping Indigenous Peoples and communities to realize their rights of self-determination protected under international law through the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP 2007). Indigenous legal scholar Aimée Craft (2014) reminds us that with Indigenous water law, specifically Anishinaabe nibi inaakonigewin, “(1) water has spirit; (2) we do not “own” water; (3) water is life; (4) water can heal; (5) women are responsible for the water; (6) we must respect the water; (7) water can suffer; and (8) water needs a voice” (p. 3). The water walks are a physical embodiment and performance of these legal principles and teach Indigenous water laws that are pivotal to the consciousness of Indigenous water citizenship.

The water walks have mobilized Indigenous and non-indigenous peoples to cooperate both in the opposition to the destruction of water and in support of Indigenous water protection practices. A water walker commented that cooperation of Indigenous and non-indigenous people is critical to water protection saying, “More and more people are being affected, it’s not just Indigenous Peoples any more, by environmental racism. This is about all the people that live along the shore. So, the fishermen and the people who own cottages and the people who have businesses and tourism. They all came together.” They highlighted how the water walks have provided a neutral activity for exercising water citizenship that brings together diverse water actors for a common goal – protecting the water. The water walks are not intended as demonstrations or protests, but they often bring together previously unconnected actors who later

use their community connection to water walking to mobilize for water activism based on their shared understanding of water citizenship as taught during the water walks.

Lastly, the water walks have created new alliances and networks of water walkers and protectors committed to ensuring the health of the water for future generations. Some examples of Indigenous-led networks of water walkers that have emerged since 2003 include the Mother Earth Water Walks, Nibi Walks, and Nibi Emosaawdamajig. When asked whether the water walks have created new partnerships a water walker commented,

“We’ve made many friends. We’ve awakened a spirit in other people through our songs, through our teachings, through our role as survivors of residential schools, and in talking about what reconciliation means to us. We’ve gained so many allies, non-Indigenous allies to work with us and to support us in our work and what we do. So, in the last couple years since we started the water walks and fighting against this corporation that wants to pollute our waters. We’ve gained many allies and educated people through the talks that we’ve had as a group, but also as a teacher of culture within the universities, high schools, and groups across Nova Scotia and the Maritimes. We’ve been able to unite people for the protection of water and to teach about the sacredness of water through our ceremonies.”

Ultimately, the water walks have enabled Indigenous Peoples to reclaim old alliances through traditional kinship networks previously damaged by colonialism and create new ones based in peace and friendship with settlers and newcomers to Turtle Island. The water walks not only support connecting to water but uniting as communities in protection of the water. If the water walks are examined through the lens of “transformative learning” and Hall’s (2004) “indicators” they have clearly been successful in communicating a path forward for the fulfillment of Indigenous water citizenship.

Conclusion

For many of the water walkers the walks are not a new form of Indigenous water citizenship, they are a reclamation of old ways. The walks are about reclaiming that original connection that starts in the mother's womb. The transformative learning process of the water walks provides a way of reclaiming Indigenous knowledge passed down through generations of women as carriers of water and those who bring life onto this planet. The walks have been called prayerful action, prayerful resistance, ceremony, but these are foreign words. These words do not exist in the multitude of Indigenous languages that have existed and continue to persist in the Great Lakes. The walks are ancestral knowledge and Indigenous science manifested in each reconstitution of that natal connection.

The data from the survey provided a lens to examine the discursive motivations of water walkers for participating in water walks. The water walkers in our survey are committed to maintaining their water citizenship through water walking. The interviews expanded on the water walker rhetoric to probe deeper into the manifestations of Indigenous water citizenship. Water walkers communicated they believe it is possible for Indigenous modes of water governance, diplomacy and citizenship to share equally with settler hydrosocial epistemologies namely through the education of children and revising the educational curriculums to be inclusive of Indigenous worldviews. This is evidenced by the widely successfully Junior Water Walkers program and its global reach.

However, there are still persistent challenges to Indigenous water governance, diplomacy and citizenship. Namely the domination of European-settler modes of water management and objective setting for water governance threaten the equitable engagement of Indigenous Peoples and Nations. Water walker critiques of existing means of water governance are a critique of the larger underlying colonial mechanisms that continue to shape water futures in the Great Lakes.

Indigenous critiques and aspirations for water governance, diplomacy and citizenship reform are especially important for Great Lakes protection given the dire water insecurity issues many Indigenous Peoples in the region face including drinking water advisories, climate change, aquatic invasive species, emerging pollutants, and more.

Additionally, the role of women in the protection of water needs to be accounted for and supported as they disproportionately bear the responsibility for ramifications of water insecurity including health, economic, and political issues (Anderson et al. 2013; Craft 2014). Furthermore, the analysis reveals that many water walkers do not express solely a personal responsibility for walking for the water but an intergenerational cultural, spiritual and political responsibility to enact their water citizenship in protection of the water for future generations. There is recognition in the collective power and presence of water walkers to come together to reconstitute their connection to the water. Many speak of visiting with the water as it may hold similar relational symbiosis as a grandfather or Grandmother does in our global understandings of the human existence. As such all peoples are seen as not only being the beneficiaries of the water but those who are responsible to ensure its wellbeing.

Many of the water walkers credit Nokomis Josephine Mandamin with inspiring their journey to walk for the water. She and other Indigenous Grandmothers like her have inspired thousands to pick up their bundles, to walk, and “do it for the water”. Perhaps one day soon we will have a National Water Walker Day to celebrate our connection to the water and the values of Indigenous water citizenship the walks teach to everyone who commits to restoring their relationship with the water. The water walks are a transformative learning experience for water walkers helping to awaken “sleepy knowledges” of Indigenous water citizenship restoring the

natal connection to water that every human is born with and as such their responsibility to protect the water because water is life.

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CHAPTER 6: CONCLUSION

The purpose of this doctoral thesis was to examine the ways in which Indigenous water governance is being performed by Indigenous Nations in the transboundary context of the Great Lakes St. Lawrence River Basin. The literature on Indigenous water governance has predominantly been centered within the geopolitical spheres of the Pacific Northwest (Wilson 2014; Simms et al. 2016; Sam and Armstrong 2013) and minimally applied within the transboundary context of the U.S., Canada, and Indigenous Nations here in the Great Lakes (Norman 2014; Norman and Bakker 2016). Given limited literature on Great Lakes applications of Indigenous water governance, this research project aimed to shed light on the Indigenist legal, political, spiritual, and cultural framings of water governance in the Great Lakes advancing recognition of Indigenous resilience in a region of the world known for holding 20% of the planet's surface freshwater resources and to Indigenous Peoples as the Heart of Ohke (Mother Earth). The failures in equity of participation, decision-making authority, and government-to-government relationships for Indigenous Nations in the shared protection of the Great Lakes St. Lawrence River Basin represent water governance crises (Seijger et al. 2018).

Adaptive water governance should include Indigenous Peoples as rightsholders and knowledge co-producers for shared agenda setting and equitable decision-making in the face of uncertainty (Huiteima et al., 2009). The shared nature of the Great Lakes has dictated the creation of transboundary basin agreements between the United States and Canada, as well as between the states and provinces. However, absent from these agreements as signatories are Indigenous Nations. As Chief Dean Sayers, Batechwana First Nation, said at the 2016 Great Lakes Public Forum, "Where's the receipt for the Great Lakes?" The assumption of sole jurisdiction by non-Indigenous actors in the basin is a fallacy and critical to the ongoing governance crisis. The

failure to realize Indigenous Nation equity in GLSLRB governance is also a violation of international customary law under the United Nations Declaration on the Rights of Indigenous Peoples (Robison et al. 2018). Ultimately, Indigenous water governance is grounded in the active resistance of Indigenous Nations to challenge GLSLRB governance norms to build a resilient transboundary basin (Wilson, 2014). As such this research was guided by the following research questions: (1) How is Indigenous water governance performed, supported and contested in the Great Lakes St. Lawrence River Basin? and (2) Why are the Indigenous Nations desired transboundary water governance outcomes for the GLSLRB different than existing processes? These research questions are explored through four mixed method studies that address the following objectives:

- i) To conceptualize Indigenous water governance and the processes by which it is performed in the transboundary context of the Great Lakes;
- ii) To identify the range of Indigenous water institutions transforming settler-colonial water governance to be more inclusive of Indigenous Peoples for objective setting in transboundary water management;
- iii) To examine the values and beliefs of Indigenous Peoples in the Great Lakes related to existing water governance mechanisms and transboundary agreements;
- iv) To explore the process of reclamation of Indigenous water knowledges through water diplomacy and citizenship.

Indigenous water governance research often begins with the false premise that Indigenous Peoples and our Nations are engaging in a process of decolonization. The findings of this research highlight that Indigenous Peoples are not so much concerned with decolonization when performing Indigenous water governance, but rather about restoring our relationship to the

water and to our peoples. Previously, the literature constructed Indigenous water governance as an exercise in the politics of recognition from the settler-colonial state for Indigenous inclusion in existing water governance processes (Roth et al. 2015; Boelens 2009; Coulthard 2014; Corn tassel 2012). However, the findings of this doctoral research indicate that Indigenous Nations in the Great Lakes, many of which fall within Anishinaabe, Haudenosaunee, and Métis nationalisms want their water knowledges to exist parallel and in conversation but not subservient to western water regimes in recognition of Indigenous Peoples inherent water sovereignty, treaty relations, and rights to self-determination. Indigenous water governance is grounded in the principle of Indigenous “survivence” – the capacity of an Indigenous Nation or community to survive stressors to water security through resilience of Indigenous water knowledges, citizenship, and diplomacy for the protection of water for future generations.

Rather than waiting for the settler-colonial state to recognize Indigenous Peoples and our inherent rights, Indigenous water governance recognizes the diminishing role of the colonial state in governing our Indigenous relationships with water as we reclaim our sovereignty through kinship diplomacy and water citizenship. From the collective of understandings within the literature, Indigenous water governance (1) recognizes that water is a living entity; (2) affirms Indigenous and treaty rights; (3) respects Indigenous sovereignty and self-determination; (4) centers Indigenous worldviews; (5) values Indigenous science and knowledge systems; (6) incorporates holistic co-governance models; and (7) fulfills responsibilities to all life and future generations (Craft 2013; McGregor 2014; Wilson 2014; Black and McBean 2017; Simms et al. 2016; von der Porten et al. 2016; Norman 2014; Norman and Bakker 2017; Bradford et al. 2017; Wilson and Inkster 2018). In light of these defining characteristics the following section

summarizes the key findings and contributions of my research and reflects on their implications for transboundary governance of the Great Lakes.

6.1 Findings and Implications

The key contribution of this doctoral research is recognition that Indigenous water governance is not an isolated political process. Instead, like a drop of water, it is the ripple emanating from Indigenous water knowledges reclaimed through Indigenous water citizenship and diplomacy grounded in the belief that water is life. Another way of articulating the contribution of this thesis is using the metaphor of braiding sweetgrass, like Anishinaabekwe scholar Robin Kimmerer (2013). Among Indigenous Peoples of Turtle Island, especially in the Great Lakes, sweetgrass, *wiingaashk*, is a healing medicine that when braided each section represents the interconnectedness of Mother Earth, Father Sky, and the Individual. In this same way water governance is part of the braid formed by diplomacy and citizenship and the braid cannot exist without the other sections. Indigenous water governance in the Great Lakes is not only about the achievements of Indigenous Nations as governments working to protect the water, but the achievements of Indigenous Peoples, such as the “grassroots Grandmothers”, who pick up their bundles every day to ensure the water is protected for future generations.

The thesis presents an empirical case study of Indigenous water governance in the Great Lakes. Furthermore, the findings of the research represent Indigenous Nations and Peoples as problem solvers rather than operating from a position of vulnerability, risk and deficit porn (Reo et al. 2017b). I utilize the framings of Indigenous water knowledges, namely Anishinaabe (Craft 2016; Simpson 2013; McGregor 2018; Craft 2014; Whyte 2017; Reo et al. 2017; McGregor 2014), Haudenosaunee (Hill 2017; Grinde and Iohansen 2016; King et al. 2005; Ransom and Ettenger 2001), and Métis (Teillet 2013), in the Great Lakes to examine the strata of multilevel

governance engagement of these knowledges in transboundary water decision-making in the basin. This case study is important because the first transboundary water agreement in the Great Lakes was not the 1909 Boundary Waters Treaty but the treaties with and among Indigenous Nations centuries prior. The Great Lakes St. Lawrence River Basin is one of the world's largest transboundary water systems that includes over 200 Indigenous Nations with current or historical territories in the drainage basin. In the same way water does not recognize the imagined political boundaries of Canada and the United States these borders, or Medicine Lines as Indigenous leaders have called them, are not recognized by Indigenous Peoples of the Great Lakes. Despite these challenges of territorial sovereignty and politics of recognition, I find that there is breadth of knowledge to be learned from Indigenous Nations who despite ongoing acts of water colonialism continue to embrace legal and diplomatic pluralisms for transboundary governance of Great Lakes water.

Chapter 2 investigates the range of the Indigenous water institutions in transboundary contexts and their transferability to the Great Lakes.. It further examines the obstacles to development of transboundary water governance policies that include Indigenous Nations as equitable decision-makers. Based on my findings, participation is shaped by several factors. First, current institutional frameworks for water governance were not designed by Indigenous Nations and have led to their exclusion (Papillon 2011 citing Pierson 2004). Second, colonial legacies led to divergent federalist systems in the U.S. and Canada and thereby differential recognition of Indigenous water rights (Papillon 2011). Third, devaluing of Indigenous knowledge systems and water knowledges correlates to varied forum selection by Indigenous Nations to assert their roles in water governance in the basin (Papillon 2011 citing Baumgartner and Jones 1993). I trace the history of water colonialism in the Great Lakes and discuss the

implications such ongoing and systemic legacies of settler colonialism have on Indigenous water governance. This analysis suggests that Indigenous Peoples are neglected and underrepresented in existing water institutions in the Great Lakes. As a result, Indigenous Nations are exploring alternative Indigenous water institutions to exercise their sovereignty and scale-up their authority within the basin. Based on the water governance literature and the gap in understanding of Indigenous water institutions this chapter focuses on institutional mapping acknowledging this is a historical process in the Great Lakes. Future work could explore process tracing and path dependency through a theoretical lens of Historical Institutionalism (Thelen 1999); however, such an examination is beyond the scope of this current work.

Chapter 3 contributes to the study of Indigenous public opinion poll perspectives and attitudes towards water governance and protection of the Great Lakes. I focus on the Great Lakes Binational Poll to illustrate the discrepancies in worldviews and approaches for Great Lakes protection as reported by Indigenous and non-indigenous Great Lakes resident poll respondents. The analysis of Indigenous poll responses reveals unique areas for advancing policy and water governance in the Great Lakes to be more reflective of Indigenous worldviews and responsive to Indigenous Peoples' concerns. Furthermore, these findings highlight the ontological mismatch of existing water institutions in the Great Lakes and Indigenous Peoples aspirations for Great Lakes protection. Linking to an overarching finding of this thesis that without radical transformations of existing institutions Indigenous Peoples will be forced to create their own water institutions to coordinate with the International Joint Commission and other transboundary institutions present in the basin. Overall, this study suggests the continued importance of polling Indigenous Peoples separate from non-indigenous populations if we are truly committed to a process of decolonization, reconciliation, and Indigenous water justice.

Chapter 4 contributes to the study of Indigenous water governance within the context of the Great Lakes Water Quality Agreement, Areas of Concern, through an empirical case study, including a nibi workshop, with Walpole Island First Nation. The analysis reveals a complex multilevel governance system with competing worldviews that present barriers for Indigenous engagement in water governance. These findings highlight the importance of Indigenous representation, participation, consultation, and formal roles with equity of authority for water decision-making in the basin. Ultimately, the study finds that a critical failure in the existing water governance institutions in the Great Lakes is the non-recognition of Indigenous nationalism honoring the nation-to-nation relationship in favor of identifying Indigenous Peoples as “stakeholders” lacking autonomy and inherent sovereignty.

Chapter 5 furthers our understanding of the reawakening of sleepy water knowledges by Indigenous Peoples through water diplomacy and citizenship. It ties together the framework of Indigenous water governance (the mechanisms and processes of water decision-making) as a braid of sweetgrass formed of water diplomacy (Indigenous treaty relations and resurgent kinship) and water citizenship (non-activist actions in the public sphere that transmit water knowledge). The findings illustrate a path forward for Indigenous Peoples reclamation of exploited water by settler-colonialism. The stories shared by Indigenous Grandmothers and water walkers illustrate the power of prayer, song, ceremony, kinship, law, and birth in restoring our connection to water and recognizing that water is life. Indigenous water governance includes gendered responsibilities within the responsibilities-based framework for water decision-making. The genocidal policies of the U.S. and Canada towards Indigenous women and children have fractured Indigenous water knowledges and left a legacy of environmental racism and trauma that needs healing. The findings from this study highlight how the domestication of Indigenous

women through residential schools removed many Indigenous women from the land and water with the intent to sever their ancestral connection to Mother Earth. Our loss of language, ceremony, harvesting practices, knowledge of place has caused intergenerational trauma and relegated Indigenous water rights and responsibilities to domestic uses. Traditional Knowledge Keepers very clearly express that one act of violence takes four generations to heal. As Mary Deleary, an Anishinaabe Elder notes the work of reconciliation must honor our ancestors, respect the land, and rebalance relationships (TRC Report 2015). The water remembers and so do we as its caretakers. Now is the time for healing the water and ourselves. The water walks are a living embodiment of Indigenous water citizenship and kinship diplomacy restoring our natal connection to water as all human beings enter this world in water. The findings of this study lastly illustrate that Indigenous Peoples define good water governance as protecting the water for future generations.

6.2 Relationship Among the Studies

The four studies in this thesis together represent a braided understanding of Indigenous water governance in the Great Lakes with unique insights into how Indigenous Nations and Peoples participate in water decision-making. The concept of Indigenous water governance as presented in this thesis is complex and represents a braiding of water knowledges enacted through water governance, diplomacy and citizenship. Additionally, the conceptualization of Indigenous water governance presented is context specific to the Great Lakes, the heart of Mother Earth, emanating from Anishinaabe, Haudenosaunee, and Métis worldviews for water protection. This approach to analyzing Indigenous water governance reveals dynamics of innovation for transboundary governance transformations in the Great Lakes that re-center

Indigenous water knowledges alongside settler-colonial knowledge to allow for plurality of hydrosocial relations.

Taken together these four studies contribute to addressing the overarching research question:

How is Indigenous water governance performed, supported and contested in the Great Lakes St. Lawrence River Basin?

6.3 Limitations

One of the greatest struggles in communicating the findings of this doctoral research is to do so within the confines of the Academy, a predominantly Euro-western institution of higher-learning in what many Indigenous Peoples perceive as the language of the colonizer – English. In recognition of this barrier, I have attempted to use water words and medicine words in the languages of Indigenous Nations of the Great Lakes including Anishinaabemowin and Kanien'kéha, as well as my own Shinnecock Algonquian language. As an Anishinaabe Grandmother shared,

When we come together, people come together to pray. We sing to the water. We speak to the water. We bless the water. But speak to it in our own Anishinaabe way in our own language because it is said the creator gave everybody a tongue to use and so that the creator will understand who is speaking so when we do the blessing of the water as women we pray in our own language.

According to Shawn Wilson (2008) research is ceremony and this thesis is part of the water ceremony I have embarked on to maintain my diplomatic relations with the water as kin and to fulfill my water citizenship responsibilities as a Shinnecock woman. So as the Grandmother instructed, I have tried to use the languages of the original peoples of Turtle Island throughout

this research, but I also ask forgiveness for those who read these words strung together like strands of wampum beads if their use offends Spirit.

Although, the research findings have broad implications for Indigenous Nations and Peoples of the Great Lakes and elsewhere across Turtle Island, the research did not engage all 97 Indigenous Nations with existing territories in the Great Lakes nor the over 200 with rights and treaty relations with the waters of the Great Lakes. As such it should be noted that Indigenous Nations and Peoples are diverse, and solutions to water challenges must fit the local context. The nations who were integral to this research with varying levels of participation and partnership include (Walpole Island First Nation; Curve Lake First Nation; Michipicoten First Nation; Red Rock Indian Band; Long Lake #58 First Nation; Sault Ste. Marie Tribe of Chippewa Indians; Fort William First Nation). We need more Indigenous-led water governance studies that are individualized in partnership with Indigenous Nations. However, I believe the findings of this thesis do represent a shared awakening of water knowledges for Indigenous water governance among Indigenous Nations in the Great Lakes and Indigenous Peoples globally.

6.4 Indigenous Research

When Indigenous Peoples become the researcher and not merely the researched, the activity of research is transformed. - Linda Tuhiwai Smith, *Decolonizing Methodologies*

In the same way that I hope this research transforms our understandings of water governance in recognition of reciprocity, respect, and responsibility this research process has transformed me and my relationship to water (Kirkness and Barnhardt 1991; Wilson 2008). Research is ceremony. The grassroots Grandmothers who walk for the water often shared that when you begin a water walk you commit to walk for the water for four years. For the past four

years I have committed myself to walking for the water through ceremony, song, prayer, and writing. I have been in ceremony for four years conducting Indigenous research using Indigenous methodologies to restore power and sovereignty to our Indigenous Nations as researchers and not solely the oppressed subjects of research.

I have been especially motivated by emerging discourse on Indigenous Data Sovereignty which recognizes Indigenous Peoples’ “right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as their right to maintain, control, protect, and develop their intellectual property over these” (Kukutai and Taylor 2016, p. xxii). Protecting and asserting Indigenous Data Sovereignty has been a critical part of my research process and professional development. In many ways Indigenous Data Sovereignty goes beyond the guidelines of the Tri-Council Policy Statement, Chapter 9 “Research Involving the First Nations, Inuit and Métis Peoples of Canada” and as such was integral in shaping the decision to go outside of traditional political science research and form Indigenous Partnership Agreements with data sovereignty protections. Additionally, as Indigenous research is ceremony this process was devotedly guided by an Advisory Council of Elders who were instrumental in advancing this work for the water in a good way. One notable undertaking with this research was the responsiveness to the diverse cultural protocols of the Indigenous Nations and knowledge holders who partnered for this project.

Another critical element of Indigenous research uncovered during this thesis journey is the ability to be adaptive, iterative, and flexible with the research design and implementation. Not all Indigenous research can nor should be shared within western academic institutions. A part of this journey was also being responsive to the knowledge holders who gave sacred gifts and to know that not all knowledge gifted is to be shared in foreign colonial spaces. Within many

Indigenous modalities of learning, you must physically take action, learn by doing, and as such some things cannot be translated in the written form nor should they be. There is power in physically connecting to the water, and I would never want this research to give a false sense of knowing water – knowing the Great Lakes – the heart of Ohke if one has never gone to embrace the water at the shore. Therefore, flexibility in the research design to meet the needs of my Indigenous co-collaborators (or co-conspirators as other water walkers affectionately referred to us after a night of research planning and water walk discussions) was critical to the success of this project. I have also had to navigate the complexity of death of an elder and a dear friend, but she set me on a path and gave us all a mission to continue the heart work and do it for the water.

6.5 Future Research

Following from Smith's (1999) critique, for research to be transformed we need more Indigenous researchers and increased acceptance of Indigenous methodologies, ontologies, and epistemologies in the study of water governance. This doctoral research has showcased the need for more Indigenous case study, mixed method, and quantitative investigations of Indigenous water governance across Turtle Island. Further research into the legal pluralisms of the Great Lakes and the applied implications for Indigenous Nations in exercising their water rights and responsibilities would fill a meaningful gap. Indigenous Nations in the Great Lakes are actively resisting settler-colonial governance and legal systems in processes of survivance that reaffirm Indigenous governance, knowledges, and law.

Emanating from this research is an understanding of water as a living entity and a desire among Indigenous Peoples to see the Great Lakes granted legal personhood. Future research should examine the handful of jurisdictions worldwide that have granted legal personhood to watercourses, notably rivers, and assess the transferability of such policies and legal implications

in the North American Great Lakes transboundary context. A worthy study could investigate if the environmental personhood rights achieved in New Zealand as a mechanism of treaty enforcement would be replicable in other jurisdictions with similar treaties with Indigenous Nations. The answers to these empirical questions are crucial to the evaluation of environmental legal personhood as a path forward for environmental sustainability and assurance of Indigenous socioeconomic, political and cultural rights to water.

Chapter 4 examined barriers and strategies for overcoming challenges relative to the Great Lakes Water Quality Agreement, Areas of Concern, but numerous other Annexes of the GLWQA could be researched for assessing the opportunities for operationalization of Indigenous water governance in the Great Lakes. Notable issues include climate change and aquatic invasive species. Aligning with this exploration of the efficacy of existing Great Lakes water institutions future research could examine the role of the Tribal and First Nations Water Accord in shifting Great Lakes policy in 2004.

Moreover, the research presented may be conceived as predominantly concerning itself with surface freshwaters in part because that is the biological constitution predominantly described in existing Great Lakes agreements. However, Indigenous water knowledges understands that all water is connected, and future research I hope would explore the ways in which our governance approaches mistreat water by not accounting for a holistic systems perspective. This will become an ever more pressing issue not only within the Great Lakes, but globally when we consider groundwater insecurity and Indigenous water rights and responsibilities. More comparative research is needed on groundwater laws in the United States and Canada and the evolution of Indigenous water rights and property law in the aftermath of *Agua Caliente Band v. Coachella Valley Water District*. There are increasing groundwater

conflicts facing Indigenous Peoples in the United States and Canada resulting from the inadequacy of many groundwater governance mechanisms to include Indigenous sovereigns within federalist systems. This thesis research has bearing on these conflicts given the insight of Indigenous water governance as applied to surface waters in this thesis. Although not directly applied in this thesis future research could examine how Great Lakes Indigenous Water Governance relates to existing structures for groundwater management in the basin. Indigenous water rights have long been an area of legal contestation resulting in costly and drawn-out litigation with Indigenous governments bearing most of the financial burden as they fight for water protection. This research could further assess how Indigenous rights to groundwater under a reserved rights doctrine may shift the settler-colonial state's interactions with Indigenous Peoples globally, in disparate climates, and with varying water security.

Lastly, I set out on this research journey to learn from our Indigenous relatives in other parts of the world to build an analysis of water governance in the Great Lakes with the intent that such a study could be replicated in my homelands in the East as daybreak people and People of the Shore. Future research that values the Indigenous water knowledges shared in this thesis will attempt to carve out space for projects that explore the manifestation of Indigenous water governance in our eastern waters.

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APPENDICES

Appendix A – Recruitment Poster

**CALL FOR
RESEARCH PARTNERS**
**from Great Lakes Indigenous Nations,
Organizations, and Leaders for
Indigenous Water Governance Project**



Innovations may address:
Contaminated Sites
Water Quality
Harmful Vessel Discharges
Nutrient Overloads
Aquatic Invasive Species
Habitat Protection
Groundwater
Climate Change
Great Lakes Science
And More . . .

Indigenous Nations are lead innovators in existing and emerging water governance. Indigenous self-determination and sovereignty are critical to building and sustaining resilient Indigenous communities in the face of water insecurity and climate change. Indigenous Nations as partners in this research will be at the forefront of widening access to innovative water sustainability ideas and effective collaborative decision-making approaches in the Great Lakes.

**For more information and
to submit a request for partnership:**
www.indigenouswaters.com/indigenous-water-governance-partner
CONTACT: LEONARDK@MCMASTER.CA

McMaster University
Inspiring Innovation and Discovery



Appendix B – Call for Partners (Email)
Email Recruitment Script – Call For Partners
Indigenous Water Governance
Kelsey Leonard, (PhD Candidate)
(Department of Political Science – McMaster University)

E-mail Subject line: CALL FOR RESEARCH PARTNERSHIP PROPOSALS: Great Lakes Indigenous Water Governance Project

Hello,

Please allow me to introduce myself. My name is Kelsey Leonard and I am a PhD Candidate in the Department of Political Science at McMaster University in Hamilton, Ontario, Canada. I am enrolled citizen of the Shinnecock Nation and currently developing a dissertation research project on Indigenous water governance in the Great Lakes region. It is a great honor to share this *Call for Research Partnership Proposals* with you and I hope you will consider partnering with me to identify, celebrate, and share outstanding examples of Indigenous water governance in the Great Lakes Basin.

The resiliency of Indigenous Nations to protect ancestral waters is affirmed through countless efforts of Indigenous innovation in water governance. With the increasing diversity of users in the Great Lakes St. Lawrence River Basin, which is shared by Indigenous Nations, the United States, Canada and other provincial, state, and local governments, climate change requires governance adaptation and policy transformation for water protection.

An Indigenous Water Governance Project is a field-based partnership study nominated by an Indigenous Nation or organization that focuses on a major water governance issue facing Native American Tribes or First Nations in the Great Lakes St. Lawrence River Basin. These partnership studies are rooted in the sovereign choice of an Indigenous Nation to partner with an Indigenous researcher at McMaster University to study a water governance issue confronting that nation. Some examples of such issues include access to equitable decision-making in Great Lakes management regimes, effective exercise of self-government for water quality monitoring, best practices for consultation that respect the right to free, prior, and informed consent for actions that may impact Indigenous waters, climate change adaptation planning with a focus on water protection, or cultural values that inform Indigenous water justice.

The partnership is intended to be helpful to Tribes and First Nations by contributing to the growing body of research on replicable best practices and celebrating Indigenous innovations in water governance. The partnership will also enable the identification of additional research needs of Great Lakes Tribes and First Nations. Ultimately, the research could aid in identifying opportunities for asserting treaty rights, negotiating co-governance agreements, and furthering understanding of Tribal/First Nation rights and expertise in the protection of the Great Lakes.

The Great Lakes Water Quality Agreement is a commitment between the United States and Canada to restore and protect the waters of the Great Lakes. The Agreement provides a framework for identifying binational priorities and implementing actions that improve water quality. In 2012, the Agreement was amended to protect against water quality threats and ensure the “chemical, physical, and biological integrity” of the Great Lakes. However, Indigenous Nations were not signatories to the Agreement nor parties to the negotiations. Despite Indigenous exclusion from international Great Lakes decision-making, Indigenous Nations continue to excel as water protectors. The research partnership aims to identify, celebrate, and share outstanding examples of Indigenous water governance innovations that notably address specific issue areas identified in the Agreement. Those areas known under the 10 Annexes include: Contaminated Sites; Lakewide Management; Chemicals of Mutual Concern; Nutrients; Discharges from Vessels; Aquatic Invasive Species; Habitat and Species; Groundwater; Climate Change Impacts; and Science.

This research is guided by the belief that Indigenous Nations are lead innovators in existing and emerging water governance and that Indigenous self-determination and sovereignty are critical to building and sustaining resilient Indigenous communities in the face of water insecurity and climate change. Indigenous Nations as partners in this research will be at the forefront of widening access to innovative water sustainability ideas and effective collaborative decision-making approaches for other Indigenous Nations facing similar water governance challenges in the Great Lakes St. Lawrence River Basin.

To Propose a Case Study for Partnership:

1. **Review the Letter of Information (attached) to understand the expectations of the research partnership.**
2. **Submit the application form online at: <https://www.indigenouswaters.com/indigenous-water-governance-partner> clearly addressing the scope and goal of the research project by March 23, 2018.**
3. **Answer any follow-up questions and submit any additional information by April 6, 2018.**

If you would prefer you can send a pdf or doc format application to Kelsey Leonard, leonardk@mcmaster.ca by March 23, 2018.

Please feel free to circulate this opportunity widely. If you have any other questions please contact Kelsey Leonard, the principal investigator at leonardk@mcmaster.ca

Sincerely,

Kelsey Leonard
Philomathia Fellow in Water Policy
PhD Candidate, Department of Political Science
McMaster University
leonardk@mcmaster.ca
www.indigenouswaters.com

Appendix C – Call for Research Partnership Proposals



CALL FOR RESEARCH PARTNERSHIP PROPOSALS **from Indigenous Nations, Organizations, and Leaders** **for Great Lakes Indigenous Water Governance Project**

A Research Project that Identifies, Celebrates, & Shares

Outstanding Examples of Indigenous Water Governance in the Great Lakes Basin

The resiliency of Indigenous Nations to protect ancestral waters is affirmed through countless efforts of Indigenous innovation in water governance. With the increasing diversity of users in the Great Lakes St. Lawrence River Basin, which is shared by Indigenous Nations, the United States, Canada and other provincial, state, and local governments, climate change requires governance adaptation and transformation for water protection.

An Indigenous Water Governance Project is a field-based partnership study nominated by an Indigenous Nation or organization that focuses on a major water governance issue facing Native American Tribes/ First Nations in the Great Lakes St. Lawrence River Basin. These partnership studies are rooted in the *sovereign* choice of an Indigenous Nation to partner with an Indigenous researcher at McMaster University to study a water governance issue confronting that nation. Some examples of such issues include access to equitable decision-making in Great Lakes management regimes, effective exercise of self-government for water quality monitoring, best practices for consultation that respect the right to free, prior, and informed consent for actions that may impact Indigenous waters, climate change adaptation planning with a focus on water protection, or cultural values that inform Indigenous water justice.

The partnership is intended to be helpful to Tribes and First Nations by contributing to the growing body of research on replicable best practices and celebrating Indigenous innovations in water governance. The partnership will also enable the identification of additional research needs of Great Lakes Tribes and First Nations. Ultimately, the research could aid in identifying opportunities for asserting treaty rights, negotiating co-governance agreements, and furthering understanding of Tribal/First Nation rights and expertise in the protection of the Great Lakes. The Great Lakes Water Quality Agreement is a commitment between the United States and Canada to restore and protect the waters of the Great Lakes. The Agreement provides a framework for identifying binational priorities and implementing actions that improve water quality. In 2012, the Agreement was amended to protect against water quality threats and ensure the “chemical, physical, and biological integrity” of the Great Lakes. However, Indigenous Nations were not signatories to the Agreement nor parties to the negotiations. Despite Indigenous exclusion from international Great Lakes decision-making, Indigenous Nations continue to excel as water protectors. The research partnership aims to identify, celebrate, and share outstanding examples of Indigenous water governance innovations that notably address specific issue areas

identified in the Agreement. Those areas known under the 10 Annexes include: Contaminated Sites; Lakewide Management; Chemicals of Mutual Concern; Nutrients; Discharges from Vessels; Aquatic Invasive Species; Habitat and Species; Groundwater; Climate Change Impacts; and Science.

This research is guided by the belief that Indigenous Nations are lead innovators in existing and emerging water governance and that Indigenous self-determination and sovereignty are critical to building and sustaining resilient Indigenous communities in the face of water insecurity and climate change. Indigenous Nations as partners in this research will be at the forefront of widening access to innovative water sustainability ideas and effective collaborative decision-making approaches for other Indigenous Nations facing similar water governance challenges in the Great Lakes St. Lawrence River Basin.

To Propose a Case Study for Partnership

- 1) Review the Letter of Information to under the expectations of the research partnership.**
- 2) Submit the application form and a written proposal clearly addressing the scope and goal of the study to Kelsey Leonard, leonardk@mcmaster.ca by April 6th.**
- 3) Answer any follow-up questions and submit any additional information by April 20th.**

All applications and proposals should be emailed to leonardk@mcmaster.ca.

APPLICATION FOR PARTNERSHIP STUDY PROPOSALS

Great Lakes Indigenous Water Governance Project

Name and Title: _____ **Date:** _____

First Nation, Tribal or Indigenous Community: _____

Organization Name: _____

Mailing Address: _____

Email Address: _____ **Phone:** _____

Website Address: _____

Proposed Project Lead Contact(s): _____

Lead(s) Email: _____

Lead(s) Phone: _____

Proposed Study Title: _____

Researcher site visits are integral to the process of completing an Indigenous Water Governance project. Please check the option that applies to your proposed partnership study.

☐ Yes, we would welcome the opportunity to develop a site visit.

☐ No, at this time we would like to participate through survey participation, document submission, and/or electronic, telephone, or video communications.

☐ Other,

Continue to Next Page →

Please attach clearly written description of (at least one page):

- a) The Indigenous Water Governance Innovation;
 - i. What are three priority issue areas for Great Lakes protection for your Indigenous Nation?
 - ii. How is your Indigenous Nation working to address these priority issue area(s)?
 - iii. Describe how the following Great Lakes issue area(s) may be addressed by your water governance innovation (*may describe more than one*):
 - (1) **Areas of Concern**: restoring highly contaminated sites within the Great Lakes basin
 - (2) **Lakewide Management**: improving water quality on a lake-by-lake basis
 - (3) **Chemicals of Mutual Concern**: protecting human health and the environment by reducing the release of chemicals of mutual concern
 - (4) **Nutrients**: implementing actions to manage phosphorus and other nutrients
 - (5) **Discharges from Vessels**: preventing harmful discharges from ships and other vessels
 - (6) **Aquatic Invasive Species**: preventing the introduction of new aquatic invasive species and limiting the impacts of existing aquatic invasive species
 - (7) **Habitat and Species**: protecting native species and their habitat
 - (8) **Groundwater**: coordinating groundwater science and management actions
 - (9) **Climate Change Impacts**: coordinating efforts to understand and predict the climate change impacts and proactively address these impacts
 - (10) **Science**: coordinate, integrate, synthesize, and address Great Lakes science
- b) Why this project is significant for Indigenous Water Governance in the Great Lakes;
- c) A description of the water governance challenge(s) facing the Indigenous Nation;
- d) A brief explanation of what your Nation or organization would like to gain from partnering on an Indigenous Water Governance project;
- e) Any foreseen impediments which may affect the development of the research project and/or partnership.

Please check one:

- ☐ Yes, please forward my proposal to other programs for consideration if not selected.
- ☐ Do not forward my proposal to other programs for consideration if not selected.

Appendix D – Indigenous Research Partnership Information Sheet Great Lakes Indigenous

Water Governance Project Partnership Proposal

Information Sheet

Kelsey Leonard, (PhD Candidate)

(Department of Political Science – McMaster University)

Purpose of the Study:

Indigenous Nations, organizations and leaders are invited to take part in this study on Great Lakes Indigenous Water Governance. The purpose of this study is to identify, celebrate, and share Indigenous excellence in innovation for water governance of the Great Lakes. Across the Great Lakes numerous endeavors are underway to protect the water. However, substantial variations exist between individual Indigenous Nations and how water governance is enacted. Further differentiation of water governance policy, practice, and outcomes exist given the added layer of interjurisdictional coordination Indigenous Nations face with the Canadian and United States governments. The research partnership is an opportunity to document the variety of innovations and approaches Indigenous Nations are undertaking to protect the Great Lakes. Although this research is a part of my doctoral dissertation within the Department of Political Science, it is my intent that the project purpose be of beneficial use to Indigenous Nation partners and help with Indigenous assertion of rights for protection of the Great Lakes.

Procedures involved in the Research:

Indigenous Nations are selected as partners in this study and will collaborate with the researcher to determine the best methods and procedures for undertaking the documentation of their water governance innovation project. The research is a quintessentially Indigenous project designed in partnership with the Nations identified as beacons of innovation. Initial steps Indigenous research partners must undertake include nominating an Indigenous Nation through the Call for Research Partnership Application and responding to any follow-up questions or requests for additional information from the researcher. Once research partners have been determined, Indigenous Nation project leads and the researcher will co-develop a research partnership agreement. Additional procedures involved in the research may include:

- Identifying a dedicated partner nation facilitator who assumes responsibility for communication and planning of the project
- Maintain availability by phone and email for timely communication with researcher
- Arrange for a site visit (if possible) for researcher to document water governance innovation and meet project goals as co-determined

Are there any risks to being a part of this project?

There are likely minimal risks, if any, to participating in this project. Participation in this research is voluntary and research goals co-determined with Indigenous research partners. However, you can withdraw (stop taking part) at any time until March 1, 2019 shortly prior to the deadline to finalize research partners. While there are no physical risks to participating in this project, there may be some psychological, social, and other risks. Water governance projects explore environmental management crises often rooted in colonization and land dispossession. These risks can be uncomfortable, but no more than day-to-day experiences and political challenges faced by Indigenous Nations protecting the Great Lakes.

Potential Benefits

The project hopes to better understand the unique role and responsibilities of Indigenous Nations in water governance in the Great Lakes region. Documenting Indigenous water governance innovations may also aid Indigenous Nations in their pursuit of equity in Great Lakes decision-making and a seat at the table for transboundary policy-making. Additional benefits will be explored with the research partners during the co-development of the research partnership agreement. Ultimately, researchers and others may be able to take the findings from the project to recommend reforms to current water governance mechanisms to build greater equity and resilience for water protection of the Great Lakes.

Confidentiality

The researcher and partner will co-develop terms of confidentiality for the project, this may include a data sharing agreement. Information collected during the project will only be used with partner permission. The researcher will take the utmost care to protect project information. The researcher and partner will determine procedures for obtaining consent for the project that are a cultural match for the Indigenous Nation. If the Indigenous Nation has a research ethics review board the researcher and project facilitator will submit a research ethics proposal to the Tribal/First Nation government for review. The storage of any data collected during the project will be co-determined and outlined in a data sharing partnership agreement. If co-determined data can be stored on MacDrive and/or in locked facilities in the Department of Political Science, KTH Building, at McMaster University, Hamilton, ON Canada.

Participation and Withdrawal:

Your participation in this project is voluntary. It is your choice to be part of the project or not. If you decide to be part of the project, you can stop (withdraw), from the project for whatever reason, even after submitting your project partnership application or part-way through the project or up until March 1, 2019 when I expect to finalize my research partners for my dissertation. If you decide to withdraw, there will be no consequences to you. In cases of withdrawal, any data you have provided will be destroyed unless you indicate otherwise.

Data retention plan:

The data collected through this project will be stored for five years with a fixed end date of June 30, 2024. Data retention may include future postdoctoral research on Indigenous water governance. Results will be

disseminated as findings in my PhD dissertation, but may also inform and be used for additional postdoctoral research. The retention of final files of the data collected will be co-determined after the final dissertation submission date of June 1, 2019 and may be stored in a password protected online storage drive through McMaster University. The researcher will follow appropriate transfer protocol if the data can no longer be stored at McMaster University.

How do I find out what was learned in this project?

I expect to have this project completed by June 1, 2019. Sharing of the project results will be co-determined with research partners.

Questions about the project: If you have questions or need more information about the project itself, please contact me at leonardk@mcmaster.ca

Appendix E – Partnership Agreement Template



PARTNERSHIP AGREEMENT

INDIGENOUS WATER GOVERNANCE PROJECT



Partnership Agreement

[date]

_____ First Nation (hereafter Nation) in collaboration with doctoral candidate researcher Kelsey Leonard (hereafter Researcher) agree to conduct an Indigenous Water Governance research project with the following understandings:

1. The purpose of this research project, as discussed with and understood by the Nation and Research as partners is: _____
2. The scope of this research project (that is, what issue, events or activities are to be involved, and the degree of participation by Nation), as discussed with and understood in this community, is: _____
3. The methods to be used, as agreed by the Nation and Researcher, are: _____
4. The development of this project is based on sincere communication between the Nation and the Researcher. All efforts will be made to incorporate and address local concerns and recommendations at each step of the project.

At the end of the project, the Nation and Researcher will co-determine how best to share results and gain community feedback.

5. Information collected is to be shared, distributed, and stored in these agreed ways: _____

The data collected is confidential and will be kept by the researcher, Kelsey Leonard, where the data will be converted to an electronic form and shared with the Nation. Any participants in the research will be able to request digital copies of their individual data. If for any reason the sharing, distribution and storage of information collected is not outlined in the above section then to protect the business, cultural and other interests of the Nation the Researcher will work with the Nation to co-determine how information will be stored and shared.

The information collected may be included in the dissertation manuscript for the Researcher, however such inclusions will be in direct consultation with the Nation and be approved before draft submission of the dissertation in March 2019.

6. Informed consent of individual participants in this partnership project is to be obtained in these agreed ways: _____

A copy of the consent materials will be made available to all participants where the contact information of each research partner can be used at any time, should the participant wish to contact the researcher for additional information.

7. Project progress will be communicated to the Nation and participants in these agreed ways: _____

Benefits

The research partners wish to use this research project for their benefit in the following ways (for instance, by publishing the report and articles about it): _____

- Doctoral Candidate, Kelsey Leonard, Research Partner wishes to use this project for the completion of her dissertation.
 - The Researcher will work with the Nation to co-author a journal article capturing the findings from the identified area of work for the Indigenous Water Governance Project. The hope is that a journal publication will support the Nation's efforts for future aboriginal, treaty, or other non-abrogated rights protection in the future for water governance.

The researcher will use the data collected for fulfillment of their doctoral dissertation manuscript. Additional presentations in peer-reviewed publications and conferences will be made. The final article will be sent to all participants and presentations will be made readily available for community members.

The benefits likely to be gained by the Nation through this research project are:

- Best Practices
- Science Agenda
- Educational
- Informational
- Public Policy

Commitments

The Nation's commitment to the researcher is to: _____

- Guide the Scope of Work to ensure maximum benefit for Nation.
- Collaborate for Site Visit.

- Keep informed about the progress of the project, and help in leading the project toward meaningful results.

The researchers' main commitment to the Nation is to: _____

- Inform the lead contact about the progress of the project in a clear, specific, and timely manner.
- Draft all project deliverables in a clear and timely manner with opportunities for review and feedback from all partners.
- Organize regular project meetings.
- Conduct all necessary data collection and/or determine data sources for inclusion in the project as co-determined by the partners.
- Create Final Project Report
- Deliver community presentation on conclusion of project.

The research partners agree to interrupt the research project in the following circumstances: _____

- If the Nation decides to withdraw its participation prior to October 31, 2018.
- If the research partners believe that the project will no-longer benefit Indigenous Water Governance research in the Great Lakes Basin as determined after a consultative meeting to ensure all remedies have been examined.

Signed by:

Date:

Date:

Research Partner(s):

(Signature of Main Researcher)

Kelsey Leonard
PhD Candidate

Department of Political Science

McMaster University

INSERT NATION NAME

Name:

Position:

Appendix F: Workshop Participant Consent Form

**GREAT LAKES PROTECTION WORKSHOP
Participant Consent Form**

Participant Name:

Contact information (for confirmation and reminder purposes):

Telephone number:

Is it okay to leave a message? ☐ Yes ☐ No

E-mail:

Have you been informed about what this research involves? ☐ Yes ☐ No

Have you had the opportunity to ask questions? ☐ Yes ☐ No

Do you agree to participate in the workshop? ☐ Yes ☐ No

Do you agree to be audio-recorded? ☐ Yes ☐ No

Do you agree to be video-recorded? ☐ Yes ☐ No

Do you agree to have your picture taken? ☐ Yes ☐ No

Do you agree that the discussions in the workshop are confidential and should not be shared beyond those participating in the workshop? ☐ Yes ☐ No

Do you understand that you are able to stop contributing to the workshop at any time by no longer talking? ☐ Yes ☐ No

Participant Signature:

.....

Date:

Appendix G: Letter of Information / Consent

LETTER OF INFORMATION / CONSENT

GREAT LAKES WATER WALKS

Kelsey Leonard, (PhD Student)

(Department of Political Science – McMaster University)

Principal Investigator:

Kelsey Leonard
Department of Political Science
McMaster University
Hamilton, Ontario, Canada
(905) 517-8840
E-mail: leonardk@mcmaster.ca

Supervisor:

Dr. Dustin Garrick
E-mail: dustin.garrick@smithschool.ox.ac.uk

Purpose of the Study:

You are invited to take part in this study on the Great Lakes water walks. I want to understand the role of Indigenous women in water governance and how Indigenous water teachings are shared with non-Indigenous peoples in the region. I am hoping to learn ways in which Indigenous women believe they are/have been excluded from water governance. I also hope to explore ways in which Indigenous women understand water governance of the Great Lakes and why they believe the water walks are Indigenous tools for promoting knowledge sharing. I am doing this research for my dissertation in the Department of Political Science. This is a line of research that I hope to continue in the future and will use your data for this project as well as for future related studies.

Procedures involved in the Research: I will ask you questions about the Great Lakes water walks. I will take handwritten notes to record your answers as well as use an audio recorder on my phone or laptop to make sure I don't miss what you say. Our conversation will last about an hour.

Are there any risks to being a part of this project?

There are likely minimal risks, if any, to participating in this project. However, you do not need to answer questions that make you feel uncomfortable or that you do not want to answer. And you can withdraw (stop taking part) at any time.

Potential Benefits

The project hopes to better understand the unique role and responsibilities of Indigenous women in caring for water in the Great Lakes region. Additionally, the project aims to highlight ways in which Indigenous women may be

currently excluded from water governance decision-making in the basin. Researchers and others may be able to take the findings from the project to recommend reforms to current water governance mechanisms to build greater equity and resilience for water protection of the Great Lakes.

Confidentiality

Information collected during the interview will only be used with your permission. Identifying information such as your name, nation, and gender are key components of the project. Therefore, if you do not want to see your name mentioned in the project, you can use a false name or choose to keep your identity anonymous. You may request access to your individual data contribution for review or withdraw at any time. The data will be kept in a locked and password protected electronic system.

Participation and Withdrawal:

Your participation in this project is voluntary. It is your choice to be part of the project or not. If you decide to be part of the project, you can stop (withdraw), from the interview for whatever reason, even after signing the consent form or part-way through the project or up until approximately March 2019, when I expect to be submitting my dissertation.

If you decide to withdraw, there will be no consequences to you. In cases of withdrawal, any data you have provided will be destroyed unless you indicate otherwise. If you do not want to answer some of the questions you do not have to, but you can still be a part of the project.

How do I find out what was learned in this project?

I expect to have this project completed by approximately March 2019. If you would like a brief summary of the results, please let me know how you would like it sent to you

Questions about the project: If you have questions or need more information about the project itself, please contact me at:

leonardk@mcmaster.ca

This study has been reviewed by the McMaster University Research Ethics Board and received ethics clearance. If you have concerns or questions about your rights as a participant or about the way the study is conducted, please contact:

McMaster Research Ethics Secretariat
Telephone: (905) 525-9140 ext. 23142
C/o Research Office for Administrative Development and Support
E-mail: ethicsoffice@mcmaster.ca

CONSENT

- I have read the information presented in the information letter about a project being conducted by Kelsey Leonard, of McMaster University.
- I have had the opportunity to ask questions about my involvement in this project and to receive additional details I requested.
- I understand that if I agree to participate in this project, I may withdraw from the project at any time or up until approximately March, 2019.
- I have been given a copy of this form.
- I agree to participate in the study.

Signature: _____ Date: _____

Name of Participant (Printed) _____

1. I agree that the interview can be audio [video] recorded.

[] Yes

[] No

2. I agree to have my responses used for this project and for future related projects.

☐ yes

☐ no

3. ☐ Yes, I would like to receive a summary of the project's results.

Please send them to me at this email address _____

Or to this mailing address: _____

☐ No, I do not want to receive a summary of the project's results.

4. I agree to be contacted about a follow-up interview, and understand that I can always decline the request.

☐ Yes, please contact me at: _____

☐ No

Appendix H: Interview Guide

Interview Guide

GREAT LAKES WATER WALKS

Kelsey Leonard, (PhD Student)

(Department of Political Science – McMaster University)

Information about these interview questions: The questions below provide an idea of what I would like to learn about the Great Lakes water walks and the Indigenous women water walkers. Interviews will be one-to-one and will be open-ended (not just “yes or no” answers). Because of this, the exact wording may change a little. I may also use shorter follow-up questions to make sure I am understanding your responses such as: “*So, you are saying that ...?*”), to get more information (“*Please tell me more?*”), or to learn what you think or feel about something (“*Why do you think that is...?*”). I also encourage you to ask me questions if anything is confusing or you need more explanation.

- 1) Information about you: What is your name? What Nation are you from? What gender do you identify with?
- 2) How is water important to your everyday life?
- 3) Do you live close to the water? Do your people live close to the water? (Were your people removed from living close to the water?)
- 4) Is this your first water walk?
- 5) How many water walks have you participated in?
- 6) What made you participate in the ____ (location/name) _____ water walk?
- 7) Why are the Great Lakes important to protect as an Indigenous water walker?
- 8) What is the awareness/knowledge of non-Indigenous people about your Indigenous teachings for caring for water?
 - a. How do the water walks help you to share your Indigenous knowledge of water?
 - b. How would you like to improve knowledge sharing between Indigenous and non-Indigenous peoples to protect the water?
- 9) Tell me about your relationship as a woman and/or a mother with water.
- 10) Many Indigenous People share the teaching that water is our first medicine. Do you share this teaching? What does it mean to you?
- 11) Please tell me about your Indigenous Nation and what have been some of your Nation’s cultural teachings on water.
- 12) How has your Indigenous Nation influenced your connection with water?
- 13) What is the role of women in caring for water?
 - a. How is that role different than men?
 - b. Do you feel women are able to fulfill this role in the current ways in which water is governed in the Great Lakes?
- 14) In your opinion, what is the greatest threat facing the Great Lakes?

15) Do you think the water walks have changed since you first started out? [] Yes [] No
Please tell me more about why you think that?

16) How is water governed (decision-making) in your Nation?

17) Who are the actors that are involved in governing the Great Lakes? (i.e. individuals, organizations, Indigenous Nations, nation-states, states/provinces, municipalities, etc.)

18) Do you believe the water walks influence decision-makers on how to better govern water?

19) How do you define water governance?

20) Is there something important I forgot? Is there anything else you think I need to know about water walks?

END