

**Reconciling How We Live With Water:
The Development and Use of a Collaborative Podcasting Methodology
to Explore and Share Diverse First Nations, Inuit, and Métis Perspectives**

by

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ABSTRACT

RECONCILING HOW WE LIVE WITH WATER: THE DEVELOPMENT AND USE OF A COLLABORATIVE PODCASTING METHODOLOGY TO EXPLORE AND SHARE DIVERSE FIRST NATIONS, INUIT, AND METIS PERSPECTIVES

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Conventional approaches to water research and governance often fail to meaningfully engage and mobilize Indigenous peoples' perspectives, values, and knowledge in addressing water-related concerns. This research introduces the use of collaborative podcasting as a methodological approach, applied in the context of this work to explore First Nations, Inuit, and Métis perspectives around how we live with, and relate to, water in Canada; and what the inclusion of these perspectives mean for water policy and research. Data were collected during a National Water Gathering event through sharing circle dialogue and participant interviews (n=18), and contributed to the creation of an audio-documentary podcast. Thematic analysis revealed key themes relating to: responsibilities to water; confronting colonialism; and pathways to mobilizing diverse knowledge systems. Findings from this work illustrate how relationships with, and responsibilities to, water are being sustained, reclaimed, and renewed by Indigenous people, and the value and power inherent in such actions.

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research assistant in the CWN project, for your support and guidance with the podcast, and, together with Sheri and Ashlee, for providing the opportunity for me to profoundly learn and grow through the experience of the Water Gathering and this research. I also extend my thanks to fellow research assistants Robert Stefanelli and Kaitlin Lauridsen, with whom I had the pleasure of working on the CWN project.

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STATEMENT OF WORK

The research presented in this thesis grew out of a larger project led by Dr. Heather Castleden, Dr. Ashlee Cunsolo, Dr. Sherilee Harper, and Dr. Debbie Martin. The research team also included project manager Catherine Hart, and research assistants Robert Stefanelli, and Kaitlin Lauridsen, as well as myself. The collaborative podcast initiative to which this work pertains was led by me, in collaboration with the research team members of the larger project (with the exception of the two other research assistants), and podcast editing team members George Russell Jr., Tim Anaviapik-Soucie, and Clifford Paul.

The initial concept for the podcast was developed by me following the expressed interest of project partners and participants in seeing a substantive knowledge mobilization component to the project. With the support and input of the research team and project partners and participants we proceeded with this initiative. I organized the recording of the proceedings of the Water Gathering that were to provide the foundation for the podcast, and conducted interviews with participants. All audio-recordings were transcribed by me. Thematic analysis and podcast production followed a collaborative approach (further described in this thesis), and I organized and led the conference calls that facilitated this process, as well as follow-up email correspondence. The editing of the podcast was conducted by me, up to the final draft version, and an audio engineer did final sound editing. I also facilitated member-checking with participants, with respect to both the podcast and related manuscript content.

With respect to podcast dissemination, I created the website that hosts the podcast, and developed a social media promotion strategy for its release. Over the past year, I have also presented on this work at multiple conferences (through both oral and poster presentations), as well as at an invited talk at the Northern Ontario First Nations Environmental Conference, which was co-presented with Ken Paul (who joined me remotely via Skype).

Given the collaborative nature of this work, the manuscripts comprising Chapters Two and Three of this thesis will be submitted for publication with co-authors. I wrote these Chapters, with co-authors providing comments and feedback to inform the final versions presented here. Chapters One and Four are solely authored by me.

Chapter Two:

The expanding digital media landscape of qualitative and decolonizing research: Examining collaborative podcasting as a research method

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Chapter Three:

‘The legacy will be the change’: Reconciling how we live with and relate to water

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POSITIONALITY STATEMENT

If research doesn't change you as a person, then you haven't done it right.

Quoted by Shawn Wilson (2008, p.83)

In a work such as this – which involves drawing from, reflecting on, and presenting the words of other people, including those from cultures different than my own – it is important for me to locate myself at the outset, so that readers may have a better sense of who I am, and what I bring to this endeavor. As Bourke (2014) describes, “Research represents a shared space, shaped by both researcher and participants” (p. 1). Within the context of this work, this shared space is one I feel very fortunate to have been welcomed into, and it is one from which I have learned immensely over the course of this research, and in ways that are still unfolding. As a non-Indigenous researcher working in an Indigenous context (that is, working with Indigenous individuals and discussing Indigenous knowledges), this is also space I have tried to navigate with care, with self-reflexivity, and with an open mind and an open heart.

I come to this work as a first generation Canadian, with English and Scottish heritage. While my ancestral roots stretch across the Atlantic, it is the land and waters here in Canada that I have come to know and cherish in my life. Over the years I have lived in many different places, mostly in Ontario, from the densely populated and developed areas in and around Toronto, to 50 acres “in the bush” that I called home for half of my twenties; and I have lived in places, like Peterborough, that, for me, lie somewhere in-between. I have always loved to be near, in, or on water. Growing up near Lake Ontario, I was fortunate to be able to spend time on the shores of such a large body of water, but I was also acutely aware of how polluted we had let it become.

Over the course of the past two and a half years, I have had the opportunity to participate in number of sharing circles, both related to this research and beyond, and have come to appreciate how transformative, healing, and powerful they can be. But it is those circles that form the foundation of this research – those that were held at the Wabano Centre in Ottawa as part of the larger research project – with which I have a special relationship, and from which I have undoubtedly learned the most as I engaged in the process of this research.

As the pages of this thesis detail, a central component of this work was creating an audio-documentary podcast that reflects the essence of the powerful dialogues we had during the Water Gathering event at the Wabano Centre. Being a non-Indigenous person working on this project was a challenging space for me to occupy at times, and I questioned whether or not it was appropriate for me to be the one doing this work and leading the podcast production. It was something I reflected on a lot during the early stages of discussion when things were still at the conceptual stage. And one of the things I came to appreciate was that this was something I could offer to this project, and that in the context of this project, it was not a role that I was taking from someone else. I came to this project as a health and science writer, and someone that has long believed in the power of stories. Though I had not worked with audio-storytelling before, it was the medium that seemed to lend itself best to our context.

Moreover, the collaborative nature of our process was foundational to the design and intent of this work, and helped me to navigate my responsibility towards presenting and sharing the words of others in a responsible and authentic way. Together with a team comprised of three Indigenous participant volunteers and the core research team, we collectively narrowed the material down, determined the themes around which to focus, and considered the format the podcast would take. As I worked with others and developed these relationships, I gradually came to feel more comfortable in my role and the responsibilities I was now entrusted with.

While the team was essential in guiding this process, the responsibility of arranging the collected audio pieces into a coherent whole was ultimately one that fell to me, not in the finality of such decisions, but in creating and crafting a draft. My desire to honour the material led me to many listenings, many walks by the river where I live, and careful consideration and reflection throughout the process. I also knew that I would have the feedback of the team and project participants to ensure that what we would ultimately share was true to our intent and to our experience of sharing together at the Water Gathering.

Influenced by the work of Margaret Kovach (2009) and Linda Tuhiwai Smith (2012), I have sought to approach this work through a decolonizing lens, being cognizant of and seeking to address colonial legacies that contribute to the marginalization of Indigenous knowledges and worldviews. Within this project, this meant centering and prioritizing Indigenous voices and perspectives, and seeking methods and approaches within the work that could more adequately

and authentically reflect Indigenous ways of knowing. It was this (shared) desire that motivated development and use of the collaborative podcasting methodology described in these pages.

Producing the podcast and presenting this work through my thesis has been both a challenging, as well as extremely rewarding experience. I am grateful for the opportunity to have been involved in this work, and hope that through these outputs I am able to offer something of value in return. Sharing the perspectives, stories, teachings and wisdom of the participants in this project has been both an immense responsibility, as well as a true honour and privilege.

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CHAPTER ONE

Introduction, Literature Review, Study Context, and Rationale

*The land and water are both poisoned and perpetually healing, as we are.
What we do to them, we do to ourselves; what stories we tell one another
about this matters.*

Rita Wong (2012, p. 529)

INTRODUCTION

We live on a watery planet; one that is under increasing ecological stress from our actions (Hassan, Scholes, & Ash, 2005). Water systems and patterns in the hydrologic cycle are changing (Cosgrove & Loucks, 2015). Pollution, climate change, resource development, land conversion, population growth, and extensive agricultural and industrial water withdrawals are all placing increased pressure on natural water systems, and their ability to provide for the people and ecosystems that rely on them (Cosgrove & Loucks, 2015; Vörösmarty, McIntyre, Gessner, Dudgeon, & Prusevich, 2010). These pressures further intersect with existing socio-economic inequities, contributing to growing human health and human rights concerns (UNWWAP, 2015). Increasingly, these critical and mounting water-related challenges compel us to reexamine our priorities, values, and actions with respect to how we use and impact – and protect, or fail to protect – the water on which all living beings depend (Groenfeldt & Schmidt, 2013; Sandford & Phare, 2011).

In Canada, the fundamental need for such critical reevaluation is perhaps nowhere more evident, and urgent, than with respect to addressing the long-standing and pervasive water-related issues faced by Indigenous¹ communities. While the majority of Canadians benefit from reliable access to clean and safe drinking water, many Indigenous communities face substantial water security issues. These water-related challenges are reflected not only in long-standing

¹ The term ‘Indigenous’ will be used throughout this work to refer to the original inhabitants of what is now known as Canada, and their decedents. The term ‘Aboriginal’ (also commonly used to refer to Indigenous peoples in Canada) was officially adopted in the language of the Constitution Act, 1982, and in this sense is considered a definition of identity imposed on Indigenous peoples. With the exception of quotes from others and reference to related legislation or policy, the term ‘Indigenous’ will therefore be used rather than ‘Aboriginal’. Though widely considered derogatory and offensive, the term ‘Indian’ still has legal connotations and will only be used when specifically referencing related pieces of legislation.

drinking water advisories² (spanning years to decades) (Health Canada, 2017; White, Murphy, & Spence, 2012), and often-inadequate drinking- and waste-water infrastructure (Daley, Castleden, Jamieson, Furgal, & Ell, 2015; Hanrahan, Sarkar, & Hudson, 2014; Neegan Burnside Ltd, 2011), but also in the pollution of shared waterways, and contamination of aquatic species and ecosystems that are so integral to Indigenous peoples' cultures, identity, and ways of knowing, doing, and being in the world (Basdeo & Bharadwaj, 2013; Mascarenhas, 2007; Walkem, 2007).

In a time of growing awareness of the injustices and inequities faced by Indigenous peoples in Canada, particularly following the work of the Truth and Reconciliation Commission (TRC), the need for renewed, respectful relationships between Indigenous and non-Indigenous peoples is increasingly being recognized. Though the mandate of the TRC was focused on investigating the legacies of the Indian Residential School system, the Commissioners also took care to emphasize in their report the extent to which reconciling relationships must also include working together to better care for that which we now share: quite literally the common ground we stand on, and the waters that flow through these lands and sustain us. As the final report of the TRC describes, "If human beings resolve problems between themselves but continue to destroy the natural world, then reconciliation remains incomplete. This is a perspective that the Commissioners repeatedly heard: that reconciliation will never occur unless we are also reconciled with the earth" (2015, p. 18).

To constructively and responsibly navigate the complex and unfolding water issues we face today, both within and beyond Indigenous communities, there is a foundational need to engage in ongoing dialogue to learn how we can work together in partnership across diverse cultures and knowledge systems. As such, this thesis is about exploring how we may begin to create that space, within, through, and beyond research.

LITERATURE REVIEW

This section presents an overview of the literature to contextualize our research and provide conceptual grounding for key concepts relating to this work. Section One offers

² Drinking water advisories are based on the results of water quality tests, and aim to protect the public from drinking water that is potentially unsafe, or confirmed to be unsafe. Different types of drinking water advisories include boil water advisories, do not consume advisories, and do not use advisories (Health Canada, 2017).

background information relating to Indigenous peoples in Canada and the history of Indigenous and non-Indigenous relations; Section Two moves on to explore the need for, and nature of, the movement towards decolonizing research; and Section Three brings these discussions together in the context of water issues faced by Indigenous peoples in Canada, laying the groundwork for the research presented in Chapters Two and Three.

Section One: Indigenous peoples in Canada

Indigenous peoples are the original inhabitants of what is now Canada, and have lived here for millennia. There are stories among the Mi'kmaw, for example, that relate back to the time of the megafauna, with archaeological findings that similarly attest to human interaction with these large mammals,³ as long as 12,000 to 15,000 years ago (Waters & Stafford, 2013). Inuit and their ancestors have inhabited the Northern-most areas of Canada for approximately 5,000 years, with their ancestors having traveled from the north coast of Alaska, east across Canada, to as far as southern Greenland (ITK, n.d.). For many Indigenous peoples, they have simply been here since time immemorial (RCAP, 1996), with diverse creation stories teaching of human orientation to, and relations with, the natural world (McGregor, 2004). By the time Europeans began arriving in the late 15th century, the territories of highly diverse Indigenous communities, societies, nations, and confederacies spanned the entire geographic area of what is now Canada (RCAP, 1996). Each Indigenous nation, culture, and people have their own unique history, stories, and relationships with their homelands, which developed over thousands of years.

Today, over 1.4 million people in Canada self-identify as Indigenous, representing 4.3% of the total population (Statistics Canada, 2013). Indigenous peoples are also the fastest growing, and youngest population nationally (Statistics Canada, 2013). The Constitution Act, 1982, recognizes three Indigenous groups in Canada: First Nations, Inuit, and Métis peoples (Table 1.1). There is immense diversity both within and between these groups. For example, there are over 600 different First Nations governments/bands across Canada, and over 60 Indigenous languages currently spoken (Statistics Canada, 2013).

Nearly half of Canada's land mass is covered by historic (pre-1975) treaties with First

³ Clifford Paul, Membertou First Nation, *personal communication*.

Nations peoples (Figure 1.1). A long history of treaty-making amongst many Indigenous nations in North America predates European contact.⁴ These treaty processes were “grounded in the worldviews, language, knowledge systems, and political cultures of the nations involved,” a key aspect of which was a commitment to ongoing renewal of treaty relationships (Simpson, 2008, p. 29). Early treaties with Europeans, such as the Peace and Friendship Treaties, began in the Eastern parts of the country during the 17th and 18th centuries, and were focused on peaceful co-existence, and military and economic alliance, rather than the acquisition of land (Vowel, 2016). Later treaties of the 19th and early 20th century, however, such as the Robinson and Douglas Treaties and the Numbered Treaties, were increasingly related to land dispossession, and assertion of colonial policy (particularly through the Indian Act, 1876), and their interpretation and fulfillment remains contentious (Auditor General of Canada, 2006; RCAP, 1996). There are also many First Nations that did not enter into historic treaties with the Crown, particularly in British Columbia.⁵

First Nations people represent approximately 60% of the Indigenous population in Canada (Statistics Canada, 2013). Ontario and British Columbia have the highest total population of First Nations people, while First Nations individuals account for the greatest proportion of the total population in the Northwest Territories, followed by Yukon, Manitoba, and Saskatchewan (Statistics Canada, 2013).

The majority of Inuit in Canada (73.1%) live in the Arctic and sub-Arctic regions known as Inuit Nunangat, meaning ‘Inuit homelands’ (Figure 1.2) (Statistics Canada, 2013). Inuit Nunangat is comprised of the land, water, and ice in four regions settled under land claim agreements with the Government of Canada: Inuvialuit in the Northwest Territories, the territory of Nunavut, Nunavik in Northern Quebec, and Nunatsiavut in Labrador. NunatuKavut is a fifth Inuit region in Labrador, with a pending land claim that was filed in 1991. Within Inuit Nunangat, Inuit are the majority population and live in predominantly small, remote, coastal communities (Statistics Canada, 2013).

⁴ For a discussion of the nature of treaties and treaty-making from a Nishnaabe perspective see Simpson (2008).

⁵ Modern treaty negotiations – which take place between Indigenous nations that are not part of historic treaties, and both federal and provincial/territorial governments – have resulted in the resolution of 26 comprehensive land claims, and four self-government agreements to date (INAC, 2015). In British Columbia, the BC Treaty Commission oversees modern treaty negotiations, and all First Nations in the province are eligible to enter into the negotiation process (INAC, 2016).

Métis peoples in Canada emerged as a distinct nation in the Northwest during the 18th and 19th centuries, and trace their roots to mixed European and First Nation ancestry (Métis National Council, n.d.). Métis communities developed along the routes of the fur trade, and traditional Métis Nation homelands include parts of what are now Manitoba, Saskatchewan, and Alberta, extending into Ontario in the east, and British Columbia and the Northwest Territories in the west (Métis National Council, n.d.). Today, the majority of Métis people (84.9%) live in either the western provinces or in Ontario (Statistics Canada, 2013).

Colonial legacies

Comprehensive and voluminous reports from both the Royal Commission on Aboriginal Peoples (RCAP, 1996), and, more recently the Truth and Reconciliation Commission (TRC, 2015), have documented and called attention to the oppressive and assimilationist policies pursued by successive Euro-Canadian governments well into the 20th century, and their profound, and continued, impact on the lives of Indigenous peoples. Calling the pursuit of such policies an act of “cultural genocide” the TRC reflected, “For over a century, the central goals of Canada’s Aboriginal policy were to eliminate Aboriginal governments; ignore Aboriginal rights; terminate the Treaties; and, through a process of assimilation, cause Aboriginal peoples to cease to exist as distinct legal, social, cultural, religious, and racial entities in Canada” (2015, p. 1).

The extent of abusive policies and human rights violations is well documented, vast, and devastating (RCAP, 1996). The Indian Residential School system, through which more than 150,000 First Nations, Inuit, and Métis children passed, was implemented across Canada, and comprised a central element of assimilationist policy; the expressed intent being to “kill the Indian in the child” (TRC, n.d., “Historical Overview,” Para. 1). The legacy of these policies is reflected today in stark socio-economic and health disparities between Indigenous and non-Indigenous populations (Adelson, 2005; Gracey & King, 2009; King, Smith, & Gracey, 2009), and an erosion of Indigenous peoples’ control over their lands, livelihoods, and resources (RCAP, 1996). As the United Nations Special Rapporteur on the rights of Indigenous peoples, James Anaya, reported in 2014, “It is difficult to reconcile Canada’s well developed legal framework and general prosperity with the human rights problems faced by [I]ndigenous peoples in Canada, which have reached crisis proportions in many respects” (p. 6). Calling for concerted

efforts to address these issues “based on mutual understanding and real partnership with [A]boriginal peoples,” he concluded that, “Indigenous peoples’ concerns merit higher priority at all levels and within all branches of government, and across all departments” (p. 2).

Reconciliation, renewal, and the work of decolonization

A national discourse around reconciliation, and the need for renewed and respectful Nation-to-Nation relationships between Indigenous and non-Indigenous peoples in Canada is gradually gaining momentum. As the TRC wrote in their final report released in 2015, “the urgent need for reconciliation runs deep in Canada. Expanding public dialogue and action on reconciliation beyond residential schools will be critical in the coming years” (p. 8). As the TRC emphasized, “reconciliation not only requires apologies, reparations, the relearning of Canada’s national history and public commemoration, but also needs real social, political, and economic change” (2015, p. 184). It requires the development of “a new vision for Canada; one that fully embraces Aboriginal peoples’ right to self-determinations within, and in partnership with, a viable Canadian sovereignty” (2015, p. 184).

Indeed, over 20 years ago, RCAP was unequivocal in their conviction that in order to alter the trajectory of the troubled relationship between non-Indigenous and Indigenous peoples, “Canadians need to understand that *Aboriginal peoples are nations*. That is, they are political and cultural groups with values and lifeways distinct from those of other Canadians” (1996b, “There can be no peace...” Para. 8, emphasis in original). As RCAP described, this involves recognizing that “though bruised and distorted as a result of the colonial experience, inevitably changed by time and new circumstances, even in danger of extinction in some important dimensions such as language, nevertheless a fundamentally different world view continues to exist and struggles for expression whenever Aboriginal Peoples come together” (1996, p. 612).

As Mohawk scholar Marlene Brant Castellano describes, the struggle for self-determination reflects a desire “to live and thrive as peoples and nations maintaining and expressing distinctive world views and contributing uniquely to the Canadian federation” (2004, p. 102). Essential to reconciliation, then, is the space for Indigenous peoples to engage in the work of revitalizing cultural practices, languages, and ways of knowing in ways that are free from colonial imposition (Simpson, 2011). Indeed, as Brant Castellano articulates, “Fundamental

to the exercise of self-determination is the right of peoples to construct knowledge in accordance with self-determined definitions of what is real and what is valuable” (2004, p. 102). Moreover, the struggle for self-determination extends to being able to apply this knowledge in the governance of Indigenous peoples’ lives and lands (Battiste & Youngblood Henderson, 2000; Borrows, 2002a; Brant Castellano, 2004; Walkem, 2007).

Supporting greater recognition for Indigenous peoples’ rights at the international level is the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which was ratified in 2007 (UNGA, 2007). Though not legally binding, UNDRIP establishes a set of “minimum standards” for member states in upholding Indigenous peoples’ rights to survival, dignity, and well-being; and is considered by the TRC as providing, “the necessary principles, norms, and standards for reconciliation to flourish in 21st century Canada” (2015, p. 21). While Canada was one of the four countries initially voting against UNDRIP, this position was reversed in 2010, with the qualification that the declaration would be considered an aspirational document. A new incoming government endorsed UNDRIP “without qualification” in 2016. Implementation of the declaration, however, will require sustained political will and a commitment to revising existing policy and practice accordingly.

Section Two: Decolonizing research and praxis

Indigenous knowledge

Indigenous cultures and societies around the world have developed distinct and diverse knowledge systems grounded in deep and enduring relationship with their traditional homelands and local ecologies (Battiste & Youngblood Henderson, 2000; Cajete, 2000; McGregor, 2004; McGregor, Bayha, & Simmons, 2010; Simpson, 2004). These dynamic knowledge systems are described as encompassing both the content of the knowledge as well as the many forms and processes through which it is practiced and expressed (Cajete, 2000; McGregor, 2004; Simpson, 2004). While varying definitions of Indigenous knowledge have been offered in the literature (often by non-Indigenous scholars), as Battiste and Youngblood Henderson (2000) note, “Indigenous knowledge is not a uniform concept across all Indigenous peoples; it is a diverse knowledge that is spread throughout different peoples in many layers” (p. 35).

Over the past several decades, there has been growing interest in the value that Indigenous knowledge may bring to diverse fields such as environmental sciences, wildlife biology, natural resource management, climate change adaptation, and ethnobotany, among many others (Bohensky & Maru, 2011; Simpson, 2004; Smith, 2012). This interest has contributed to a body of literature pertaining to the ‘integration’ of Indigenous and Western knowledge systems (Bohensky & Maru, 2011; Evering, 2012).

A broad and salient criticism of many attempts at ‘integration’, however, is that the approaches employed often rely on narrowly conceived understandings of Indigenous knowledge, reducing this knowledge to data that are palatable to, and become subsumed within, Western (often positivist and post-positivist) frameworks of understanding. Such approaches are criticized for offering only “tokenistic” inclusion of Indigenous knowledge by failing to take into account the larger ontological and epistemological orientations of Indigenous knowledge, and leaving unexamined the underlying power dynamics that determine what constitutes knowledge and how it is produced, as well as how it is applied in decision-making processes (Battiste & Youngblood Henderson, 2000; Bohensky & Maru, 2011; Bowie, 2013; Castleden, Hart, et al., in press; Castleden, Martin, et al., in press; Goetze, 2005; Murphy, 2011; Nadasky, 2003; Simpson, 1999, 2004; Smith, 2005; Spak, 2005; Stevenson, 2006). As Simpson (2000) has described, “In order to ‘integrate’ Indigenous knowledge into Western knowledge, Indigenous knowledge has to be constructed and processed into a form that is acceptable from a Western scientific point of view. This means that it needs to be documented or separated from the people who hold this knowledge deep within side themselves. It is also regularly removed from its spiritual foundation, from Indigenous worldviews and the values, morals and relationships that give it meaning” (p. 192).

Conceptual models for working with diverse knowledge systems

To guide more respectful and meaningful approaches to working with diverse Indigenous and Western-based knowledge systems, a number of conceptual frameworks have emerged and are discussed in the literature (Bartlett, Marshall, & Marshall, 2012; Brandt, 2007; Evering, 2012; Martin, 2012; McGregor, 2002; Ransom & Ettenger, 2001; Stevenson, 2006). For example, the concept of Two-Eyed Seeing, developed by Mi’kmaw Elders Albert and Murdena Marshall,

is described as “learning to see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of Western knowledges and ways of knowing, and to using both these eyes together, for the benefit of all” (Bartlett et al., 2012, p. 335). In valuing difference and contradiction over the integration, or melding together, of diverse perspectives, Two-eyed Seeing encourages “a weaving back and forth” between diverse ways of knowing to reach understandings that would not be possible through “one eye” alone (Bartlett, Marshall, & Marshall, 2012; Iwama, Marshall, Marshall, & Bartlett, 2009; Martin, 2012). As Martin (2012) explains, Two-Eyed Seeing “challenges us (Indigenous and non-Indigenous peoples alike) to understand the larger dimensions (physical, social, emotional, spiritual) of our knowledge systems and the limitations and challenges that accompany any single approach to viewing the world” (p. 37).

Another conceptual framework draws from the Two-Row Wampum, or *Kaswentha*, a Haudenosaunee Treaty belt from the 17th century (Mcgregor, 2002; Ransom & Ettenger, 2001; Stevenson, 2006). The belt consists of two rows of purple, and three rows of white, wampum beads running the length of the belt. The two purple rows symbolize the paths of two vessels – one European and one Haudenosaunee – “travelling the river of life together,” but with each society remaining in their own vessel, signifying sovereignty over their own affairs (Ransom & Ettenger, 2001, p. 222). The white rows between and surrounding the purple are described by Ransom and Ettenger (2001) as representing the Haudenosaunee principles of *skennen* (peace), *kariwiio* (good mind), and *kasastensera* (strength). Applied to working with diverse knowledge systems, the symbolism of the Treaty belt emphasizes partnership and cooperation through mutual respect, where each side, or knowledge system, maintains its integrity by “undertaking its own process according to its own worldview. At the same time, the two sides share information and work in partnership on issues of common concern” (Mcgregor, 2002, p. 9). As with the concept of Two-Eyed Seeing, and consistent with Indigenous paradigms more broadly (c.f. Wilson, 2008), there is an appreciation that learning and understanding is enriched through contrasting perspectives offered by diverse ways of knowing.

Decolonizing methodologies

The landmark publication of Linda Tuhiwai Smith’s *Decolonizing Methodologies:*

Research and Indigenous Peoples (1999), brought increased attention to the ways in which the history of scholarly research has been implicated in the larger history of colonialism, and the oppression and marginalization of Indigenous peoples and Indigenous knowledge systems. As Smith notably described, “The word itself, ‘research’, is probably one of the dirtiest words in the Indigenous vocabulary” (1999, p. 1). As Smith, and others have observed, there is a history of Indigenous peoples being subjected to various forms of research, often without benefit, and in some cases suffering harm as a result (Brant Castellano, 2004). For example, there have been instances of data collection and use without informed consent (Glass & Kaufert, 2007; Korsmo & Green, 2002), and Indigenous knowledge has been misrepresented and appropriated, or otherwise ignored and dismissed (Battiste, 2000; Battiste & Youngblood Henderson, 2000; Simpson, 2004; Smith, 2012; Svalastog & Eriksson, 2010).

In this context, research has often failed to address issues of concern to Indigenous peoples and communities in meaningful, effective, and culturally-relevant ways, and has often served to perpetuate colonial power imbalances by considering Western-based, typically positivist, ways of knowing as superior to Indigenous knowledge systems, which through a positivist lens, appear as unscientific and lacking in credibility (Denzin, Lincoln, & Smith, 2008; Smith, 2012). A decolonizing approach to research must therefore critically reflect on what questions are being asked, how knowledge is produced, by whom, and for what purpose (Smith, 2012).

Decolonizing methodologies have been advanced by scholars such as Margaret Kovach (2009), Shawn Wilson (2008), and Bagele Chilisa (2012), and in edited volumes, such as *The Handbook of Critical and Indigenous Methodologies* (Denzin, Lincoln, & Smith Eds., 2008). Together, and with many other voices, these scholars argue for a transformation of the structures and institution of research, and for critically reflecting on the underlying assumptions of what counts as research or ‘evidence’ and how it is produced and shared (Smith, 2012). It is in this way that “the purpose of research becomes more than just the production of knowledge; it upholds pedagogical, political, moral, and ethical principles that resist oppression and contribute to strategies that reposition research to reflect the unique knowledge, beliefs, and values of Indigenous communities” (Martin, 2012, p. 30).

Participatory and collaborative research

Gaining greater control over how research is conducted, and to what ends, has been a priority for Indigenous peoples and a decolonizing research agenda (Bishop, 2005; Brant Castellano, 2004; Denzin et al., 2008; Kovach, 2009; Smith, 2005, 2012). Participatory research has been identified as a methodological approach with the potential to respond to colonial legacies in research by shifting power dynamics in research relationships, and, in so doing, contribute to more meaningful research outcomes in Indigenous contexts (Bishop, 2005; Castleden, Morgan, & Lamb, 2012; Cochran et al., 2008; Gearheard & Shirley, 2007; Kovach, 2005; Peace & Myers, 2012; Richmond, 2015; Simonds & Christopher, 2013; Smith, 2005; Tobias & Richmond, 2014). Minkler (2004) describes community-based participatory research (CBPR) as an umbrella term that encompasses a variety of approaches to research including collaborative inquiry, participatory action research, and other forms of participatory research, defining it as, “a collaborative process that equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community with the aim of combining knowledge and action for social change” (p. 686).

A primary aspect of collaborative and participatory research approaches is an emphasis on shared decision-making, and the engagement of research partners and participants throughout the research process – from the identification of research questions, through data analysis and interpretation, to the dissemination and implementation of project results and outcomes (Israel, Schulz, Parker, & Becker, 1998; Minkler, 2004). Indigenous scholars suggest that such engagement, meaningfully carried out, can help address the potential for misrepresentation or misallocation of Indigenous knowledge (Battiste & Youngblood Henderson, 2000; Brant Castellano, 2004), and is important with respect to researcher accountability to participants (Bishop, 2005). Processes of co-learning that “facilitate the reciprocal transfer of knowledge, skills, capacity, and power,” are also considered fundamental to CBPR and related approaches (Israel, 1998, p. 179). Within Indigenous contexts, the importance of relationships, and taking the time to develop a foundation of respect and trust between researchers and community partners, is also highlighted in the literature (Ball & Janyst, 2008; Bull, 2010; Castleden et al., 2012; Gearheard & Shirley, 2007; Kirkness & Barnhardt, 1991; Roburn, 2012).

When informed by a commitment to decolonizing research processes, collaborative and participatory approaches can support a research agenda that “begins with the concerns of Indigenous people [and] is assessed in terms of the benefits it creates for them” (Denzin & Lincoln, 2008, p. 2). Moreover, in setting into action conceptualizations like Two-Eyed Seeing, such approaches in research can create space for the development of new methods and directions that may arise from the fertile ground of diverse perspectives, and critically examined, and valued, epistemological difference (Bartlett, Marshall, Marshall, & Iwama, 2012). As Smith (2012) has described, the intellectual project of decolonization, “needs radical compassion that reaches out, that seeks collaboration, and that is open to possibilities that can only be imagined as other things fall into place” (p. xii)

Digital media methods

The growing use and accessibility of digital media technologies – such as digital cameras, video cameras, online sharing platforms, and mobile devices (e.g. smartphones and tablets) – are contributing to the introduction of new methods and opportunities for participatory and collaborative approaches in research (Gubrium & Harper, 2013; Nagy Hesse-Biber, 2011). A range of digital media methods are emerging within Indigenous research contexts, which aim to facilitate dialogic processes of knowledge creation, while encouraging engagement and participation in research in positive and culturally-relevant ways. Methods explored in the literature include digital storytelling (Cueva et al., 2013; Cunsolo Willox, Harper, & Edge, 2012; Iseke & Moore, 2011; Wexler, Eglinton, & Gubrium, 2014), participatory video (Petrasek Macdonald et al., 2015; Stewart, Riecken, Scott, Tanaka, & Riecken, 2008), audio-documentary (Restoule, Gruner, & Metatawabin, 2013), and photovoice (Castleden, Garvin, & Huu-ay-aht First Nation, 2008; Healey et al., 2011; Maclean & Woodward, 2013; Moffitt & Vollman, 2004).

Encompassing a range of processes and techniques, these collaborative and participatory media methods together reflect a diverse and evolving field of practice that focuses on media creation processes and products as sites of co-learning and collaborative knowledge building (Buckingham, 2009; Gubrium & Harper, 2013; Kindon, 2003; Milne, Mitchell, & de Lange, 2012; Parr, 2007; Pink, 2013; Tacchi, Watkins, & Keerthirathne, 2009; Wang, 1999; Wang & Burris, 1997). Applied within Indigenous contexts, such methods aim to support ways of

conducting research that more richly and authentically reflect Indigenous ways of knowing, including storytelling and oral traditions (Cunsolo Willox et al., 2012). Stories and storytelling are considered a vital and legitimate source of understanding across many Indigenous cultures and societies (Archibald, 2008; Bishop, 1995; Chamberlin, 2003; Cruickshank, 2000; King, 2003; Kovach, 2009; Smith, 2012), and serve to “connect the past with the future, one generation with the other, the land with the people, and the people with the land” (Smith, 2012, p. 146). Applied within research contexts, Kovach (2009) has described that stories are suited to “the fluidity and interpretive nature” of Indigenous knowledge, supporting research through which holistic, contextualized meaning can arise (p. 94).

Podcasting

Though less widely explored in the literature, podcasting represents another digital medium through which storytelling, and knowledge sharing and co-production may be facilitated. Podcasts are digital audio files made available for ‘on-demand’ streaming or download via the Internet. Like other alternative media, they are credited with bringing greater diversity of voices and perspectives to a public audience (Atton, 2008; Florini, 2015). Feminist scholars Tiffe and Hoffmann (2017), for example, theorize podcasting as a “sonic space” that can be accessed and occupied by traditionally-oppressed voices.

Over the past decade, podcasts have been taken up in a variety of contexts, including by traditional media (such as newspapers, magazines and radio programs), scholarly journals (Picardi & Regina, 2008), advocacy groups and organizations (Waters, Amarkhil, Bruun, & Mathisen, 2012), by academic institutions as an educational platform (Hew, 2009; Kay, 2012), and as a public health education tool (Avery et al., 2010). Though the body of literature relating to podcasting is growing, it is, to date, primarily focused on the medium’s utility as an educational tool to enhance student learning (Fernandez, Simo, & Sallan, 2009; McGarr, 2009; Shim, Shropshire, Park, Harris, & Campbell, 2007), a public health intervention (Turner-McGrievy, Campbell, & Crosby, 2009; Turner-McGrievy, Kalyanaraman, & Campbell, 2013), as well as a new model for public media and communications (Berry, 2016; Ginsburg, 2006).

Section Three: Indigenous peoples and water in Canada

First Nations, Inuit, and Métis communities in Canada face substantial and myriad water-related issues (Basdeo & Bharadwaj, 2013; White et al., 2012). While a comprehensive review is beyond the scope of this Chapter, this section aims to provide an overview of some of the key areas of concern, and offers examples of specific cases to illustrate these issues.

Drinking water

A number of studies and government reports highlight the disparities faced by Indigenous communities in accessing reliable and safe drinking water compared to the rest of Canada (Boyd, 2011; Bradford, Bharadwaj, Okpalauwaekwe, & Waldner, 2016; Galway, 2016; Patrick, 2011; Simeone, 2009; White et al., 2012). A comprehensive assessment of water infrastructure in First Nations communities across Canada found that over half of the communities had water systems that posed a medium to high overall risk to water quality (Neegan Burnside Ltd, 2011). Drinking water advisories, such as boil water advisories, are common in many communities; despite these advisories being intended as a temporary measure to protect public health, some of these advisories have extended several years, or even decades. For example, as of February 28, 2017, Health Canada reported 98 long-term⁶ drinking water advisories, and 28 short-term drinking water advisories in 81 First Nations communities south of the 60th parallel, excluding British Columbia (Health Canada, 2017). Neskantaga First Nation in Northern Ontario has had a boil water advisory in effect since 1995 (Health Canada, 2017). Studies pertaining to a number of Northern Inuit communities also document concerns with respect to drinking water quality and access (Daley, Castleden, Jamieson, Furgal, & Ell, 2014; Daley et al., 2015; Goldhar, Bell, & Wolf, 2013; Hanrahan et al., 2014). The potential impacts of climate change on water security and safety in Northern Inuit communities has also been highlighted in the literature (Goldhar, Bell, & Wolf, 2014; Harper, Edge, Schuster-Wallace, Berke, & McEwen, 2011; D. Martin et al., 2007).

Flooding

Seasonal flooding is an issue for a number of First Nations communities (INAC, 2017b;

⁶ A drinking water advisory that has been in effect for more than one year is classified by Health Canada as long-term.

Auditor General of Canada, 2013). For instance, the Northern Ontario First Nation community of Kashechewan, is located on a flood plain and has been evacuated every spring for over a decade (von Stackelberg, 2017). In Manitoba, Peguis First Nations, which was relocated to an area that is mainly marshland after their land was illegally seized in 1907, similarly faces annual flooding (Fontaine, 2017). An engineering assessment concluded that the community, together with another First Nations reserve north of them, “undergo flooding more frequently and are more severely impacted than most other communities in Manitoba” (AECOM Canada, 2009, p. 80). Water damage to homes, including mould, exacerbates existing issues related to inadequate housing common to many Indigenous communities in Canada, and stress and anxiety related to repeated seasonal flooding and evacuations have been reported by community members (Shimo, 2016).

Hydroelectric development

Large-scale hydroelectric development is another issue that has, and continues to, impact Indigenous peoples in Canada (Calder, 2016; RCAP, 1996; Waldram, 1988). A recent study concluded that 90% of proposed Canadian hydroelectric projects may expose local Indigenous populations to methylmercury through accumulation of the neurotoxin in water and aquatic species when land and organic materials become submerged (Calder et al., 2016). This may be reduced through clearing of the land prior to flooding; however, in the recent case of the Muskrat Falls hydroelectric project in Labrador, proponents refused to do so despite independent peer-reviewed evidence that the resultant contamination of wild food would expose hundreds of Inuit to methylmercury levels exceeding Health Canada guidelines (Schartup, Balcom, Soerensen, Gosnell, & Calder, 2015). Concerted opposition by Inuit leaders and community members through 2016, including protests at the site as flooding was set to begin, finally led to an emergency meeting between Indigenous leaders and the Premier of Newfoundland and Labrador to reach an agreement on proceeding that would be acceptable to all parties (The Canadian Press, 2016).

In British Columbia, the controversial development of the Site C dam is another recent example of the impacts of hydroelectric development on Indigenous peoples, and issues surrounding appropriate consultation and accommodation. When complete, the Site C dam will

flood more than 5,500 hectares of land along the Peace River in Treaty 8 territory, and has been opposed by First Nations in the territory since the project was first proposed in the 1970s (Treaty 8 Tribal Association, 2015). First Nations in the area have already been impacted by two other hydroelectric dams on the river that were built in the 1960s and 1980s, the first displacing the Tsay Keh Dene First Nation (Shimo, 2016), and both contributing to the loss of vast areas of wetlands and important wildlife habitat (Treaty 8 Tribal Association, 2015). An environmental assessment for Site C began in 2013, and was conducted jointly by the federal and provincial governments. Treaty 8 First Nations participated in this process, and the Joint Review Panel concluded that the impacts of the project would cause a “significant adverse effect” on fishing, hunting, and other traditional uses of the land for these First Nations, as well as on physical and cultural heritage resources (which include sacred archeological sites and burial grounds) (Bakker et al., 2016). In the summer of 2016, the federal government issued the required permits for the project to proceed (Trumpener, 2016).

Contamination

Contamination of rivers, lakes, and other natural waterways from resource extraction, hydroelectric development, agricultural practices, waste disposal, and industrial activity are another substantial concern for many Indigenous peoples with close cultural and subsistence ties to the waterbodies in their traditional homelands (Arquette et al., 2017; Blackstock, 2001; Basdeo & Bharadwaj, 2013). One long-standing and well-documented case of the adverse impacts of industrial pollution is that of Grassy Narrows First Nation in Ontario, which has been exposed to high levels of methylmercury for over 40 years due to effluent from a pulp and paper mill that was operating in Dryden, Ontario in the 1960-70s. Community members have suffered from neurologic symptoms associated with mercury poisoning, as well as loss of livelihoods through subsistence and commercial fishing and hunting, and gathering of wild rice (Harada et al., 2011; Takaoka et al., 2014; Wheatley & Paradis, 1995). Earlier this year, the government of Ontario confirmed their commitment to implementing a comprehensive remediation plan to reduce methylmercury levels in the river system, following requests for cleanup by the First

Nation that have spanned decades (Porter, 2016, 2017).⁷

In Arctic regions, environmental contaminants (e.g. heavy metals, polychlorinated biphenyls, and other persistent organic pollutants) and their bioaccumulation in fish and marine mammals have been widely studied through the federal government's Northern Contaminants Program, which began in 1991. Fish and marine wildlife species are important to the diets of Inuit and other northern Indigenous peoples, and human health implications from exposure to high levels of contaminants in these species is explored in the literature (Donaldson et al., 2010; Van Oostdam et al., 2005).

Governance

Issues related to water governance are also examined in the literature and in reports prepared by Indigenous groups (c.f. Lavalley, 2009). As Simms, et al. (2015) describe, "Indigenous peoples in Canada have historically been – and largely continue to be – excluded from colonial governments' decision-making and management frameworks for freshwater" (p. 6). Though there is growing recognition of the need to include Indigenous communities and nations in water governance processes, options for participation tend to take the form of engagement as one among many stakeholders (other stakeholders would be, for example, industry, citizen groups, and farming organizations), and therefore often fail to respect and acknowledge the unique status of Indigenous peoples, and a Nation-to-Nation relationship (Castleden, Martin, et al., in press; Simms, Harris, Joe, & Bakker, 2016; von der Porten & de Loë, 2013). Furthermore, Indigenous peoples' perspectives, knowledge, and values regarding water generally have not been meaningfully considered and implemented through past and current water management regimes (Castleden, Hart, et al., in press; Castleden, Hart, Cunsolo, Harper, & Martin, 2017; McGregor, 2012; Walkem, 2007). With respect to addressing persistent water-related challenges in Indigenous communities, this has contributed, in part, to narrowly conceived approaches to resolving these issues that tend to focus on financial and technological 'fixes,' which alone are seen as insufficient in addressing the full nature and extent of Indigenous peoples' concerns (Basdeo & Bharadwaj, 2013; Castleden, Martin, et al., in press; Mascarenhas, 2007; McGregor, 2008, 2012; Walkem, 2007).

⁷ The community of Grassy Narrows has also faced issues related to flooding, relocation of their community, and the impacts of large-scale logging in their territory (Amnesty International, 2009).

STUDY CONTEXT AND RATIONALE

The research presented in this thesis grew out of a larger Canadian Water Network-funded project that grappled with the persistence of these water-related challenges faced by Indigenous peoples in Canada. In particular, the larger project sought to identify, synthesize, and evaluate methods and models in water research and management that aim to implement both Indigenous and Western-based sciences together in addressing these concerns (Castleden et al., 2015). Grounded in the principles of collaborative and participatory research, this project was guided by a National Advisory Committee (NAC) comprised of Indigenous and non-Indigenous researchers and knowledge-holders from across Canada. The project began with a National Water Gathering (June 2014) to engage the NAC as well as other invited Indigenous and non-Indigenous water researchers and knowledge holders. This Water Gathering provided foundational guidance for the research team in proceeding with two subsequent phases of the project: (1) a systematic realist literature review (Castleden, Hart, et al., in press); and (2) in-depth interviews with academic and community-based researchers involved in integrative water research that sought to implement Indigenous and Western knowledge together (Castleden, Martin, et al., in press). A second Water Gathering (June 2015) allowed us to return together as group to discuss preliminary results, and to co-create recommendations for future integrative work that brings Indigenous and Western knowledge together.

The literature review and interviews with water-researchers contributed to a better understanding of the current state of practice of integrative approaches in water research and management. In particular, the findings from the literature review revealed a recognition that respectful Nation-to-Nation relationships are needed to move forward with meaningful water research, management and policy; that “tokenistic” inclusion of Indigenous knowledge is no longer considered acceptable practice; and that implementation of Indigenous knowledge when moving research to policy and decision-making processes remains limited (Castleden, Hart, et al., in press). Identified gaps in the literature included a predominant reliance on Western-based research methods; as well as a lack of studies that considered water beyond the context of drinking water, and therefore tended to ignore gendered, generational, and emotional and spiritual connections to water (Castleden, Hart, et al., in press). Interviews were conducted with individuals involved in exemplar projects identified through the literature review (Castleden,

Martin, et al., in press). Thematic analysis revealed broad themes around diverse understandings of water; the need to move beyond dichotomous thinking with respect to Indigenous and Western knowledge; the perpetuation of colonially-inscribed roles in water research and management; and the need for innovative strategies to effectively implement integrative water research and management (Castleden, Martin, et al., in press; Castleden et al., 2017).

Through ceremony, storytelling, and dialogue facilitated by a sharing circle format, the Water Gathering events were integral to the co-learning journey that this project embodied. During the first Water Gathering, and in subsequent consultations with the NAC, participants and project partners in this research expressed a strong desire to see the emergent sense of goodwill stemming from this work and the powerful Water Gathering dialogues inform the broader discourse around water in Canada. In this way, we sought to expand the contributions of the project beyond water research and management as conventionally conceived, to explore, through a collaborative storytelling approach, how we live with, and relate to, water. It was this goal that informed the development of the research presented in this thesis, and the collaborative creation of the *Water Dialogues* podcast, a three-part audio-documentary piece that centered around the second Water Gathering event.

Research Objectives and Rationale

This research was motivated by the request of project partners and participants for dialogic contributions and public outreach within the context of the larger Canadian Water Network-funded project. This research was also informed by, and sought to provide a contribution towards, the identified need for decolonizing approaches in research that are inclusive and reflective of Indigenous ways of knowing, including storytelling. In this way, this research also responds to the gaps that our systematic review of the literature highlighted, insofar as it seeks to move beyond predominant or conventional Western-based research methods and approaches, and to be inclusive of holistic and relational understandings of water. The overarching goal of this research was, therefore, to explore how we may create space within and beyond research for respectfully engaging and mobilizing the essential contributions of Indigenous peoples' perspectives, wisdom and knowledge around water. Specifically, the research objectives of this thesis were to,

1. Examine the use of collaborative podcasting as a research method of critical inquiry and knowledge mobilization, and its potential contribution to decolonizing methodologies, using *the Water Dialogues* podcast as a case study example (Chapter 2).
2. Explore First Nations, Inuit and Métis perspectives around how we live with, and relate to, water in Canada; and examine what the inclusion of Indigenous voices, lived experience, and ways of knowing around water mean for water policy and research (Chapter 3).

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Table 1.1 Population of self-identified First Nations, Inuit, and Métis peoples reported in 2011 National Household Survey (Statistics Canada, 2013).

Indigenous group	Population	Percentage of Indigenous population
First Nations	851,560	60.8
Métis	451,795	32.3
Inuit	59,445	4.2

Note: An additional 11,414 people (0.8% of Indigenous total) reported multiple Indigenous identities, and 26,475 (1.9% of Indigenous total) reported other Indigenous identities.

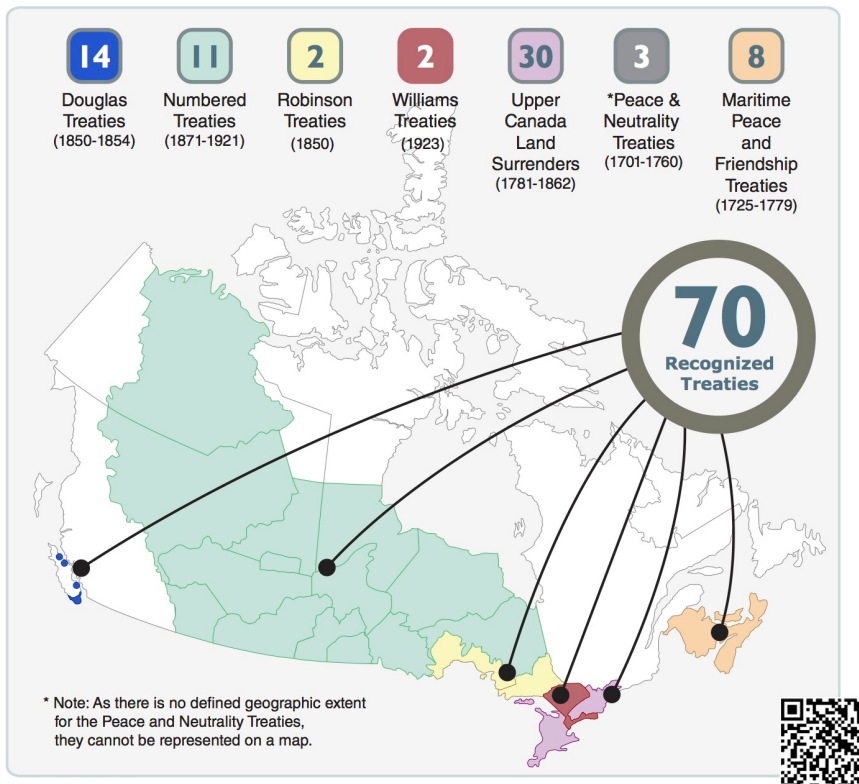


Figure 1.1 Map of historic treaties in Canada, covering approximately half of Canada's landmass. Source: "Historic Treaties and Treaty First Nations in Canada," AANDC, <https://www.aadnc-aandc.gc.ca/eng/1380223988016/1380224163492>, accessed April 14, 2017.



Figure 1.2 Map of Inuit Nunangat. Inuit Nunangat is comprised of the land, water, and ice in four regions settled under land claim agreements with the Government of Canada: Inuvialuit in the Northwest Territories, the territory of Nunavut, Nunavik in Northern Quebec, and Nunatsiavut in Labrador.

CHAPTER TWO

The expanding digital media landscape of qualitative and decolonizing research: Examining collaborative podcasting as a research method

We have three ears to listen with. Two on the sides of our head and one in our heart.

Quoted by Joanne Archibald
(2008, p. 76)

ABSTRACT

Technology of the 21st century has transformed our ability to create, modify, store and share digital media and, in so doing, has presented new possibilities in how social science research can be conducted and mobilized. This paper introduces the use of collaborative podcasting as a research method of critical inquiry and knowledge mobilization. Using a case study example, we describe the methodological process that our transdisciplinary team engaged in to create the *Water Dialogues* podcast, a collaborative initiative stemming from a larger research project examining approaches to implementing Indigenous and Western knowledge in water research and management. We situate collaborative podcasting within an expanding field of collaborative and participatory media practice in social research, and consider how the method may align with, and support research within a decolonizing agenda.

INTRODUCTION

Continually emerging and evolving technologies have transformed our ability to create, modify, store and share digital media and, in so doing, have presented new possibilities in how social science research can be conducted and mobilized. The growing use and accessibility of digital media technologies – such as digital cameras, online sharing platforms, and mobile devices (e.g. smartphones and tablets) – offers new tools and opportunities for augmenting, enriching, and introducing new collaborative dimensions to established and emergent methods of inquiry (Nagy Hesse-Biber, 2011). Indeed, methods such as digital storytelling (Cunsolo Willox, Harper, & Edge, 2012; Gubrium, 2009; Gubrium & Turner, 2011; Lambert, 2013), PhotoVoice (Castleden, Garvin, & Huu-ay-aht First Nation, 2008; Catalani & Minkler, 2010; Wang, 1999;

Wang & Burris, 1997), participatory video (Kendon, 2003; Milne, Mitchell, & de Lange, 2012; Petrusek Macdonald et al., 2015), and other community-based and collaborative approaches to audiovisual media production (Chalfen, 2011; Chávez et al., 2004; Mitchell & de Lange, 2011; Parr, 2007; Pink, 2013; Schleser, 2012; Tacchi, Watkins, & Keerthirathne, 2009) illustrate the synergies that researchers are finding between (increasingly digital) media modalities, creative practice, and participant-centred approaches in research.

Encompassing a range of processes and techniques, these collaborative and participatory media methods together represent an evolving, dynamic and diverse field of practice that focuses on media creation processes and products as sites of co-learning and collaborative knowledge building. Grounded in participatory action research (PAR), community-based participatory research (CBPR) and related frameworks dedicated to goals of social justice and equity, these methods seek to deconstruct unequal power dynamics in research relationships through meaningful and equitable inclusion of participants throughout the research and related decision-making processes (Castleden et al., 2008; Cunsolo Willox et al., 2012; Kendon, 2003; Wang & Burris, 1997). Participant-directed media creation facilitated by the increasing uptake of related digital technologies in qualitative inquiry has the potential to serve as a means of prioritizing community concerns, honouring local knowledge and participant expertise, and developing meaningful research outcomes (Gubrium & Harper, 2013).

Thus, our goal for this paper is to outline and describe the process and use of collaborative podcasting, using a case study example from a multi-year, cross-Canada research initiative aimed at integrating Indigenous and Western sciences for better water management and policies, and to learn how to better live with water (Castleden, Hart, et al., in press; Castleden, Martin, et al., in press). We begin with an overview of the literature concerning digital media in the context of decolonizing research. From there, we explore podcasting as a research methodology before laying out our case study. Our discussion of the case concentrates on four key ‘projects’ of a decolonizing research agenda: storytelling, representing, reframing, and sharing. We conclude with critical reflections on our praxis and discuss how collaborative podcasting may contribute to and support research within a decolonizing agenda.

Digital Media and Decolonizing Research

Since the landmark publication of Linda Tuhiwai Smith's *Decolonizing Methodologies: Research and Indigenous Peoples* (1999), research has been increasingly examining the ways in which Indigenous ways of knowing have been subjugated, subordinated, silenced, marginalized, and ignored through Western-based research methods and approaches. As Smith argued, "from the vantage point of the colonized ... the term 'research' is inextricably linked to European imperialism and colonialism. The word itself, 'research', is probably one of the dirtiest words in the Indigenous vocabulary" (1999, p. 1). This push for decolonizing methodologies has been taken up by scholars such as Margaret Kovach (2009), Shawn Wilson (2008), and Bagele Chilisa (2012), as well as Eve Tuck and Wayne Yang (2014), and in edited volumes, such as *The Handbook of Critical and Indigenous Methodologies* (Denzin, Lincoln, & Smith Eds., 2008). Together, and with many other voices, these scholars argue for the transformation of research structures and institutions, and for challenging underlying assumptions about what counts as knowledge and research, and how research should be conducted and disseminated (e.g. Smith 1999).

Decolonizing research and methodologies have demanded new methods and approaches that more adequately, richly, and authentically reflect Indigenous ways of knowing and reflect cultural values and processes, such as oral storytelling and sharing knowledge and wisdom through collective dialogue. In this way, research is "gradually coming to be seen as a potential means to reclaim language, histories, and knowledge, to find solutions to negative impacts of colonialism, and to give voice to an alternative way of knowing and being" (Smith, 2005, p. 91). Participatory media creation processes, such as PhotoVoice (Castleden et al., 2008; Healey et al., 2011; Maclean & Woodward, 2013; Moffitt & Vollman, 2004), participatory photography (Fresque-baxter, 2013), digital storytelling (Cueva et al., 2013; Cunsolo Willox et al., 2012; Iseke & Moore, 2011; Wexler, Eglinton, & Gubrium, 2014), audio-documentary (Restoule, Gruner, & Metatawabin, 2013), and participatory video (Petrasek Macdonald et al., 2015; Stewart, Riecken, Scott, Tanaka, & Riecken, 2008) are being increasingly employed in Indigenous-led and Indigenous-engaged research methods, with promising results for deconstructing power dynamics between 'researchers' and 'researched' and 'Indigenous' and 'non-Indigenous' (Cunsolo Willox et al., 2012), while remaining adaptable to local needs and

contexts. Another digital platform that has not yet been widely explored within the realm of research, but may hold potential as a participatory and decolonizing method, is collaborative podcasting.

Podcasting as a Research Methodology

Podcasts are digital audio files made available on the Internet for downloading or streaming to a computer or mobile device, and are often offered as a series to which listeners can subscribe in order to receive automatic notification when new installments become available.⁸ In contrast to traditional radio broadcast, podcast content can be accessed ‘on-demand’ providing listeners control over when, where, and how they listen. In addition, technological advances contributing to lower-cost digital recording equipment and audio-editing software, together with the growth of online sharing platforms and Internet access, have opened up the possibilities of podcast creation (i.e. podcasting) to a greater range of potential producers (Berry, 2006; Bottomley, 2015). Indeed, as a form of alternative media, podcasts are credited with bringing a greater diversity of voices and perspectives to a public audience (Atton, 2008; Florini, 2015), and providing a “sonic space” for traditionally-oppressed voices (Tiffe & Hoffmann, 2017), recognizing that access to technology to produce and receive podcasts is still ‘a privilege’ – not yet a universal.

As a communication medium, podcasts offer a great deal of flexibility in terms of how audio material is presented and may, for example, consist of anything from a recorded lecture, speech, or interview, to a highly produced and richly textured narrative documentary with multiple voices, sounds and music. In contrast to radio, podcasts need not run to specified time lengths to fit within programming schedules, and, when produced independently, leaves control over content, style, and editing in the hands of the creator(s). As an aural medium, podcasts also share with other audio formats the unique affective qualities associated with communicating through (recorded) sound (McHugh, 2012), and generally require less expertise and equipment to produce than video and film. In addition, audio-recording may be less intrusive and/or disruptive than the use of video cameras (McHugh, 2014). For the listener, podcasts also have the added advantage of portability, in that they can be listened to on-the-go, or while engaged in other

⁸ As an emergent medium, we note that podcasts have been defined in varying ways in the literature over time. We follow the current definition offered by the Oxford English Dictionary.

activities.

Given their utility and range of potential applications, podcasts have been used in a variety of contexts since their first appearance in 2004, including by traditional media (such as newspapers, magazines and radio programs), scholarly journals (Picardi & Regina, 2008), advocacy groups and organizations (Waters, Amarkhil, Bruun, & Mathisen, 2012), by academic institutions as an educational platform (Hew, 2009; Kay, 2012), and as public health education tool (Avery et al., 2010). While research related to podcasting is growing, the current discourse is focused on examining the role of podcasting as an educational tool to enhance student learning (Fernandez, Simo, & Sallan, 2009; McGarr, 2009; Shim, Shropshire, Park, Harris, & Campbell, 2007), a new tool for public media and communications (Berry, 2016; Ginsburg, 2006) as well as the efficacy of using podcasting as a health promotion tool (Turner-McGrievy, Campbell, & Crosby, 2009; Turner-McGrievy, Kalyanaraman, & Campbell, 2013). Podcasting, however, can be more than a communication tool; indeed, podcasting can be a method of qualitative data collection and analysis, critical inquiry, and knowledge mobilization. When collaborative approaches to design, content, data-gathering and data analysis, and dissemination are used, it can also be another participatory strategy to be mobilized.

BACKGROUND AND CONTEXT: THE WATER DIALOGUES PODCAST

This collaborative podcast initiative arose out of an 18-month transdisciplinary research project, which sought to examine methods and models for bringing together Indigenous and Western knowledge in water research and management (Castleden et al., 2015; Castleden, Hart, Cunsolo, Harper, & Martin, 2017). Globally, Indigenous communities are disproportionately affected by water-related challenges such as freshwater contamination, flooding, lack of access to safe drinking water, and inappropriate and/or inadequate wastewater and drinking infrastructure (M. King, Smith, & Gracey, 2009; Patrick, 2011; Phare, 2009; Simeone, 2009; Toussaint, Sullivan, & Yu, 2005). The inadequacy (and often outright failure) of prevailing approaches to addressing these issues – which are often embedded in colonial structures and policies, and a predominance of Western-based science – has underscored the urgent need for Indigenous leadership as well as equitable and respectful non-Indigenous partnerships with Indigenous peoples to develop strategies that facilitate meaningful inclusion and implementation

of Indigenous knowledge and ways of knowing in water research and management (Basdeo & Bharadwaj, 2013; Boelens, Chiba, & Nakashima, 2006; Mascarenhas, 2007; McGregor, 2012; Walkem, 2007). While approaches to mobilizing Indigenous and Western knowledge together on equitable terms are beginning to emerge, less research has been devoted to assessing and understanding the pathways to, and nature of, their success, or lack of success.

Funded by the Canadian Water Network, this larger research project sought to fill this gap by engaging in a study premised on the principles of collaborative and participatory research, including shared decision-making; co-learning and empowerment through cyclical and iterative processes; knowledge and action for the mutual benefit of all partners; recognition of the strengths and resources of all partners; and valuing, and sharing with partners, all knowledge generated (Castleden et al., 2015). To this end, a National Advisory Committee (NAC) of Indigenous knowledge-holders and other Canadian water experts (policy-makers, engineers, natural scientists, social scientists, and health researchers) was established to guide the research team in the design and implementation of the research. The project began with the first of two National Water Gatherings (June 2014) to engage the NAC and additional Indigenous and non-Indigenous water experts, researchers and knowledge-holders from across Canada in a dialogue around water and how best to proceed with the project, which ultimately included a systematic literature review (Castleden, Hart, et al., in press), and in-depth interviews with academic researchers and community-based partners and knowledge-holders (Castleden, Martin, et al., in press). A second Water Gathering was held one year later (June 2015), allowing us to return together and discuss, as a group, preliminary research findings and next steps.

The research was grounded in a Two-Eyed Seeing approach (Bartlett, Marshall, & Marshall, 2012; Martin, 2012), a Mi'kmaw framework for integrating the strengths of Indigenous knowledge and methodologies alongside Western-based approaches. We were thus mindful of finding ways within our work to honour the perspectives, experiences, stories, knowledge, and wisdom of project partners and participants. The NAC also emphasized the importance and value of sharing this research and our team's co-learning journey with a wide audience, including the sense of goodwill and meaningful relations that informed, and were generated through, the Water Gathering dialogues and collaborative research process.

The expressed need to ensure that these dialogues transcended us and were heard by

others motivated our desire to explore multi-media methods that could complement other data gathering strategies and facilitate broad dissemination beyond conventional academic peer-reviewed publications. We sought to do this in ways that would be resonant with Indigenous methodologies, while simultaneously promoting, sharing, and celebrating Indigenous perspectives, knowledge, ways of knowing, and sciences around water. In addition, we also sought a method that would be amenable to a collaborative approach, while fitting within the context of a broad national-scale project designed around two in-person gatherings. Given the context in which we were working, and the desire for knowledge sharing, we considered that podcasting could provide a promising medium and method, given its potential to weave together multiple voices and perspectives in an accessible and engaging format. Thus, with the support of the NAC and Water Gathering participants, we embarked on a project to pilot the use of collaborative podcasting as a knowledge mobilization tool, both facilitating data gathering and also representing data in and of itself.

THE COLLABORATIVE PODCASTING PROCESS

Given the noted lack of literature regarding the use of podcasting as a research method, we describe our process here, presented in six stages (Figure 2.1). Though described in a step-by-step manner, we note that the creation of the podcast was very much an iterative and reflective process throughout its production. This research protocol received Research Ethics Board approval from the University of Guelph, Queen's University, and Cape Breton University.

Stage One - *Audio collection*

Podcasting requires the gathering of data in audio form, and in our case, the second National Water Gathering event held as part of the larger research project provided the main venue for data collection. The 32 attendees included the NAC and core research team, as well as a cross-section of water researchers and knowledge-holders from First Nations, Inuit, and Métis communities and organizations across Canada, the majority of whom had participated in the initial Water Gathering. Through ceremony, storytelling, and dialogue, the purpose of the second Gathering was to share and discuss preliminary research findings, co-develop recommendations, and to reconnect with one another as we continued to build relationships through the research process (Hart et al., 2015).

With written and informed consent from all participants, the full proceedings of the one-day Gathering were audio-recorded.⁹ Group dialogue was facilitated through a series of three sharing circles (Lavallée, 2009; Tachine, Yellow Bird, & Cabrera, 2016), a format that differs from focus groups as it provides an equal opportunity for everyone to participate because each person has a turn to speak going around the circle (Figure 2.2). This approach to group dialogue (also referred to as ‘talking circles’) encourages respectful and attentive listening, and fosters collaborative learning through an emergent and reflective process of sharing and inquiry (Graveline, 1998; Wilson, 2008). In addition, short one-on-one interviews, ranging in length from seven to 25 minutes, were conducted with 18 of the participants. These interviews were conducted on an opportunistic basis during breaks (with two interviews conducted in the days immediately following the Water Gathering), and with the aim of prioritizing Indigenous voices. Though a general interview guide was developed, the interviews were predominantly unstructured and conversational in nature (Kvale & Brinkmann, 2009). The interviews provided an opportunity to delve deeper into topics and experiences shared during the circle, and allowed participants to focus on what they felt was most important with respect to the purpose of the podcast and larger research project. Together, the sharing circles and interviews provided a rich foundation for the podcast, both aurally and with respect to the content of what was shared. To provide additional sound elements with which to craft the podcast, ambient sounds from the Water Gathering were also recorded, as well as natural water sounds (e.g. rain, a river flowing), which were recorded elsewhere.

Stage Two - *Review and Analysis*

In total, approximately 12 hours of recordings were collected, and a research team was assembled to assist with the task of determining how to meaningfully organize and present the material through the podcast. Three volunteers from among the Water Gathering participants, representing First Nations and Inuit perspectives, identified their willingness to be involved (an option offered to all participants), and worked together with the core research team through two

⁹ Two Zoom-H5 digital multi-track recorders hooked up to two Apex Pencil condenser microphones set up on stands at either end of the gathering space, and the venue’s Public Address (PA) system were used to record the group discussion. An Olympus Linear PCM Recorder with an Audio-Technica ATR-3350 lavalier omnidirectional condenser microphone was used for one-on-one interviews, with an Olympus VN-7200 digital voice recorder running as back-up. Audio was recorded in uncompressed .WAV format, with the exception of the PA system recording, which was MP3 format.

conference calls, as well as email correspondence, to inform the podcast's creation throughout the production process. Analysis followed a multistage, iterative process that involved immersion in the material; identification of key themes; and selection of quotes for potential inclusion in the podcast. Audio-recordings were imported into an audio-editing software program (Hindenberg Journalist, Version 1.5, 2015) and were transcribed with time codes noted in the margin to create a complete audio log of the Water Gathering proceedings and interviews.¹⁰ Through multiple readings and re-listening to the material, notes were added to highlight the nature of what was said, as well as how it was said (e.g. tone, pacing, emotive power). Thematic categories through which the content could be summarized were identified inductively, and were presented to, and discussed with, the research team to further develop and refine key themes and messages to be explored through the podcast. Three overarching themes were identified: relationships and responsibilities to water; confronting colonialism in the water sphere; and, working together across diverse knowledge systems to improve how we live with water (Chapter 3). Quotes of sufficient sound quality¹¹ were then organized in a word document by theme, sub-theme, and other story elements (e.g. Water Gathering context).

Stage Three - *Sequencing and Structure*

Through discussion with the research team, it was decided that narration within the podcast would be kept to a minimum, in order to allow the stories, experiences, and insights shared by participants to speak for themselves. While all recorded content was considered in the analysis stage, it was necessary to significantly, and selectively, reduce the amount of material to be included in the podcast in order to create a coherent and engaging representation of the larger research findings and Water Gathering dialogue. This was a challenging process, with the research team again providing important guidance. During a second conference call, a number of audio-quotes were played so the team could provide feedback in terms of their fit and potential placement. We sought to prioritize material that would illustrate various dimensions of the key themes through diverse perspectives and experience, and that could be woven together in such a way as to create a cohesive and authentic narrative around the Water Gathering dialogue.

¹⁰ The data were not de-identified, with consent, due to the nature of the project.

¹¹ Occasional and intermittent noise interruptions (e.g. doors slamming, cups dropping, issues with the PA system) rendered some segments of the recordings unusable for sharing via the podcast.

Framing the podcast narrative around the structure of the Water Gathering itself, we chose to develop a long-form audio-documentary piece, ultimately told in three parts, rather than to produce a series of shorter episodes with a specific focus to each. Indeed, much like the sharing circle dialogue during the Water Gathering, the podcast structure came to follow a more circuitous path, with concepts, ideas, or issues raised or foreshadowed, then revisited later in nuanced ways, thus eliciting a layered and contextualized understanding as the podcast unfolds.

Assembly of the component parts also followed an iterative process that took place both on paper with transcribed text, and digitally with the audio-files. Key segments of text were printed, cut out, and arranged (and re-arranged) on Bristol board, then considered aurally by arranging the selected components of the audio-files in a parallel form in the editing software. This process involved a further refining of material to be included through an approach similar to a constant comparative method (Boeije, 2002; Glasser, 1965), whereby choices to include or exclude elements of the selected material were weighed against the ability of other quotes to convey a similar idea or insight, albeit through a different expression, voice, or experience. Ultimately, quotes were included based on consideration of a range of factors including their sound quality, resonance with key themes, affective quality, level of technical language (which we sought to minimize), their ability to be woven into the fabric of the larger piece in an interconnected way, and a desire prioritize Indigenous voices while also presenting the diverse geographic and cultural perspectives, and areas of expertise represented within the group. In total, the voices of 17 participants were included,¹² with all 32 Water Gathering participants thanked and acknowledged in the closing credits.

Stage Four - *Sound editing*

With the contributor-based content in place, the limited narration (scripted and recorded in draft form), music, and natural and ambient sounds were added through the audio-editing software to assist with pacing, mood, and context. Similar to the way in which “rich, thick description” may be used in written presentations of qualitative research to help “transport

¹² Of the 17 participants whose quotes were included in the finished piece, 15 had been interviewed, though quotes from these interviews were not included in all cases. Of the 3 participants that were interviewed and whose quotes did not appear in the podcast, 2 were non-Indigenous participants, while the other was not included for the reasons cited regarding selection of quotes, including, in particular, the (in)ability to be woven into the fabric of the larger piece, as well as use of technical language.

readers to the setting and give the discussion an element of shared experience” (Creswell, 2009, p. 192), these additional sound elements helped create a more nuanced depiction of the Water Gathering event and dialogue through an aurally textured soundscape. In some segments, the layering of voices and sounds also allowed for a more poetic expression and exploration of meaning, as is the case in arts-based (including digital media) approaches to research (Smith & Dean, 2009).

Following approval of the final draft (stage five, below), and with the assistance of a small knowledge translation grant, an audio engineer was hired to optimize sound levels and provide professional sound editing. The final narration was also recorded at a professional studio for consistency of sound.

Stage Five - *Participant review*

A script of the draft podcast was created as a textual representation of the content and included transcribed quotes noting the context (i.e. sharing circle or interview) and contributor name, narration, and a description of sound effects, music, and transitions (e.g. ‘fade under’) (Appendix A). This script was shared with the research team, together with the audio-file for listening, to allow for ease of feedback via ‘track-changes.’ Once the team’s suggestions were incorporated, a revised audio draft was shared first with all participants whose voices were included, and then following their approval and support, for review by all other Water Gathering participants as a means of soliciting feedback and identifying and addressing any potential concerns.

Stage Six - *Public release and dissemination*

A website with a dedicated webpage was created to host the podcast in an open access format, where it can be streamed or downloaded at any time (www.WaterDialogues.ca). Upon its release in May 2016, the podcast was promoted via social and other news media, and through conference presentations. In addition, it has been included as a required listening assignment in a graduate level course offered jointly by the University of Guelph, University of Toronto, University of Northern British Columbia, and Université du Québec à Montréal (Ecosystems Approaches to Health, Summer 2016), and aired on local radio (CFRU 93.3FM, October 2016).

At the time of writing, the podcast website has been accessed by 10, 716 unique visitors.¹³

CONTRIBUTIONS TO DECOLONIZING METHODS: A CRITICAL REFLECTION

In reflecting on how collaborative podcasting may be applied within, and have the potential to contribute to, a decolonizing research agenda, we draw on Linda Tuhiwai Smith's (2012) description of an Indigenous research programme, comprised of a number of interrelated "projects" that Indigenous communities around the world are currently undertaking. In her foundational work, *Decolonizing Methodologies* (2012), first published in 1999, Smith outlines 25 projects through which "a new field of indigenous research is being formed... a field which privileges indigenous concerns, indigenous practices and indigenous participation" (p. 111). United by themes of cultural survival, self-determination, healing, restoration, and social justice, these overlapping projects "have multiple goals and involve different indigenous communities of interest" (Smith, 2012, p. 143). We focus on four of these projects here: storytelling, representing, reframing, and sharing.

Storytelling

Storytelling was immediately resonant with the process of creating this collaborative podcast. Stories are a powerful medium for conveying meaning, knowledge, and understanding, and maintain a privileged place across diverse Indigenous cultures and oral traditions (Archibald, 2008; King, 2003). As Smith describes, qualitative research tools and approaches that foreground Indigenous knowledge, voices, and lived experience through storytelling are integral within a decolonizing research agenda; indeed, "embedded in these stories are the ways of knowing, deep metaphors, and motivational drivers that inspire the transformative praxis that many Indigenous researchers identify as a powerful agent for resistance and change" (2005, p. 89). Conceptualizing story as "both method and meaning," Margaret Kovach highlights the interrelationship between stories, knowing and Indigenous methodologies, suggesting that such approaches support research through which holistic and contextualized meaning can arise (2009, p. 94), while Russell Bishop points to the way in which stories "allow the diversity of truths to be heard" (1995, p. 78).

¹³ This number does not include repeat visits from the same IP address.

Storytelling was a central component of the *Water Dialogues* podcast, both through the dialogic process involved in its creation, facilitated through the sharing circles and supplemental interviews, as well as the multi-voiced narrative shared via the podcast itself. As applied within the context of our research, collaborative podcasting thus provided a platform through which to share and listen to individual and collective stories across diverse perspectives and experiences. Combining “the affective power of sound and voice... with the intimacy of the listening process” (McHugh, 2012, p. 195), the aural and oral nature of audio-based storytelling can make it a particularly engaging medium. With respect to this unique aspect of aural communication, sound scholar Yvon Bonenfant has described, “when we [create] sound... [a] vibratory field leaves us, but is of us, and it voyages through space. Other people hear it. Other people feel it” (in Tiffe & Hoffmann, 2017, p. 116). In addition, the flexibility afforded by podcasting in terms of format and structure further contributed to the suitability of its use as a medium for storytelling within the context of this work. Given the unique place of story in Indigenous cultures and epistemologies, and the responsibility involved in sharing the stories of others in these contexts (Archibald, 2008; Kovach, 2009; Wilson, 2008), the collaborative and deliberative production process outlined in the preceding section, including participant vetting of the podcast content before release, were essential to adapting the use of podcasting within a decolonizing methodological framework.

Representing

The project of representing “spans both the notion of representation as a political concept and representation as a form of voice and expression” (Smith, 2012, p.151). Within research, the project of representing seeks to challenge and address issues of objectification, appropriation and colonization pertaining to the ways in which Indigenous knowledge, perspectives, and lived experience have been collected, documented, and perceived through Western-based approaches. Representation thus relates not only to the ideas, knowledges, and perspectives being shared, but also by whom they are shared, and on what terms.

Aligning with this project, collaborative podcasting offers a pathway for the expression of Indigenous knowledges and worldviews, as well as participant stories, perspectives, and lived experience, shared through the voices of contributors themselves; and provides a discursive space to engage diverse knowledges. Indeed, audio-storytelling methods of inquiry and

representation have the potential to move beyond the limitations and privileging of written text in academia, allowing listeners to encounter the subtle dynamics and texture of the speaker's voice through intonation, emphasis, narrative rhythm, and timing (Lindgren, 2014; McHugh, 2012). These nuances of speech can imbue meaning within dialogue that is not easily detected or conveyed through a reliance on written text alone. In addition, the sparing use of narration in the *Water Dialogues* podcast, which was limited to providing context rather than analysis, allowed participants' stories, insights and experiences shared to 'speak for themselves,' without interpretation. However, as in any process of selecting and condensing empirical materials for presentation, the role of the researcher cannot be overlooked (Buckingham, 2009; Kovach, 2009). The composition of our research team, which included Indigenous and non-Indigenous researchers from multiple regions across the country, assisted in brining a diversity of perspectives to the work. Moreover, our ultimate accountability to participants (Bishop, 2005) and the collaborative approach taken were key elements of navigating the responsibilities of representation in a respectful and ethical way.

Reframing

Related to representing is the project of reframing, which involves achieving "greater control over the ways in which Indigenous issues and social problems are discussed and handled" (Smith, 2012, p. 154). As Smith describes, "The framing of an issue is about making decisions about its parameters, about what is in the foreground, what is in the background, and what shadings or complexities exist within the frame" (2012, p. 154). In this way, reframing is fundamental to knowledge production in decolonizing research that seeks to transcend the categories and concepts rooted in, and perpetuated through, dominant Western-based discourses. As Smith and others (c.f. Battiste, 2000; Kovach, 2009; Simpson, 2011) have noted, the persistence and seeming intractability of many of the issues faced by Indigenous communities can be linked with the ways in which these issues have been perceived and addressed through Western-based frameworks, and the related power-structures in which they are embedded; frameworks and practices that have tended to ignore, devalue or otherwise obscure Indigenous knowledge and ways of knowing, including with respect to water (McGregor, 2012; Walkem, 2007). As a method and medium responsive to engaging the richness of Indigenous languages, knowledge, and oral traditions, collaborative podcasting thus offered a valuable discursive space

for a dialogue around water grounded in and examined through Indigenous perspectives, experiences, values and worldviews. From this convergence and privileging of diverse Indigenous voices emerged a more wholistic, relational dialogue around water, divergent from dominant resource- and rights-based discourses, and unconstrained by the need to filter such understandings through the conventions and structure of traditional academic-based texts.

Sharing

The project of sharing relates to the idea of knowledge as a collective benefit, and the sharing of knowledge as a form of resistance as well as a responsibility of research (Smith, 2012). This project includes sharing within and beyond Indigenous communities, and recognizes that “Indigenous communities also have something to offer the non-Indigenous world” (Smith, 2012, p. 160). Indeed, the dialogue that arose from the Water Gathering and shared in the podcast reflects the transformative potential of sharing stories and reflections about water together in ways that connect knowledge, lived experience, and relationships in a respectful space. In weaving together individual stories, reflections, teachings, and research in a narrative form, collaborative podcasting offers an innovative method for telling nuanced and multifaceted stories while fostering dialogue among diverse peoples and groups. In so doing, collaborative podcasting can contribute to, and support the communication of, increasingly expansive understandings of complex issues within a decolonizing agenda.

As a method of knowledge mobilization and dissemination, podcasting provides an engaging and informative medium for bringing research to a wide audience, accessible across literacy levels (so long as technical/context-specific jargon is avoided), and available at any time through ‘on-demand’ streaming or download via the Internet. This online access requires less bandwidth than video (which may be a concern in areas with poor Internet connection). Radio broadcast, or distribution on a USB stick, provides other potential avenues for sharing. The public nature of podcasting and lack of participant anonymity, however, are important considerations with respect to the suitability of its use as a method of research dissemination, particularly in contexts dealing with sensitive or personal issues, or cultural teachings, stories, and knowledges that are not intended for sharing outside appropriate cultural contexts and protocols.

While we have centered our discussion around four projects, the method of collaborative podcasting could potentially also relate to, and align with, several other decolonizing projects described by Smith (2012), including: testimonies; celebrating survival; indigenizing and indigenist processes; revitalizing and regenerating; connecting; envisioning; gendering; restoring; democratizing and indigenist governance; networking; naming; and, discovering the beauty of [Indigenous] knowledge. We chose to focus on storytelling, representing, reframing, and sharing here, as they are most resonant with our experience in using collaborative podcasting in this research context.

CONCLUSION

Podcasts are continuing to gain traction, popularity, and widespread interest as a method for storytelling in mainstream and alternative media, and are increasingly being employed in educational institutions and contexts. Their use in research, however, is new territory; yet as we have experienced through the use of podcasting in this research context, exciting and rich opportunities exist, both as a research method, and as a sharing and learning platform, particularly within a decolonizing context. Indeed, as Linda Tuhiwai Smith explained, “an important task of Indigenous research in ‘becoming’ a community of researchers is about... creating the space and support for new approaches to research and new examinations of Indigenous research” (2005, p. 92). This resonates with our experience, as a team of Indigenous and non-Indigenous researchers, of collaboratively creating and sharing the *Water Dialogues* podcast, and indicates the important potential that the process of creating a podcast may have as a research method and a knowledge preservation and promotion strategy.

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Figure 2.1 Summary of production stages in creating the *Water Dialogues* podcast. The research team was composed of the core research team and three Water Gathering participant volunteers.



Figure 2.2 Water Gathering photos depicting sharing circle dialogue at the Wabano Aboriginal Health Centre, Ottawa, Ontario. Audio-recordings for the *Water Dialogues* podcast were collected during the second Water Gathering (June 2015) of the larger research project. Group dialogue was facilitated through a sharing circle format where each person has a turn to speak. Photos taken with permission and photo credits to Lori Hoddinott.

CHAPTER THREE

‘The legacy will be the change’: Reconciling how we live with and relate to water

Between earth and earth's atmosphere, the amount of water remains constant; there is never a drop more, never a drop less. This is a story of circular infinity, of a planet birthing itself.

Linda Hogan (1995, p.106)

ABSTRACT

Current challenges and complexities relating to water governance in Canada are motivating calls for approaches that implement Indigenous and Western knowledge systems together, as well as calls to form equitable partnerships with Indigenous peoples in Canada that are grounded in respectful Nation-to-Nation relationships. By foregrounding the perspectives of First Nations, Inuit, and Métis peoples in Canada, this study explores the nature and dimensions of Indigenous knowledge(s) and ways of knowing around water, and examines what the inclusion of Indigenous voices, lived experience, and ways of knowing around water mean for water policy and research. Data were collected during a National Water Gathering that brought together 32 Indigenous and non-Indigenous water experts, researchers, and knowledge-holders from across Canada. Data collection methods included audio-recordings of group dialogue, facilitated through a sharing circle format, along with one-on-one interviews with 18 Water Gathering participants. Data were analyzed thematically through a collaborative podcasting methodology, which also contributed to the production of an audio-documentary podcast as a form of public outreach and knowledge mobilization. Three overarching themes were identified pertaining to: (1) relationships and responsibilities to water; (2) confronting colonialism in the water sphere; and (3) pathways to mobilizing diverse knowledge systems to improve how we live with and relate to water. These findings suggest that water issues faced by Indigenous peoples in Canada can be understood as a form of historic and ongoing environmental dispossession. The findings further illustrate the importance of, and ongoing efforts toward, reclaiming and revitalizing responsibilities and relationships with water in the face of ongoing water challenges.

INTRODUCTION

Water is becoming a priority policy issue worldwide as natural water systems across the globe come under increasing strain from pollution, excessive agricultural and industrial withdrawals, land conversion (e.g. urbanization, deforestation), diversion of waterways, population growth, and the impacts of climate change (Cosgrove & Loucks, 2015; Vörösmarty, McIntyre, Gessner, Dudgeon, & Prusevich, 2010). These pressures and stressors on water systems create issues for water quality and access and, in many cases, perpetuate social inequities that are related to water (UNWWAP, 2015). Though home to one of the world's largest supplies of freshwater, Canada, too, faces myriad water challenges and concerns (Bakker, 2007; Schindler, 2001). In particular, Indigenous communities in Canada face substantial water security issues reflected, in part, by long-standing boil water advisories, and inadequate, absent, or inappropriate water infrastructure (Auditor General of Canada, 2005; Simeone, 2009). For example, as of October 31, 2016, Health Canada (2016) reported 133 Drinking Water Advisories in effect in 90 First Nation communities across Canada – excluding British Columbia¹⁴ – of which 37 have been in place for over a decade, including eight boil water advisories that have continued for over 19 years. With respect to drinking water infrastructure, a comprehensive, independent national assessment commissioned by the Government of Canada between 2009-2011 found that of the 807 drinking water systems evaluated in First Nation communities, 63% posed a high or medium “overall risk to water quality” (Neegan Burnside Ltd, 2011). Studies pertaining to a number of Northern Inuit communities reflect similar concerns regarding access to, and quality of, drinking water (Daley, Castleden, Jamieson, Furgal, & Ell, 2014, 2015; Goldhar, Bell, & Wolf, 2013; Hanrahan, Sarkar, & Hudson, 2014; Wright et al., in press), including concerns regarding impacts of climate change (Goldhar, Bell, & Wolf, 2014; Harper, Edge, Schuster-Wallace, Berke, & McEwen, 2011; Martin et al., 2007).

Yet concerns over water in many Indigenous communities extend beyond drinking water, wastewater, and related infrastructure. Repeated flooding (Auditor General of Canada, 2013;

¹⁴ As part of the British Columbia Tripartite Framework Agreement on First Nation Health Governance, the First Nations Health Authority (FNHA) has assumed responsibility for reporting Drinking Water Advisories for First Nation communities in British Columbia. As of November 30, 2016, the FNHA reported 25 Drinking Water Advisories in effect in 22 First Nations communities in the province.

Ballard & Thompson, 2013), environmental contamination (Harada et al., 2011; K. Smith, Luginaah, & Lockridge, 2010), and declining health of aquatic ecosystems and species habitat (Page, 2007; Prowse, Furgal, Wrona, & Reist, 2009) are other water-related issues that affect Indigenous peoples' health, livelihoods, cultures, and life-ways. These pervasive water-related issues are complex, broad ranging, and ultimately rooted in historic and ongoing colonial processes in Canada (Basdeo & Bharadwaj, 2013; Castleden, Hart, et al., in press; Walkem, 2007). Indeed, the Auditor General of Canada (2016) called the Government of Canada's treatment of Indigenous peoples – including non-fulfillment of treaties, the mismanagement of Indigenous lands, and disparity in services and programs – “beyond unacceptable.” Noting the long-standing and persistent nature of these issues, the Auditor General emphasized that meaningful progress will remain elusive “until a problem-solving mindset is brought to these issues to develop solutions built around people, instead of defaulting to litigation, arguments about money, and process roadblocks” (“Lack of progress,” Para. 3).

Indigenous scholars argue that prevailing approaches to addressing water issues that are embedded in colonial structures and policies, and which exclude, devalue, or ignore Indigenous knowledges, leadership and autonomy are not only ineffective but deeply unethical and, ultimately, unsustainable (Borrows, 2002; Walkem, 2007). Increasingly, it is recognized that renewed, genuine, and respectful Nation-to-Nation relationships are fundamental to moving forward with responsible and inclusive water governance in Canada (Castleden, Hart, et al., in press; Castleden, Martin, et al., in press; von der Porten & de Loë, 2013). To achieve these Nation-to-Nation relationships, we need to create space to engage and prioritize Indigenous voices and knowledge in a dialogue around how we live with and relate to water. As such, this study explores First Nations, Inuit and Métis perspectives, lived experience, and ways of knowing around water, and examines what the inclusion of Indigenous voices and perspectives mean for water policy and research. The perspectives shared by participants in this research contribute not only to a greater appreciation and understanding of the water issues faced by Indigenous communities across Canada and their impacts on Indigenous peoples, life-ways, and knowledge systems, but also the work involved in emerging from water-related disparities, rebalancing relationships with water, and building renewed and respectful relations between cultures, peoples and nations.

METHODS

Study Setting

This research stems from a larger project that sought to identify, examine, and assess methods and models that bring together Indigenous and Western Knowledge in Canadian water research and management through a systematic realist literature review (Castleden, Hart, et al., in press), as well as interviews with academic and community-based researchers who conducted water research with a stated intent to implement Western and Indigenous knowledge systems (Castleden, Martin, et al., in press). In order to guide the development and implementation of this project, which followed a collaborative and participatory research approach, a National Advisory Committee (NAC) of Indigenous knowledge holders and other Canadian water experts from across the country was formed. In addition, two national Water Gatherings were held to engage the NAC as well as other invited Indigenous and non-Indigenous researchers and knowledge-holders. The Water Gathering participants included First Nations, Inuit, Métis, and non-Indigenous individuals identified by the research team and the NAC for their experience with respect to water management in Indigenous contexts, Indigenous ways of knowing, and/or integrative approaches of bringing together Indigenous and Western knowledge. The first Water Gathering (June 2014) informed the direction of the project in foundational ways, while the second, a year later (June 2015), provided an opportunity to reconnect, discuss preliminary results and next steps, and co-develop recommendations for future water research and management in Canada. Through ceremony, storytelling, and dialogue facilitated by a sharing circle format, these gatherings were central to relationship building and the strong sense of good will that informed and stemmed from the project (Castleden et al., 2015).

Data Collection

Data presented in this paper were gathered during the second national Water Gathering (Ottawa, Ontario, June 2015) through a collaborative podcast methodology (Chapter 2), which contributed to the production of a three-part audio-documentary podcast exploring how we live with and relate to water in Canada (www.WaterDialogues.ca).¹⁵ This method was chosen to respond to the request from the NAC and the Water Gathering participants to create public

¹⁵ Podcasts are digital audio files made available on the Internet for downloading or ‘on demand’ streaming.

outreach and dialogical contributions; and to gather data through a method that was reflective of Indigenous ways of knowing and storytelling and could serve as a decolonizing approach to research. The podcast data were gathered via sharing circles and interviews.

Sharing Circles: The one-and-a half-day Water Gathering was structured around a series of three sharing circles (on the full day), an approach to group dialogue in which each person has a turn to speak and all voices are valued equally (Lavallée, 2009; Tachine, Yellow Bird, & Cabrera, 2016; Wilson, 2008). The first circle, “*Open Waters*,” was an opportunity for participants to (re)introduce themselves, and share stories and reflections on the past year; the second, “*The Narrows*,” an opportunity to provide feedback on any aspect of the project (in a modified sharing circle format); and the third, “*Tidal Shift*,” was a discussion around next steps and building a collective vision for water in Canada (Hart et al., 2015). A concluding sharing circle with the NAC took place on the second day. There were a total of 32 participants at the Water Gathering including the research team, the NAC, and other invited participants, most of whom had participated in the first Water Gathering of the project a year prior (Table 3.1). The sharing circles were audio recorded, with permission, totaling 524 minutes of recorded group dialogue.

Interviews: One-on-one interviews with 16 Water Gathering participants were conducted at the Water Gathering with the aim of prioritizing Indigenous voices, with an additional two participant interviews conducted in the days following. These interviews were predominantly unstructured and conversational in nature (Kvale & Brinkmann, 2009), though a general interview guide was developed (Appendix B). This approach fostered natural and spontaneous dialogue, and allowed participants to delve deeper into topics and experiences shared during the sharing circle discussion. In this way, participants were able to focus on what they felt was most important, rather than being restricted by a pre-determined, structured series of questions. The interviews were audio-recorded with permission, and lasted an average of 19 minutes in duration.

Written and informed consent was obtained from all Water Gathering participants at the beginning of the event, prior to any recording. This research protocol received Research Ethics Board approval from the University of Guelph, Queen’s University, and Cape Breton University.

Data Analysis

A process of both data analysis and podcast editing occurred simultaneously (Chapter 2). Interview audio-recordings were transcribed verbatim, and a detailed audio-log with time codes was created from the sharing circle dialogue. The time codes were used to navigate the various pieces of audio during analysis/podcast creation, and quotes from the sharing circles that were included in the *Water Dialogues* podcast were transcribed verbatim for the podcast script (a text document detailing all auditory material including quotes, music, other sounds, and narration). Thematic analysis was conducted and followed a multi-stage, iterative process (Braun & Clarke, 2006). First, interview transcripts and the sharing circle audio-log were read multiple times while listening to the audio recordings simultaneously, with memos recorded in the margins (Birks & Francis, 2008). Next, thematic categories through which the material could be summarized were identified inductively, drawing from the memos and assisted through the use of concept mapping (Wheeldon & Faubert, 2009). Peer debriefing (Creswell & Miller, 2000) with the research and podcast editing team (composed of the core research team and three Water Gathering participant volunteers) contributed to the further refinement and identification of themes from these categories, which were collapsed into three overarching themes. A draft of the podcast was shared with all Water Gathering participants¹⁶ to facilitate member-checking and ensure authenticity of the themes (Creswell & Miller, 2000).

RESULTS

Three main themes were identified through this research: relationships and responsibilities to water; confronting colonialism in the water sphere; and working together across diverse knowledge systems to improve how we live with water. In presenting these themes, we draw from quotes included in the *Water Dialogues* podcast, as well as from additional interview material that informed, but was not shared in, the podcast. While these themes resonated across the group dialogue and participant interviews, we also acknowledge the heterogeneity within and between the perspectives, knowledge and experience of First Nations, Inuit and Métis peoples, groups, and cultures.

¹⁶ Participants' names were included with the presentation of their quotes in the podcast.

***‘I am part of the Earth’*: Relationships and responsibilities to water**

The first mother was our sacred Mother, the Earth... The water that runs through her, runs through us.

Elder Barbara Dumont-Hill, Minute 17:21, *Water Dialogues*

Relationships with water were discussed and described by participants in myriad ways, reflecting the intricate manner in which water flows through all facets of our lives and, indeed, all life on Earth. Perspectives shared by First Nations, Inuit, and Métis participants conveyed that these relationships with water exist at a personal, cultural, and spiritual level, and are often embodied in a deep-rooted connection to traditional and current homelands, and the waterways and water-bodies within them. For example, in describing his connection to water, one Inuit participant shared,

We drank from this land. We ate from this land. This land sustained us for generations, you know as far as our memory can go back. We ate the fish. We ate the birds. We went fishing as the tide turned. We launched our boats when the tide was high. And, you know, it’s through time we come from there. We come from this land. We come from this water. It’s part of us.

Participants further highlighted the foundational role that these intimate connections play in Indigenous knowledge systems. For example, one First Nations participant described Indigenous ways of knowing, as being “developed in a relationship with the land; relationship with Mother Earth; relationship knowing where you are in the universe.” Indigenous knowledge pertaining to water was described in terms that encompassed both the nature of these relationships, and the information garnered through participating in them, thus illustrating the ways in which Indigenous knowledge is intimately linked with the places, people, and processes through which it is cultivated. As a Northern community-based water expert shared,

The residents of Nunavut [whom] are 85 to 90% Inuit, still maintain very, very close connections to the land and to water. A lot of people still identify traditional [drinking water] sources – raw, untreated, natural sources – as, by far, their preferred [drinking water] source, which are a source of vitality and health and cultural connection for the Inuit who use them. How to locate, collect, assess, and protect those traditional [water]

sources is a really important part of traditional Inuit knowledge, and again is specific to families and regions.

Though expressed in culturally diverse ways among participants, the perspectives shared all reflected a deep and fundamental respect for water and its essential role in nourishing and supporting all life. For example, from First Nations and Métis perspectives, water was described as sacred and “the lifeblood of Mother Earth.” For Inuit, a participant described the term *Avatittinnik Kamatsiarniq* an overarching principle from Inuit knowledge, “which means respect and care for the environment – and that encompasses land, water, and wildlife.” For all Indigenous participants, this sense of respect and stewardship for water was also encompassed in a connection to the land more broadly. As one Inuit participant described her relationship, “There’s a deeper, stronger connection to the land because that is where your family comes from. This is where you can go to feel at peace. So it makes you feel proud that, yes, this is where I am, but I’m also respecting it by taking care of the land.”

Underpinning these perspectives was a strong appreciation for the interconnectivity among humans and the natural world, or what one First Nations participant described as the “constant flux and motion” within and through life. As this participant further expressed, “I always say that with water alone, life will be good and true. Once we start damaging the water, we damage life. We damage ourselves.” Expressing concern over the current ways with which we live with water, a Métis participant shared, “The idea that you can get rid of your waste by putting it in the water and it goes away from you... is an idea that we need to throw away. We need to understand that all of our systems are affected.” Indeed, concern over the health and management of water today was something shared by all participants, Indigenous and non-Indigenous alike.

Many participants also emphasized responsibilities towards water, as well as future generations. As one First Nations participant and Elder stated, “Nature has rights. Humans are responsible. And to me, that sums up our role into this scheme of this creation.” Another participant expressed this in terms of the Mi’kmaw concept of *Netukulimk*: “Taking what you need for today, but leaving enough for future generations.” Expressed in diverse ways, this responsibility to care for water specifically and the environment more broadly was common across the First Nations, Inuit, and Métis perspectives shared. Drawing from the teachings that

had been shared with them, another First Nations contributor explained:

From traditional teachings we believe everything has a spirit... If we talk about the quality of the water that's in [a] stream and whether it supports life, then we are talking about the fact that the spirit is strong. If that water is polluted then that spirit is weak. So the work that we have to do in order to prepare our world today for seven generations into future is to work on strengthening the spirit of our water, which means cleaning up our water systems, taking responsibility for things such as sewage, pesticide runoff, not doing too many diversions... And in doing this, like you are actually doing sacred work.

The special role of women as sacred protectors and carriers of water in First Nations cultures was also described and reflected on by many participants. Illustrating this unique connection between women and water, one First Nations participant and Elder reflected, "How can I forget that for the first nine months of my life I was in the ocean of water?" Another First Nations participant articulated the connection between a society that disempowers women and the current state of water, expressing that, "I feel that if we empower women we will be in a better position to have a stronger spirit of our water, or in other words, better quality of water."

'You can't just ignore us': Confronting colonialism in the water sphere

This prayer you are going to hear has been in this country for thousands of years. And it was outlawed, because our spirituality was outlawed. Our right to vote was outlawed. We didn't have the right to vote until 1960. The right to vote is powerful, but our spirituality is even more powerful than that.

Elder Albert Dumont, Minute 3:00, *Water Dialogues*

In discussing how we live with and relate to water in Canada today, participants' experiences, stories, and reflections illustrated the far-reaching impacts of historic and ongoing colonialism on the health of Indigenous people, Indigenous cultures and knowledges, relationships with water, and the health of the land and water itself. Participants described issues related to inequitable access to safe drinking water, and environmental degradation, contamination, or other adverse effects from industrial and development activities on or impacting Indigenous lands and waters. A primary concern for all was the lack of input

Indigenous communities have into the decisions around water management and land use that impact them.

Many First Nations, Inuit, and Métis participants expressed deep frustration over the lack of recognition and respect for Indigenous knowledge systems and the self-determination of Indigenous peoples in Canada today. As one Northern participant described, “There’s a lot of disillusionment and disengagement, I find, with some decision-making processes, because people feel, ‘Oh, they’re not going to listen to us anyway’.” A First Nations participant spoke to the ways in which “our communities, our leadership, are so overburdened with different corporations, and federal departments, and provincial departments, that now it’s just everything is being streamlined.” As this participant described, that left little room for the inclusion of community members and Indigenous ways of knowing in decision-making processes. “Because of that gap, we are almost, how I see it is, we have essentially become somewhat assimilated.” Several participants shared stories and experiences with respect to the water-related impacts of resource development and the failure of existing mechanisms of engagement to provide meaningful inclusion in decision-making processes. As one Inuit participant described his experience:

We engaged with proponents; we engaged with both levels of government; we did extensive Aboriginal Traditional Knowledge gathering, adding it into the whole environmental [assessment] process... and we had a lot of legitimate concerns. And, you know, at the end of the day when we see a letter signed by the Minister of the Environment [approving the project]... it makes you wonder, you know, why did we do it? What did we gain by sharing our information, sharing our knowledge? Projects like that, mega projects, have such a profound impact on the Aboriginal people that are closest to these developments. And, you know, the damage is irreversible.

Describing the impact and Inuit-observed changes from a hydro-electric dam built in the 1960’s, another participant explained:

We saw changes in our area where we don’t get cod fish any more, our ice isn’t as hard as it was supposed to be, we don’t get a certain kind of seal that used to come in and give birth. None of that is happening anymore. But because there’s no [Western scientific]

proof, because there was no study [about the impact of the dam] done in the 60's, nobody is believing us now.

Impacts from development such as these can reduce or eliminate access to culturally and nutritionally significant food sources, and affect relationships with the natural world that lie at the core of Indigenous ways of knowing, identity, and life-ways. With another hydro-electric project on the horizon in this participant's region, they continued, "As people who live off the water, as people who live off our land, they're slowly killing what we need in our communities." As a First Nations participant shared with respect to a community impacted by industrial effluent routed to a harbour adjacent to their community,

This [Mi'kmaw] term, *Weji-sqalia'timk*, which translates to "the land that we sprouted from," conveys how the [First Nation] community believes about their origin. So when you pollute it with environmental pollutants, you are polluting where we believe we came from, where all of creation has come from. And so you are cutting us off from our spiritual connection, from our cultural connection, our ability to pass on those traditions. And so that whole concept is so central to what has to be rebuilt to get that connection back to before they started polluting the land [and water] in the first place.

Participants spoke to the need for communities "to heal from all the taking that's been done," and "for governments to start listening." Healing was also described in the context of environmental restoration. Referring to a project that brought First Nations, non-Indigenous communities, and government together to protect a lake system, one participant described this in terms of a responsibility towards "assist[ing] the healing process of Mother Earth." Reflecting the different mindset this entails, this participant explained, "We as human beings can't 'fix' Mother Earth, but we can work with her."

Participants also stressed the importance of recognizing and supporting the Indigenous "traditions and relationships [with water] that are thriving today," and creating space to celebrate Indigenous cultures and resiliency, highlighting the transformation that can occur when "people are committed to retelling the narrative from a different perspective."

Several participants spoke about efforts toward reclaiming and strengthening cultural practices, Indigenous ways of knowing, and relationships with water and land. As one First

Nations participant described, “a lot [of our community members] have been removed from the river systems in [the region], so we’re trying to get their boots back on the water.” Highlighting the importance of Indigenous languages and the concepts and understandings conveyed within them, another participant described how “with trying to restore the environment, we are also trying to restore language because they are so interconnected.” A number of participants also emphasized the importance of connecting youth with Elders to support intergenerational transfer of knowledge that might not otherwise be occurring as it traditionally did. As one Inuit participant described of a research initiative that involved taking youth out on the land with Elders to learn about water,

They [the Elders] always have stories and ways to make the young understand. And when they do that they all have a good time and it’s easier to teach them things... Our Elders always say any knowledge passed down is good. Any knowledge someone takes is good because they can do something with the knowledge and pass it on.

Indeed, many participants noted the importance of on-the-land and experiential learning with respect to Indigenous ways of knowing. As one First Nations participant explained with respect to fostering a relationship with the natural world, “How can a teacher teach it in school from a textbook? You have to be out there living it.”

‘Connecting the dots’: Mobilizing diverse ways of knowing to better live with water

I think it’s happening now. Some accept it, some embrace it, some old-school don’t even want to look at it. But we are seeing change. The movement is there, and the world is slowly, like a clam I guess, slowly opening up to it. Sometimes it shut; sometimes they say, ‘Oh this is interesting.’ So the stories will help it a lot.

Clifford Paul, Minute 49:11, *Water Dialogues*

The final theme centers around possibilities and pathways for working together, across our diverse knowledge systems, to transform how we live with water, as individuals, communities, and nations that all call these shared lands home. Participants emphasized that caring for water needs to be understood as a responsibility shared by all people in Canada, illustrated by some First Nations participants through the understanding that “we are all Treaty people” with Treaty responsibilities. Another participant expressed that,

When we work with this Indigenous Knowledge, we come across this sense of stewardship from our people, and we have to promote that role, that we as individuals – Canadians, First Nations, or otherwise – we have to promote that stewardship within our selves and make it a message for future generations.

The symbolism of the Two-Row-Wampum¹⁷ was used by some First Nations participants to illustrate a process of working together in ways that do not compromise the integrity of different knowledge systems, cultures and ways of knowing by, for example, subsuming one within the other, as is often the case when there is but tokenistic consideration of Indigenous knowledge. As one First Nations participant explained,

We will work together but we are going to paddle in our own canoes... With Western science and Indigenous Knowledge, I think that is the approach that, yeah, we'll show you how we do things, and you show us how you do things... Today we live where we can't ignore Western science, but part of that, there is still a place for Traditional Knowledge. There will always be that. I think those two paths will always be there.

Part of this process, as this participant further described, is “recognizing each other’s values and what they are bringing into the project or discussion.” Another participant described this in terms of being able to “walk around” one’s knowledge system in order to understand both the strengths and limitations, as well as how it “exists in relationship with other knowledge systems.” This sentiment was shared among First Nation, Inuit, and Métis participants, and it also included recognizing the “responsibilities [you have] to the knowledge system and the community of people who wish to draw upon that knowledge.”

All participants spoke to the necessity of transforming relations between Indigenous peoples and the rest of Canada in order to engage and mobilize Indigenous and Western-based knowledge systems together, and that Indigenous methodologies and the knowledge stemming from them need to be afforded equal respect in order to inform water-related decision-making processes. As one Métis participant expressed, “The importance really can’t be overstated that

¹⁷ The Two-Row Wampum is a Haudenosaunee Treaty belt from the 17th century, consisting of alternating rows of purple and white wampum beads running the length of the belt. The two purple rows symbolize the paths of two vessels – one European and one Haudenosaunee – travelling down the river of life together, but with each society remaining in their own vessel, signifying sovereignty over their own affairs (Ransom & Ettenger, 2001).

there is knowledge out there, we just need to include people and be respectful of the people who have that knowledge.” Many participants emphasized the importance of bottom-up and grassroots approaches, and the need to “invest in people and communities” to support Indigenous and community-led research and programs that are reflective of community priorities. Linked with capacity building and greater autonomy over related decision-making processes, such initiatives were also described in terms of their potential to inform policy. As one Northern participant expressed,

When the research and the monitoring is initiated from concerned people in communities, and not kind of introduced or imposed on, then I think there will be natural opportunities for local knowledge and Inuit perspectives to be integrated in those research processes, and to be scaled up to the bigger water management frameworks.

Participants also spoke to the need to create space for respectful dialogue in order to listen and learn from each other, recognizing that “our relationships and our stories really do matter,” and that when working together “the room is smarter than the smartest person [in the room].” As one Southern academic participant described, “Decolonization is really about reorienting ourselves, so that we can create inclusive spaces, that we can allow diverse approaches, that we can respect differing viewpoints.” The concept of Two-Eyed Seeing, first put forward by Elders Albert and Murdena Marshall and Dr. Cheryl Bartlett (Bartlett, Marshall, & Marshall, 2012), was invoked by many First Nations and non-Indigenous participants to denote a way of embracing the value of multiple ways of knowing, and was also described as “something that has to be in your heart and in your mind.” Learning in these contexts was described as “ever on-going” and transformational, in that “it becomes part of who we are.” Sharing stories, and engaging the head, heart, mind and spirit, were seen as essential to moving forward with water issues in a good way. As this First Nations participant described,

You always have to share the stories. You always have to put it in story form. And your management plan may not be something that’s on paper but in the hearts of the people. The legacy will be the change, not a document collecting dust on a shelf when I’m dead.

DISCUSSION

As the experiences, knowledge, and wisdom shared by participants in this research illustrate, current approaches to managing water in Canada do not always meaningfully or equitably include Indigenous peoples or their knowledge systems, and are thus failing to protect the health of water and ecosystems, both within and beyond Indigenous communities. Rather, opportunities to participate are occurring within colonial water governance and natural resource management frameworks that do not respect Indigenous self-determination and ways of knowing (Borrows, 2002; Castleden, Hart, et al., in press; Castleden, Martin, et al., in press; McGregor, 2009; Simms et al., 2016; von der Porten & de Loë, 2013, 2014; Walkem, 2007). While this has, and continues to be, especially destructive for Indigenous peoples, communities, and cultures (Basdeo & Bharadwaj, 2013; Borrows, 2002; LaBoucane-Benson, Gibson, Benson, & Miller, 2012; RCAP, 1996; Walkem, 2007), as well as the water itself, this research also reflects the ways in which responsibilities and relationships with water are being sustained, reclaimed, and renewed; and the value and power inherent in such actions.

Though expressed and experienced in culturally and regionally diverse ways, relationships with water are fundamental to Indigenous ways of knowing and life-ways, and entail both a respect for the importance of water as our source of life, and a responsibility toward protecting and caring for it (Anaviapik Soucie, Arreak, & L'Herault, 2015; Anderson, 2010; Anderson, Clow, & Haworth-Brockman, 2013; Blackstock, 2001; LaBoucane-Benson et al., 2012; Lavalley, 2009; McGregor, 2008, 2012; Walkem, 2007). As the First Nations, Inuit, and Métis participants in this project described, these relationships are embodied in deep-rooted connections to place, and founded in an appreciation for the interconnectedness and “constant flux and motion” of all life. Indeed, participants often spoke of their relationship with water in the context of, or as included within, their relationships with the land, or the rest of the natural world. These perspectives underscore the ways in which the health and well-being of Indigenous peoples and the integrity of Indigenous cultures and ways of knowing are intimately linked with both the health of the land and water, as well as the ability to engage in respectful relationships with these lands and waters (Adelson, 2000; Battiste & Youngblood Henderson, 2000; Cunsolo Willox et al., 2013; Kimmerer, 2011; McGregor, Bayha, & Simmons, 2010).

Yet, participants explained that these relationships have come under threat from multiple forces stemming from the impacts of colonialism, environmental degradation, and contamination, often leading to a process of environmental dispossession, or “the process through which Aboriginal people’s access to the resources of their traditional environments is reduced or severed” (Richmond and Ross, 2009, p. 403). This dispossession includes physical displacement from traditional lands, loss of access to and control over these lands, and the impacts of assimilationist policies, pollution, and climate change (Richmond & Ross, 2009). As the experiences shared by participants in this research indicate, severed or otherwise adversely impacted connections with water also represent a significant form of environmental dispossession faced by Indigenous peoples in Canada. Like other forms of environmental dispossession, these impacts to water have wide-ranging and interrelated impacts on the health and well-being of Indigenous peoples, cultures, spirituality, and on the ability to practice and transmit Indigenous knowledges (Basdeo & Bharadwaj, 2013; King, Smith, & Gracey, 2009; LaBoucane-Benson et al., 2012; McGregor, 2009).

Importantly, however, participants spoke to the strength and resiliency of Indigenous peoples and cultures in the face of these harms, and emphasized the importance of ongoing efforts towards supporting the revitalization of Indigenous knowledge and relationships with water. Participants described this both in terms of recognizing the strength and vitality of relationships with water that continue to exist today, as well as engaging in efforts to rebuild these relationships and reclaim Indigenous ways of knowing where they have been weakened or (for a time) lost. These findings highlight the importance of such efforts in addressing the negative impacts of environmental dispossession as it pertains to water, and align with a growing body of Indigenous scholarship on the resurgence of Indigenous knowledges, spirituality, laws, and systems of governance (Alfred & Corntassel, 2005; Big-Canoe & Richmond, 2014; Borrows, 2002; Coulthard, 2014; Simpson, 2011). As Nishnaabe scholar and writer Leanne Simpson describes, engaging in processes and practices to reclaim and revitalize Indigenous ways of knowing are “about creating decolonized time and space where Indigenous voices and Indigenous meanings matter” (2011, p. 96).

In this regard, participants in this study emphasized the value of land-based learning, and opportunities for intergenerational transfer of knowledge. The importance of such initiatives has

also been documented in a growing body of literature that is informed by Indigenous-centred conceptions of health, well-being, and resiliency (Big-Canoe & Richmond, 2014; Hansen & Antsanen, 2016; McGregor et al., 2010; Redvers, 2016; Restoule, Gruner, & Metatawabin, 2013; Robbins & Dewar, 2011; Tobias & Richmond, 2014).

The importance of Indigenous languages in conveying Indigenous ways of knowing and understanding is also illustrated by this study. Indeed, a number of participants described Indigenous concepts and terms that reflect and contain within them teachings of a fundamentally different orientation to the natural world than dominant, Western perspectives. One participant further spoke to the interrelationship between community efforts towards environmental restoration and the concurrent revitalization of language. Pointing to the power and potential within such (re)newed understandings (for all peoples), Indigenous scholar and plant biologist Robin Kimmerer explains how the revitalization of Indigenous language(s) “allows us to imagine and potentially implement different visions of sustainability” (Kimmerer, 2011, p. 263).

Participants in this research also emphasized the value of, and need to recognize, diverse perspectives, experiences and ways of knowing. This relates to an understanding that there is no one-size-fits-all approach to addressing water challenges in Indigenous communities, and that the needs, desires and path of each community towards self-determination may differ. In response to historic and ongoing dispossession, Simpson (2011), for example, speaks to the need for “diverse nation-culture-based resurgences” (p. 17). This highlights the need for culturally grounded, community-led approaches to addressing water issues in Indigenous communities, through research, programming, and policy, and aligns with the growing recognition of, and demand for, decolonizing methodologies in these contexts (Castleden, Martin, et al., in press; McGregor et al., 2010; Smith, 2012).

Finally, participants stressed that responsibilities towards water are shared by all, and that caring for water today means utilizing the strengths of both Western and Indigenous sciences. To build trust, understanding, and capacity for collaboration, spaces for respectful dialogue between Indigenous and non-Indigenous scientists, policy-makers, and community members must be cultivated where multiple ways of knowing and learning can be honoured and mobilized (Castleden, Hart, Cunsolo, Harper, & Martin, 2017). It also means fundamentally rethinking the way we currently live with and relate to water, and the concepts, values, laws, and decision-

making processes that legitimate and even encourage the continued degradation of water and ecosystems on which we all depend. Transforming these relationships, between cultures, people and nations, through dialogue and storytelling has the potential to shift dominant discourses around water management, and can provide the foundation for re-envisioning policy and decision-making processes that foster a more equitable, just, respectful and healthful relationship with water.

CONCLUSION: RESPONSIBILITY IN A TIME OF RECONCILIATION

In part of a growing movement towards the increased assertion and recognition of Indigenous peoples rights, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (UNGA, 2007) was ratified in 2007, and affirms Indigenous peoples' rights to their lands, resources, and territories and promotes their "full and effective participation in all matters that concern them" (UNPFII, n.d., p. 2). With respect to water in particular, Article 32 lays out the requirement for "free and informed consent prior to the approval of any project affecting [Indigenous] lands or territories," including in connection with the development or utilization of water or other resources. In addition, Article 25 states that,

Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.

The declaration marks a major accomplishment in the international recognition of Indigenous peoples rights and is viewed by many Indigenous groups and organizations as an important framework for moving forward with decolonization, reconciliation, and respectful Nation-to-Nation relationships (TRC, 2015). Yet while Canada affirmed its commitment to upholding UNDRIP "without qualification" in 2016,¹⁸ the declaration is non-binding, and will require sustained political will and commitment to be implemented. For governments, this means dismantling colonial cultures and constructs that negate the development of genuine Nation-to-

¹⁸ Canada was originally one of four countries to object to the declaration. This position was reversed in 2010, with the qualification that the declaration would be considered an aspirational document. This qualification was removed when a new incoming government reaffirmed Canada's commitment to UNDRIP in 2016.

Nation relationships, and enacting UNDRIP into law (TRC, 2015). Yet, as the participants in this study described, this is more than an intellectual or political exercise. That is, in order to renew, repair, and rebuild relationships, with each other and with the natural world, we must participate in them, and in so doing we transform ourselves -- the ultimate source and foundation for real change.

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Table 3.1. Summary demographics of Water Gathering participants (June, 2015) by region, sex and Indigenous group.

	n
Region	
Manitoba	3
Nova Scotia	10
Nunatsiavut (Newfoundland & Labrador)	2
NunatuKavut (Newfoundland & Labrador)	1
Nunavut	2
Ontario	14
Total	32
Sex	
Female	16
Male	16
Total	32
Indigenous group	
First Nations	10
Inuit	4
Métis	2
Non-Indigenous	16
Total	32

CHAPTER FOUR

Research Summary, Limitations, Implications, and Conclusion

When we allow our imagination to flow with water, from its many perspectives we get a small glimpse into how profound a connector water is for all of us... Some of the water that is in our bodies may have previously circulated in woolly mammoths millions of years ago, or swelled up in a plump, juicy salmonberry, or jostled around with fish in lakes and rivers, or been processed by our local sewage treatment plant. Water connects us to places, people, and creatures we have not seen, life that is far away from us, and life that came long before us.

Dorothy Christian (2013, p. 240)

SUMMARY

At its core, the work shared in this thesis reflects a co-learning journey of connecting through, and with water. This research grew out of a larger project that brought together a group of Indigenous and non-Indigenous water researchers, practitioners, and knowledge-holders from across Canada to discuss integrative approaches in water research and management, and was motivated by the interests of project partners and participants in prioritizing dialogical contributions and public outreach. This desire to share the powerful dialogue and sense of goodwill emergent from this project, beyond our group, prompted us to explore multi-media methods that could complement other data gathering strategies within the project, and resulted in the piloted use of a collaborative podcasting methodology presented in this thesis. This work contributed to the creation of a 51-minute, three-part audio-documentary, the *Water Dialogues* podcast, exploring First Nations, Inuit, and Métis perspectives around how we live with and relate to water; and the two research manuscripts presented in this thesis examining our methodological process (Chapter Two), and research results (Chapter Three).

An overview of the literature, presented in Chapter One, demonstrated the need for meaningful inclusion of Indigenous peoples and ways of knowing in water governance frameworks and discourses, and situated both the collaborative podcasting methodology explored in this work, as well as the results of the collaborative podcast study in the context of a

broader dialogue and movement towards decolonizing research and practice. This movement responds to observations and growing acknowledgement of the ways in which the tradition of scholarly research, rooted in Western-based methods and approaches, has perpetuated colonial power imbalances and marginalized, misrepresented, or otherwise ignored Indigenous ways of knowing (Battiste, 2000; Bishop, 2005; Smith, 2012). A decolonizing research agenda, led by and with Indigenous peoples, is one that “privileges Indigenous concerns, Indigenous practices, and Indigenous participation” (Smith, 2012, p. 111).

Recognizing this need for decolonizing approaches in research that more adequately reflect and respect Indigenous ways of knowing, Chapter Two described and examined the use of collaborative podcasting as a research method of critical inquiry and knowledge mobilization, using the *Water Dialogues* podcast as a case study example. Noting the dearth of literature on the use of podcasting in research inquiry, Chapter Two described the methodological process that our transdisciplinary team engaged in to create the podcast through six stages of production, which included: (1) Audio collection through recorded one-on-one interviews and group dialogue during a national Water Gathering event that brought together 32 Indigenous and non-Indigenous water researchers, experts, and knowledge-holders from across Canada; (2) Review and analysis of the audio-material through an iterative, multistep process, conducted in collaboration with a research team composed of three participant volunteers and the core research team; (3) Sequencing and structuring of the material into a coherent narrative form to be presented in the podcast, again following an iterative process and involving the research team; (4) Sound editing to include narration, music, natural and ambient sounds; (5) Participant review to facilitate member-checking by all Water Gathering participants; and (6) Public release and dissemination.

In critically reflecting on our praxis, we further explored how the method of collaborative podcasting may contribute to, and support research within, a decolonizing research agenda. In particular, we examined the ways in which our experience with the method aligned with four key Indigenous “projects” outlined by Linda Tuhiwai Smith in her foundational work, *Decolonizing Methodologies* (1999): storytelling, representing, reframing, and sharing. This discussion also highlighted the ways in which the collaborative and deliberative process of creating the *Water Dialogues* podcast – which included participants in the creation, review, and approval of the

work – was essential to adapting the use of podcasting within the context of this research, and to ensuring accountability to participants in this work (Bishop, 2005). We positioned collaborative podcasting within a growing field of collaborative and participatory media practice in social research (c.f. Gubrium & Harper, 2013), and suggested that our experience supports its use and consideration as a promising research method of critical inquiry, and as a sharing and learning platform, particularly within a decolonizing context. As a communication medium, podcasts offer many advantages, including relative ease of production and editing (as compared to film, for example), generally lower equipment costs, and, for the listener, the ability to listen and learn when, and where, desired. The introduction of podcasting as both a method of research inquiry and a knowledge mobilization strategy, as well as the demonstrated potential for its use in a collaborative and participatory way, represents a unique contribution to qualitative methods and decolonizing research literature.

Chapter Three of this thesis went on to present the research results of this collaborative podcasting case study. Within Canada, many Indigenous communities face substantial water security issues related to water quality and access (Basdeo & Bharadwaj, 2013; Mascarenhas, 2007; Phare, 2009; White, Murphy, & Spence, 2012). As many Indigenous groups, scholars, and others have observed, these issues are related to broader historical and ongoing colonial relationships, and water governance frameworks that fail to meaningfully engage Indigenous leadership and mobilize Indigenous ways of knowing in addressing these issues (Borrows, 2002; Castleden, Hart, et al., in press; Castleden, Martin, et al., in press; Mascarenhas, 2007; McGregor, 2012; RCAP, 1996; Walkem, 2007; White, Murphy, & Spence, 2012). This study therefore sought to explore, prioritize, and share First Nations, Inuit, and Métis perspectives around how we live with and relate to water in Canada, and to examine what the inclusion of Indigenous voices, lived experience, and ways of knowing around water mean for policy and research. Data were gathered using the collaborative podcasting methodology described in Chapter Two, through interviews (n=18) and group dialogue facilitated through sharing circles (Tachine, Yellow Bird, & Cabrera, 2016) during a National Water Gathering event (June 2015). Three overarching themes were identified through thematic analysis conducted in collaboration with the podcast research team: (1) Relationships and responsibilities to water; (2) Confronting colonialism in the water sphere; and (3) Working together across diverse knowledge systems to improve how we live with water.

The research findings presented in Chapter Three illustrated the ways in which First Nations, Inuit, and Métis peoples' relationships with water – though expressed in culturally diverse ways – are embodied in deep-rooted connections to place, and encompass a fundamental respect for water and responsibility toward protecting and caring for it (Anaviapik Soucie, Arreak, & L'Herault, 2015; Anderson, Clow, & Haworth-Brockman, 2013; Blackstock, 2001; LaBoucane-Benson, Gibson, Benson, & Miller, 2012; McGregor, 2008). The experiences shared by participants further revealed the ways in which these relationships have been impacted by water governance approaches in Canada that are embedded in Western-based natural resource management frameworks, and which do not recognize and respect Indigenous self-determination as affirmed by the United Nations Declaration on the Rights of Indigenous Peoples (UNGA, 2007). Based on this research, we suggested that water issues faced by Indigenous peoples in Canada can be understood as a form of historic and ongoing environmental dispossession, described by Richmond and Ross (2009) as, “the process through which Aboriginal people's access to the resources of their traditional environments is reduced or severed” (p. 403). The perspectives shared in this research, alongside related literature, indicated that these impacts to water, like other forms of environmental dispossession, have wide-ranging and interrelated impacts on the health and well-being of Indigenous peoples, cultures, spirituality, and on the ability to practice and transmit Indigenous ways of knowing (Basdeo & Bharadwaj, 2013; M. King, Smith, & Gracey, 2009; LaBoucane-Benson et al., 2012; McGregor, 2009; Richmond & Ross, 2009).

The results from this study further highlighted the importance of, and ongoing efforts toward, reclaiming and revitalizing responsibilities and relationships with water, through initiatives such as on-the-land education and programming, environmental restoration, language revitalization, and acknowledging and celebrating the strength, resiliency and vitality of Indigenous ways of knowing and relationships with water that continue to exist today. These findings align with a growing body of literature on the resurgence of Indigenous Knowledge, spirituality, laws, and systems of governance more broadly (Alfred & Corntassel, 2005; Big-Canoe & Richmond, 2014; Borrows, 2002; Coulthard, 2014; L. Simpson, 2011), and represent an important contribution to the literature with respect to water specifically.

Participants in this research also emphasized that all people in Canada share

responsibilities towards water, and that to protect and care for water today means working together in partnership, through respectful Nation-to-Nation relationships, across diverse cultures and knowledge systems. Rebalancing relationships between the peoples of Canada, and with the waters that we share, will require the meaningful inclusion of Indigenous peoples in decision-making processes and water governance frameworks. This study – communicated through the manuscript presented in Chapter Three, and the *Water Dialogues* podcast – represents one contribution towards shifting the discourse around water to reflect the essential contributions of Indigenous voices, wisdom, lived experience, and knowledge.

LIMITATIONS

A number of limitations should be considered in interpreting the results and findings of this research. While the Water Gathering event during which data were gathered for this study was a valuable and unique opportunity for face-to-face dialogue and discussion amongst First Nations, Inuit, Métis, and non-Indigenous participants from across Canada, the diversity of Indigenous nations, cultures and perspectives in Canada was by no means reflected in the group. Eastern and Central regions of the country were more heavily represented, with no participants from the Western provinces or territories. As illustrated in Table 3.1, half of the 32 Water Gathering participants were Indigenous, and of those the majority (10) were First Nations. Many of these First Nations participants were from the East Coast, contributing to a higher representation of Mi'kmaw First Nation participants. There were only four Inuit participants, again with higher representation from Eastern Inuit regions, Nunatsiavut and NunatuKavut (both in Labrador). There was only one Inuit participant from Nunavut, and none from the Inuit regions of Inuvialuit (Northwest Territories) and Nunavik (Quebec). Métis representation was also very limited, with two participants from the Métis Nation.

While it would not have been possible to include participants from all Indigenous nations and cultures in Canada within the scope of this project, these perspectives would contribute to a more robust and nuanced understanding of culturally-mediated and place-based relationships with water, the range of water-related issues and impacts being faced, and the nature and scope of strategies being employed to address them within Indigenous communities and territories across Canada. Though the findings from this study align with existing literature on

environmental dispossession (Durkalec, Furgal, Skinner, & Sheldon, 2015; Richmond & Ross, 2009; Tobias & Richmond, 2014), as well as Indigenous relationships with water and the environment more broadly (Anaviapik Soucie et al., 2015; Anderson et al., 2013; Cajete, 2000; McGregor, 2008), the stories, perspectives and experiences shared by participants in this research should not be considered as reflective or representative of all Indigenous peoples in Canada, nor any one particular Indigenous group. Youth were also not included in this study, reflecting an important area for future research. The importance of considering the perspectives of Indigenous youth has been highlighted in environment and health literature, particularly in the context of resiliency (Big-Canoe & Richmond, 2014; Petrusek Macdonald et al., 2015), including with respect to water (Fresque-baxter, 2013; Petrusek Macdonald, Harper, Cunsolo Willox, Edge, & Rigolet Inuit Community Government, 2013; Restoule, Gruner, & Metatawabin, 2013).

Limitations relating to the methods of data collection should also be considered. Limited time was spent with participants during data gathering, which occurred over the course of the one-day Water Gathering event. It should be noted, however, that the research presented in this thesis benefited from the relationships, and sense of goodwill and trust that an initial Water Gathering, held at the outset of the larger project, helped to foster. The second Water Gathering provided an opportunity for in-person interviews, which allowed for higher quality audio-recordings, and helped facilitate a greater sense of rapport. However, because these interviews were conducted during breaks so as not to interfere with the proceedings of the event, they were limited by time (averaging 19 minutes in duration), and not all Water Gathering participants could be interviewed. In addition, the sharing circle group dialogue and interviews were all conducted in English. Given the importance of Indigenous languages in communicating about Indigenous knowledge systems (discussed in Chapter Three), this reliance on English limits how concepts and understandings rooted in Indigenous ways of knowing can be conveyed (Battiste & Youngblood Henderson, 2000). While a number of participants used and explained Indigenous terms and concepts for which there are no equivalent English words, the translation to English, and reliance on English overall, presents a cultural filter that will necessarily shape understanding and comprehension (Kimmerer, 2013; McGregor, Bayha, & Simmons, 2010).

RESEARCH IMPLICATIONS AND RECOMMENDATIONS

There are a number of important policy and research implications that stem from this work. These are discussed through four overarching and interrelated topics that connect with the research findings.

Water, Indigenous knowledge, and health

This research highlighted the myriad and interrelated connections between water and health for Indigenous peoples, particularly as mediated through cultural, spiritual, and place-based relationships with water. Importantly, a relationship-centric perspective illustrates that not only are water quality and the health of related ecosystems integral to Indigenous peoples' health, so too is the ability to practice and engage in respectful, balanced, and culturally significant relationships with water and the natural world; relationships which are considered foundational to Indigenous identity, subsistence activities, knowledge systems (including intergenerational transfer of knowledge), and environmental stewardship (Adelson, 2000; Anderson, 2010; Battiste & Youngblood Henderson, 2000; Cajete, 2000; Kimmerer, 2011; McGregor, 2004, 2008, 2012; McGregor et al., 2010; Mzinegiizhigo-kwe Bedard, 2017).

Quantifiable and biological metrics related to water issues – such as methyl-mercury levels in food sources, and people, stemming from hydro-dam flooding or industrial effluent (Harada et al., 2011; Wheatley & Paradis, 1995) – are more easily recognized by Western-based knowledge systems and fit within biomedical models of health. However, the impact of these outcomes on relationships with water (and relationships with related species, ecosystems, and places), though profound in consequence, are less widely acknowledged and often overlooked (Basdeo & Bharadwaj, 2013; Turner, Gregory, Brooks, Failing, & Satterfield, 2008). Meaningful consideration of the importance of Indigenous peoples' relationships with water therefore has important implications both in terms of health policy, research and programming, as well as environmental regulation and natural resource decision-making processes that impact health through these pathways.

Research relating to Indigenous peoples' health has traditionally proceeded from non-Indigenous understandings of health and well-being (King et al., 2009). While social

determinants of health frameworks have played a pivotal role in orienting health discourse and policy towards consideration of underlying and ‘upstream’ factors contributing to health (e.g. socio-economic status), these models are viewed by many as insufficient in accounting for a number of factors, or dimensions, specific to Indigenous peoples, including the fundamental importance of connections with traditional lands and the environment (Adelson, 2005; Greenwood, de Leeuw, Lindsay, & Reading, 2015; King et al., 2009; Richmond & Ross, 2009). For example, while the Public Health Agency of Canada identifies ‘physical environments’ as one of 12 key determinants of health, interpretation of this determinant is limited to adverse physical health outcomes (e.g. birth defects, respiratory issues) linked with exposure to environmental contaminants.¹⁹ By contrast, determinants of health frameworks developed by Indigenous groups and organizations (e.g. Assembly of First Nations, 2013; Inuit Tarpitir Kanatami, 2014), as well as the scholarship of those working with Indigenous communities in the domain of environment and health, position the land and environment as a vitally important, often foundational constituent of spiritual, mental, emotional, and physical health and well-being (Big-Canoe & Richmond, 2014; Cunsolo Willox et al., 2012, 2013; Durkalec et al., 2015; Richmond & Ross, 2009; Tobias & Richmond, 2014).

In order to support Indigenous self-determination, and the development of constructive approaches to addressing persistent health- and water-related disparities, it is imperative that policy and funding frameworks are responsive to, and respectful of, these expanded understandings of health, and the multiple meanings and importance of water for Indigenous peoples. More work is needed to understand how water-related issues (in their various manifestations) interface with other determinants of health, including the impacts of colonialism, in different regions and jurisdictions, and at the community level. Further, an expanded appreciation for, and more nuanced understanding of, the multifaceted connections between water and health can assist in identifying valuable opportunities for harnessing the potential synergies between environment- and health-related initiatives (e.g. source-water protection and monitoring, ecological restoration, and land-based education), through which multiple and overlapping priorities and goals can be pursued. Work that supports, and is informed by, holistic

¹⁹ PHAC also includes the ‘built’ environment (e.g. housing, community design) under the determinant of ‘physical environments’. Connections to psychological well-being (in addition to physical health) are only identified under this sub-section of the ‘physical environments’ determinant.

and Indigenous-centered conceptions of health will be instrumental to constructively navigating the terrain between, and at the intersection of, water, environment, and health.

Grassroots mobilization and re-centering Indigenous ways of knowing

The revitalization and promotion of Indigenous ways of knowing is widely advocated by Indigenous thinkers and scholars as central to a decolonizing agenda (Alfred & Corntassel, 2005; Battiste, 2000; Coulthard, 2014; Simpson, 2011; Smith, 2012). With respect to water, the findings from this research highlighted the work that Indigenous peoples and communities are pursuing to sustain, reclaim, and renew relationships and responsibilities to water in culturally inherent ways. This reflects a vital area of focus for addressing the impacts of water-related environmental dispossession as described in this research, and by others (Basdeo & Bharadwaj, 2013; Walkem, 2007), and shifts attention towards strengths-based approaches grounded in Indigenous peoples' self-determination and resiliency.

These findings align with calls to support Indigenous cultural programming, including language revitalization, and opportunities for land-based intergenerational knowledge transfer (Big-Canoe & Richmond, 2014; Simpson, 2004; TRC, 2015). This work further highlights the value of supporting community-driven research that can identify, monitor, and respond to locally important water concerns and related dimensions of health and well-being. This community-led work can inform and contribute to larger policy and water management frameworks, and be used to develop culturally-relevant strategies to address water issues and support community resiliency and well-being. Design and implementation of research and policy to support these efforts must be responsive to the unique needs, priorities and contexts of Indigenous regional governments and communities, underscoring the importance of support and funding for community-driven work that is controlled and led by communities.

Transdisciplinary collaboration and decolonizing research and practice

Transdisciplinarity refers to strategies of inquiry and practice that draw from multiple knowledge systems, and which transcend the boundaries of traditional disciplines and categories of knowledge specialization (Lawrence, 2010). Such approaches are increasingly sought in tackling complex, and so-called 'wicked' problems for which any one area of knowledge specialization is unable to provide comprehensive understanding and solutions (Brown, Harris,

& Russel, 2010), including challenges at the intersection of water and health (Elliott, 2011). Yet while there is increasing recognition of the importance of transdisciplinary approaches that bring diverse Indigenous and Western knowledge systems together in addressing water issues in Canada (Castleden, Hart, et al., in press), challenges have been met in achieving successful implementation of these approaches (Castleden, Martin, et al., in press; McGregor, 2012). Power imbalances perpetuated by institutional structures and policies, and the continued predominance of Western-based research paradigms and methods, have been described as impediments to the meaningful inclusion of Indigenous knowledge in water research and management (Castleden, Hart, et al., in press; Castleden, Martin, et al., in press).

Meaningful transdisciplinary collaboration with Indigenous peoples to address water issues must therefore be informed by decolonizing methodologies that seek to create space for new approaches in research that are inclusive of, and resonant with, Indigenous ways of knowing. As Linda Tuhiwai Smith has described, this involves transforming, “the deep underlying structures and taken-for-granted ways of organizing, conducting, and disseminating research and knowledge” (2012, p. 88). Though the needs of every project will be unique, this research highlighted the value of participatory and collaborative digital media, and podcasting in particular, as one potential strategy that may assist in supporting these goals. As decolonizing methodologies evolve and new methods are developed, it is important that they be documented and shared (Brown & Strega, 2005; Smith, 2012). Further, institutional and funding support for this type of research is essential in facilitating work that can meaningfully engage and mobilize Indigenous knowledges and ways of knowing.

Reconciliation and creating space to engage in cross-cultural dialogue

Participants in this research, alongside many others (c.f. McGregor, 2012; Sandford & Phare, 2011; Walkem, 2007) have emphasized the value that Indigenous perspectives and ways of knowing around water can bring to informing public discourse and the development of more sustainable, healthful, and respectful relationships with water in Canadian society. As Indigenous legal scholar John Borrows has noted, to focus only on Indigenous control of Indigenous affairs, is to ignore issues of “cohesion, unity, peace” (2002, p. 155). As this research highlighted, there is much value in the creation of respectful spaces to share and tell stories together that can support mutual understanding and contribute to expanded and more nuanced thinking around

how we live with, and relate to, water. While less tangible than policy and legislation, as participants in this research emphasized, such dialogue can contribute to transformative learning and act as a catalyst for change. Opportunities for cross-cultural dialogue are also identified as important to moving forward with reconciliation and renewed, respectful relations between non-Indigenous and Indigenous peoples in Canada (TRC, 2015). Innovative methods for research dissemination can play a valuable role in supporting such dialogue by sharing and mobilizing Indigenous perspectives and understandings, providing those whose knowledge is being shared express their interest (and consent) in doing so.

CONCLUSION

The voices and lived experience shared through this work contribute to a better understanding of the scope and multidimensional nature of water-related issues and impacts in Indigenous communities in Canada. But they also do much more. Together, the perspectives shared in this research illuminate the work involved in emerging from the complex water challenges we face today, both within and beyond Indigenous communities, through reexamining and rebuilding relationships, and the critical role of dialogue and storytelling in this regard.

Indeed, the stories we tell about the water and land we share are important. They can shape and create meaning; transcend boundaries and transform understanding; they connect people, places, diverse histories and ideas. If we are to develop more healthful, respectful, and balanced relationships with water, and each other, these stories must include and honour the voices and vision of Indigenous peoples in Canada. It is in these stories – told individually, collectively, and through many different voices – that we sow the seeds for our future. It is in these stories that we can reimagine what is possible.²⁰

²⁰ The ideas expressed in this concluding paragraph are inextricably linked with, and informed by, those communicated by many others, including Rita Wong (2012); Thomas King (2003); Leanne Simpson (2011); Cheryl Bartlett, Murdena Marshall, Albert Marshall, and Marilyn Iwama (2012); and Linda Hogan (1995); as well as the wisdom and teachings so graciously shared by the participants in this research, and for which I am filled with immense gratitude.

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APPENDIX A: Water Dialogues podcast script

[Sharing circle dialogue in *italics*]

MIX CLIP: You're from the land. The land is part of you. It's in you. (George)
It's not just Native people, or Indigenous people, or the original
Canadians that have treaty rights, *all* Canadians have them. (Tuma)
You have to listen to us. You can't just ignore us. (Will)
When something is sacred, it might not be for sale. (Dee)

SFX: Sound of waves

Music: "I am only leaving so I could come back again"

SCRIPT: All life depends on it. Yet so often, in this country, we take water for granted. This is a podcast about reframing the dialogue around water management in Canada. And I put management in quotes, because that's only one way to think about water: As a resource to manage. There are other ways of thinking about it too -- other ways of understanding, of knowing, of being in relationship with the natural world.

In this podcast we take you to the Wabano Aboriginal Health Centre in Ottawa, unceded Algonquin territory, to a Water Gathering that was held as part of a Canadian Water Network-funded project. I was a research assistant on that project and one of 28 people who attended the gathering: A group of Indigenous and non-Indigenous researchers and practitioners from across the country.

Our goal: To have an open and frank, inclusive and sometimes difficult, discussion about using our diverse knowledge systems together to address the water issues we face in Canada today -- from the lack of safe drinking water that is a reality in so many Indigenous communities, to the pollution of our shared waterways, to the very essence of how we think about water, human rights, and responsibilities.

These are conversations we hope will extend beyond our Water Gathering at the Wabano centre. Conversations that we believe can help shape a new narrative about how we live and relate to water in this country, and each other. A new beginning: That's what Wabano means in Ojibwe. The dawning of a new day.

SFX: Background noise at Wabano

CLIP: (Guy, circle) *Good morning everybody. Whose first time is it in this room, this building? What do you think so far? (Beautiful).*

SCRIPT: Our format for the gathering is a sharing circle, where each person has a turn to speak as we reflect on different topics and questions. Guy Freeman, a member of the Métis Nation, originally from Flin Flon, Manitoba, is our facilitator for the day.

CLIP: (Guy, circle) *This whole building is sort of a teaching building. You are sitting in a room with 13 moons around you. These pillars are each of the 13 moon teachings from the Ojibwe culture...*

SCRIPT: The pillars form a large circle around us. Overhead, there's a high dome ceiling, and the acoustics are striking. Every noise reverberates. It's a place where sounds and voices otherwise muted, can suddenly fill the room.

CLIP CONT: (Guy, circle) *Well this is a beautiful day. It's a beautiful territory, and we are going to start by introducing Albert Dumont our Elder to come and open for us, so please welcome Albert Dumont.* (Albert D, circle) *Thank you very much.*

SFX: Ambient ("Swale")

CLIP: (Albert D) *So this prayer you are going to hear has been in this country for thousands of years. And it was outlawed, because our spirituality was outlawed. Our right to vote was outlawed. We didn't have the right to vote until 1960. The right to vote is powerful, but our spirituality is even more powerful than that. So I want to say to you, good spirit, how grateful we are..*

SFX: Sound of waves + Ambient

CLIP: (Albert M) In our understanding nature is our source of life. And if we don't do our part, then are we not compromising our very existence?

SFX: Sound of waves

CLIP: (Angie) *My name is Angie Gillis, and I'm from Eskasoni First Nation. My clan name is [Mi'kmaw word], which represents the butterfly.*

CLIP: (Angie) *I feel like I'm the generation that lived life, you know, where we didn't have to worry about water. Where my grandfather would take me out on the streams and we'd go fishing. I go walk those streams now, the water's a lot lower in those same brooks. We are constantly testing the water quality. There is now that underlying fear that we are drinking water that isn't good for us. As a child I don't ever remember having that fear. And as I'm about to bring a child into this life, I realize we've kind of failed that next generation.*

SFX: Transition ("Swale")

CLIP: (Angie) One thing my grandfather always taught me was about the seven generations. You know, he would always talk about how I was the 7th generation and how we always have to be forward thinking, and forward, you know, seeing. Like *Netukulimk* is a Mi'kmaq term for taking what you need, for today, but leaving enough for future generations.

SFX: Transition ("Memory Wind")

CLIP: (Ken) [Introduction in his language]. My name is Ken Paul. I'm from the Maliseet First Nation in Etobik.

CLIP: (Ken) From traditional teachings we believe everything has a spirit, and people don't really understand what that means. So if you look a stream or a small river or anything like that, you think that stream has a spirit. But if we talk about the quality of the water that's in that stream and whether it supports life, then we're talking about the fact that the spirit is strong. If that water is polluted then that spirit is weak. So the work that we have to do today in order to

prepare our world for 7 generations into the future is to work on strengthening the spirit of our water. Which means cleaning up our water systems, taking responsibility for things such as sewage, pesticide runoff, not doing too many diversions, 'cause that's another big problem in areas where there's water depletion. And in doing this, like you are actually doing sacred work.

SFX: Transition ("Swale")

CLIP: (Tuma) *[Introduction in his language] My name is Tuma Young and I'm from Cape Breton.*

CLIP: (Tuma) I grew up being told you have Aboriginal rights, or that you have treaty rights, but then we often forget there's a corresponding part to this that we have an obligation or responsibilities. So we can assert that we have an Aboriginal right to clean water. Or we can we say that maybe in some treaties, we can say that we do have a treaty right to clean water. But let's not forget there is also a corresponding responsibility. What is our responsibility to ensure that the water is clean and safe? What is our obligations or our responsibilities to the water?

And I often tell people that every single other Canadian has those treaty rights. They are part of the other side. So it's not just Native people, or Indigenous people, or the original Canadians that have treaty rights, *all* Canadians have them. And if they have them, then they also have treaty responsibilities.

SFX: Transition Music ("I am only leaving so I could come back again")

CLIP: (Dee). *[Introduction in her language]. My name is Diana and I'm from Sipekne'katik First Nation. I work with a community in Nova Scotia, a community of women that became afraid of their water.*

CLIP: (Dee) So I'm working on assessing the environmental health of the community at Pictou Landing First Nation who've been impacted by the pulp and paper mill dumping their effluent next to their community for almost 50 years.

SFX: Music ("Silence")

It's a long history, started in the 1960s, you know the Nova Scotia government needed to look at big industry, what could be attracted of the area, that could take advantage of resources in the area that would also bring employment, because there was chronic high unemployment. And they were able, at the time, to attract a pulp and paper mill industry to Nova Scotia. There were quite a few mills. And when they built the mill they needed a place to dump the effluent that gets produced in that whole process. And so what happened is, they like deliberately piped – like under a harbour and across land – about 6 miles to dump the effluent next to the community of Pictou Landing. And so it's this environmental racism, you know, why did they choose to like deliberately route the effluent there?

SFX: Music ("Silence")

For a community to be afraid of water, is really something when water is so sacred. And their memories of everything thing they got from the water and from that harbour that was adjacent to their community, um, they referred to it is as *a'se'k*. And *a'se'k* in Mi'kmaq translates to "the

other room.” Like, if you said to a child *a’s’e’k* [Mi’kmaq word], you’re telling them go in the other room. And so *a’s’e’k* this harbor, to them was an extension of their home-

SFX: Transition + Ambient (“Swale”)

So women are the protectors of water and have the ceremonies to honour water. And the women in the community that I work with are the protectors of the water. And it’s that role that, like, mobilized them.

So I was a, I’m a survivor of the Indian residential school, so I went into the residential school system when I was 5. And so in my community, in my family, we didn’t really have strong exposure to cultural things. Although my father’s generation did, they didn’t pass it off to us and then we went into residential school. And then I moved to Toronto, lived in Toronto, didn’t really do cultural things. And it’s really only coming back to Nova Scotia 11 years ago that I’ve really started to reconnect with my community, and started to understand ceremonies and language.

SFX: Transition (“Swale”)

CLIPS: (Dee, intv)

This term, *Weji-sqalia’timk*, which translates to “the land that we sprouted from,” conveys how the Pictou Landing First Nation community believes about their origin. So when you pollute it with environmental pollutants, you’re polluting where we believe we came from, where all of creation has come from. And so you are cutting us off from our spiritual connection, from our cultural connection, our ability to pass on those traditions. And so that whole concept is so central to what has to be rebuilt to get that connection back to before they started polluting the land in the first place.

SFX: Music (“Highway to the stars”)

CLIP: (Will, circle) *The idea that you can get rid of your waste by putting it in the water and it goes away from you, is an idea that we need to throw away. And we need to understand that all of our systems are affected.*

CLIP: (Angie) The earth shows us how we can live. It gives us everything we need to live. Um, unfortunately because of everything that’s been introduced into the systems, we’ve kind of had to be a bit more cautious. Like it’s gotten to a point where not even what is falling from the sky is healthy any more.

CLIP: (Clifford) My name is Clifford Paul from Membertou First Nation.

Our place is that we have to be part of nature. We have responsibilities. And that we must teach our future generations the ancient way that there is balance. There is life. There is appreciation. That I am part of the earth. I am made of the same materials, in my neck of the woods, as the trees, as the birds, as the fish. When I die, I go back to into the earth. My body builds other things. We just go through that constant flux and pattern of change. That’s the way the Mi’kmaq think. Constant flux and motion, right? So it’s easy to understand that when I do my prayer, at the end of my prayer I say *Msit No’kmaq* – “All my relations.” Not just uncles, sisters, and all that stuff. It means the plants, the animals.

The relationship with the natural world should be that of respect: An attachment, a connectedness to nature. And it's unfortunate our kids today are losing that spiritual connectivity, losing that awareness.

Our kids and some, a lot adults are divorced from nature. They can't *feel* what nature does for them. Or *feel* an attachment to the land, the water and the earth.

You've got to picture our ancestors. They dove for lobsters, they climbed cliffs for eggs, they speared eels through the ice, they chased moose in the deep snow. All their activities was for survival, for comfort, to raise the children with the stories. So a person that lives that kind of life – imagine his or her spirituality. How it was developed, without walls, without a church. You know, it was developed in a relationship with the land; Relationship with mother earth; Relationship, knowing where you are within the universe. Because they knew: If you look at the Milky Way, that's the spirit path. We are part of the heavens because we are on that Milky Way. And we are made of the same materials as the stars. So we are the earth, we are the stars. Our ancestors knew all that. Heightened, heightened awareness of themselves and where they fit in the universe, where they fit in world, where fit with the nation, their family groups, their families.

MIX CLIP: [Soundscape]

I think a changing moment was when it was described as the lifeblood of mother earth. (Erica)

The water that runs through her runs through us. (Barbara)

How can I forget that the first nine months of my life, I was in the ocean of water? (Albert M)

The first woman was our sacred Mother the Earth. (Barbara)

When you look at watershed, you look at all the tributaries going down the main stem, its arteries going into capillaries. (Erica)

The water that runs through her runs through us. (Barbara)

SFX: Background noise at Wabano + waves

CLIP: (Heather, circle) *At our first water gathering, just as a bit of a refresher, we spent some time together in a sharing circle very similar to this.*

SCRIPT: One the reasons for this water gathering is to report back on the results of a collaborative research project that began a year ago. That project began with a similar gathering to this one, and helped shape the project at the outset.

CLIP CONT: (Heather, circle) *What came out of that first water gathering is listed here: First and foremost that Indigenous peoples emotional relationship and gendered ties to water and land are frequently ignored in water research and management today; that Indigenous ways of knowing and doing are generally not valued, generally discounted and not implemented; that water research is often not situated within a larger more holistic understanding of water..*

MUSIC: "Curtains are always drawn"

CLIP: (Khosrow) One of the clear things we hear when we go to different Indigenous communities in Canada, but also other countries I've been in, is that their voice is not heard. Or

when it is seemingly heard it is not valued or it's ignored. Or when it comes to decision-making, uh, the Western approach, and the outcome of Western way of looking at things always take precedent over Indigenous approach.

SCRIPT: Khosrow Farenbash is an engineer and retired professor from the University of Guelph.

CLIP: (Khosrow) And I think, so the whole situation - it's not just the water situation - the whole situation that we see in Indigenous communities, is a manifestation of colonialism. It's a manifestation of a system of belief that considers itself the dominant form. Um, considers itself the civilized form. Has a very specific notion of progress. And then feels so sure of itself, that it imposes itself on other systems, other approaches. So I would say what we have done, I believe what we have done, is that we have gone to Indigenous communities and told them and forced them to follow our way of dealing with water: Our perception, our terminologies, our way of managing resources. And these are foreign to these cultures. They have their own ways. They have their own spiritual beliefs. They have their own knowledge system that's highly sophisticated. We have ignored those, and the process it's not working. And it's not a surprise, really. We shouldn't be surprised it's not working.

SFX: Transition ("Swale")

CLIP: (Khosrow) Of course communities are unhappy with their ability to influence their own destiny. And I believe colonialism, or colonial approaches, lie at the heart of so many of the issues and problems that we are facing today, not just in Indigenous communities, but all over the place. It is really.. Decolonization is really about reorienting ourselves, so we can create inclusive spaces, that we can allow diverse approaches, that we can respect differing viewpoints.

SFX: Transition ("Satellite bloom") + background noise at Wabano

CLIP: (Jamal, circle) *I'd like to follow up on the theme of Indigenous relationships to water, and the need to stress the vitality of Indigenous relations to water as they are experienced at the level of individuals and families. Right now in Nunavut, there are 100s maybe even 1000s of families, individuals, out starting spring hunting activities, being out on land for weeks, months, obtaining all water from natural sources. None of it treated or chlorinated, multi sea ice, melt water pools, snow melt runoff, lakes, rivers, even glaciers...*

CLIP: (Jamal) My name is Jamal Shirley. I'm from Iqaluit, Nunavut. I work at the Nunavut Research Institute where I manage research programs and partnerships.

First just to describe the reality. Nunavut is made up of 2/5's of Canada's landmass, 60% of our coastlines. We live in 25 isolated communities that are only accessible by air for 9 months of the year, and then by ship during a very short summer re-supply period.

Although with live in a territory that has one of worlds largest stores of freshwater, we actually have major water security issues. Boil water advisories are becoming more frequent. Water infrastructure is degrading to the point of catastrophic failure in some communities. Resources to upgrade and replace water infrastructure are lacking. The capability and expertise in our communities to perform lab-based tests for water quality as required under Canadian drinking water guidelines is lacking. So we have a lot of challenges with providing access to abundant safe drinking water in our communities through the public drinking water systems.

Having said that, a lot of our, the residents of Nunavut are 85-90% Inuit still maintain very, very close connection to the land and to water. A lot of people still identify traditional sources, raw untreated natural sources as by far their preferred source, which are source of vitality and health and cultural connection for the Inuit who use them. How to locate, collect assess and protect those traditional sources is a really important area of traditional Inuit knowledge, and again is specific to families and regions.

In fact there is a whole suite of Inuktitut terminology related to water resource use. One term I will give you is [Inuktitut words], which means it no longer smells like land. So people will taste and smell water from land and determine when that water is fit for consumption.

The issue we have in Nunavut is a lot of decision about locating the -- drinking water reservoirs were chosen by engineers, and municipal administrator, and territorial government, planners and other folks, without consulting local people. So a lot of these sources are not where local people would have chosen.

There's a lot of disillusionment and disengagement I find with some decision-making process, because people feel oh there are not going to listen to us anyway. Why should we bother going to that public meeting or giving our feedback on the public on the water license hearing for the community.

SFX: Transition ("Swale")

There's a general overriding principle from Inuit Knowledge called, *Avatittinnik Kamatsiarniq*, which means respect and care for environment, and that encompasses land, water and wildlife.

There's a lot of concern about the impacts of development activities on fresh water supplies -- the knowledge that, you know, the connectivity within the watershed is vulnerable.

As community members get more interested in water issues and water research a lot of independent grassroots initiatives will spring up. When the research and the monitoring is initiated from concerned people in the communities, not kind of introduced or imposed on, then I think there will be natural opportunities for local knowledge and Inuit perspectives and values to be integrated in those research processes and to be scaled up to the bigger water management frameworks. I think those grassroots, bottom up initiatives will be absolutely key.

SFX: Music ("Euphoric")

SCRIPT: One of those initiatives is taking place in Pond Inlet. It started over community concerns that the municipal drinking water supply might be causing gastro-intestinal illness.

CLIP: (Tim) Tim Anaviapik-Soucie, from Pond Inlet, Nunavut, Baffin Island.

I was a hamlet councilor. Couldn't get any funds and a civil engineer couldn't do anything for us. And I unexpectedly got in contact with a researcher, and went from there. Planned everything, I was in trained in everything in the research aspect. And from there we are on our second year of water monitoring.

It's great. It's just like learning anything else. But as Inuit you feel more, like spiritually connected; like a cultural pride. You feel cultural pride.

MUSIC: “Euphoric”

SCRIPT: Tim’s research is paving the way for more community-led water research in Nunavut. He’s been traveling to other communities to provide training, so they can initiate projects of their own. At home, in Pond Inlet, Tim and his team are working to expand their program. Plans are now underway to take youth out on the land with elders, so they can learn more about water from them.

CLIP: (Tim) They always have stories and ways to make the young understand. And when they do that they all have a good time and it’s easier to teach them things. Our elders say any knowledge passed down is good. Any knowledge someone takes is good because they can do something with the knowledge and pass it on.

MUSIC: “The Tide”

CLIP: (Tim) *Inuit Qaujimagatuqangit*. It means knowledge passed down in Inuktitut. It means to me, respect. They were stewards of the land for generations. They survived the harshest environments, passing knowledge down, and it’s still used today.

SFX: Sound of waves

CLIP: (Heather) *Alright, welcome back to round three. We are going to start the circle, carrying on conversation we were having before break, but also if you wanted to speak around next steps, as we start to sunset in our day a little bit.*

CLIP: (Will) *One of the things from a Métis perspective is how the inclusion of the Métis in a project like this is very much appreciated. We get lost a lot of times in the word Indigenous, and Aboriginal.*

CLIP: (Will) My name is Will Goodon. I’m from the Turtle Mountains in Manitoba, and I’m a Métis. We have had lots of different names over years of existence. One of them was we were called the in-between people, so we are in-between the First Nations cultures and in-between the European cultures so we were kind of like a bridge. Back in the day we were sort of the – because we spoke all the different languages, and we had our own language - that we were sort of the commerce, the traders. So being the in-between people I think can help bridge this integration between Western-based scientific approaches and the Traditional Knowledge as well. And I you know there is no doubt in my mind that there is room for both. But I think a lot more needs to be done to reach out to the people that are on the land, using the land, and have the connections to the land and water - and when I say land I mean land and water. We need to listen to those people when they say, something is changing, something is happening.

The importance really can’t be overstated that there is knowledge out there. We just need to include people, and be respectful to the people who have that knowledge.

MUSIC: “We hear things so differently”

SCRIPT: Inez Shiwak, from Rigolet, Nunatsiavut

CLIP: (Inez) *Someone mentioned Muskrat Falls earlier. When Churchill falls was dammed in early 60’s we saw changes in our area where don’t get cod fish any more, our ice isn’t as hard*

as it was supposed to be, we don't get a certain kind of seal that used to come in and give birth. None of that is happening anymore. But because there's no proof, because there was no study done in the 60's nobody is believing us now. And to have, to say that Muskrat falls is this great deal where all of our communities are run by diesel plants, it's like a slap in the face to us as Inuit in our communities, as people who live off the water as people who live off our land. You're, they're slowly killing what we need in our communities.

CLIP: (George) *When the Labrador island transmission link was proposed to come through our territory, we engaged with proponents, we engaged with both levels of government, we did extensive Aboriginal Traditional Knowledge gathering, adding it into the whole environmental process. And we did an honest job in collecting the data and sharing data and we had a lot of legitimate concerns. And you know at the end of the day, when we see a letter signed by the Minister of Environment saying, you know, the benefits of this project outweigh the impacts on the people, the original people on the land. You know, it makes you wonder, you know, why did we do it? What did we gain by sharing our information, sharing our knowledge? Projects like that, mega projects, have such a profound impact on the Aboriginal people that are closest to these developments. And you know, the damage is irreversible.*

CLIP: (George) My name is George Russell Jr. I'm from a community by the name of Williams Harbour, it's part of NunatuKavut, is our traditional homeland in South Central Labrador.

You know someone ask me where I'm from, I say my community, but so many of our elders always say you're not from Williams Harbour, you're from here, you are from the coast of Labrador, and you're from the land. The land is part of you. It's in you. And we grew up, everything, we drank from this land, we ate from this land. This land sustained us for generations, you know as far as our memory can go back. We ate the fish. We ate the birds. We went fishing as the tide turned. We launched our boats when the tide was high. And through time we come from there. We come from this land. We come from this water. It's part of us.

SFX: Transition ("Swale")

CLIP: I think we have to find a way for industry, government, even western science practitioners in a lot of ways, to fully accept that Aboriginal Traditional Knowledge has to be integrated as well. Because I think our people, we always give fair weight to Western science. We don't get the same in return. Engineers, government people, you know if we can get honest buy in from those other people – I think it can happen.

MUSIC: "Vittoro"

CLIP: (George) *You know we all came here, we shared a lot of knowledge. We learned a lot and now we do have that knowledge. And we have something I think we can start fighting for. I think we all have to come together, go to our leaders, and even take it upon ourselves to say, 'We can make change.' Change is good. Change has been done before. And you know hopefully in few years times will look back and say wow I can't believe things used to be that way. Maybe it will all just be water under bridge (I just wanted to make that analogy [laughter]).*

SCRIPT: Earlier in the circle, Clifford Paul brought up the Bras d'Or Lakes management plan as an example of successful collaboration in action. Named CEPI for short, that initiative brought government, First Nations and non-Indigenous communities together to address concerns over

the deteriorating health of the Bras d'Or Lakes. Seven guiding principles were established through the process. Cheryl Bartlett, a retired professor from Cape Breton University, was involved in those early discussions.

CLIP: (Cheryl) *I would like to pick up on something that Clifford brought to our attention, and that is the CEPI process in Unama'ki Cape Breton, and he mentioned 7 principles. So going back to one of those 7 principles, and it was: We need to assist the healing process of Mother Earth towards the damage that we have caused as human beings. But I want to flip back to the evolution of that principle. I think it speaks to the challenges that are before us. So that principle that I just mentioned started off as, 'We will fix damages we have created.' [laughing] Talk about arrogance. We as human beings can't fix mother earth, but we can work with her. And so the wording of the principle changed as the discussion took place towards, 'We will assist the healing of Mother Earth towards the damage that we have caused as human beings.' And still that's a challenge, right? But it reflects a different mindset. It really, really does.*

And I want to speak about the healing process because Murdina Marshall has been sitting beside me all day here, and the reason she's been sitting beside me is some years ago in this very room she spoke about the healing tense in the Mi'Kmaq language. That's a verb tense, like past present future, but it's what Murdina refers to as the healing tense.

MUSIC: "Mangata"

So Murdena says that as you are trying to take responsibility for some of your actions in the past, which may have been damaging to you or your family... or ecosystem. It's very, very imp that you as individual can put your actions and behavior and values out in front of you like an object and walk around them and be able to say, that's what I am. That's what I've done. That's how I've hurt people. This is the value that I had that was leading to my actions. In other words walk around yourself, and say that's me. And then enter into the healing tense, which speaks to the greater consciousness of the group. And work towards a transformation. I need to change towards a more holistic, more healthy, more inclusive consciousness, and I need to heal myself. And that comes from the head and the heart and the collective spirit working together. And the healing tense within the Mi'kmaq language that enables you to do that.

We need to be able to do that for our different knowledge systems. So for the knowledge system that we often refer to as Western science, I as Western trained scientist need to be able to walk around my knowledge system and say that's what I use, that's me. Here's strengths, here are some of weaknesses but that's me. And I know it's not the be all and end all. It's in relationships with other knowledge systems. So I need to be able to work in relationship with [Elders and others], who can similarly walk around their knowledge systems and say, this is what Traditional Knowledge values, this is what Traditional Knowledge sees. And then I need to be able to say, ok I'm going to try and walk around your knowledge system and learn.

Lets learn to put our knowledge systems out there, so that we know what we are about. And I think that's one of the most profound challenges us before us.

These are powerful, powerful gatherings and I hope as a newcomer Canadian that this is the future of our country, of coming together and working together. So thank you everyone.

SFX: Transition ("Pure swell")

CLIP: (Albert D) *I'd just like to tell you about an experience I had, I don't know, maybe around 15, 16 years ago. I used to go up to Gatineau Park. And I'd go up there and enter into forest around quarter to 5 in the morning. This was in the summer time, and the sun would be coming up and I would do a ceremony. But one morning when I was up there, I saw that there was black clouds and the wind was carrying them towards where I was, and I knew there was heavy rain coming. And I knew I wasn't going to get back without getting soaked. So I decided to say right where I was, and experience a drenching. So I'm there with evergreens and the rain came. And it really come down by the bucket full. And it was really coming down, I'm telling you. And I could hear it. I could hear the raindrops as they struck the boughs of evergreens. They were hitting the cedar branches, and the spruce branches, and the pine branches. And then the rain was dripping from one branch to other branch. And I said to myself, oh boy is that ever a beautiful sound. And across the way 200 ft over there was just maples. And then I said to myself I wonder if I listen closely will I be able to hear the raindrops as they hit the leaves. So I listen like this, and I could hear the rain hitting the branches of leaves, and that was a different sound, and it was just as beautiful as the raindrops hitting the branches of the evergreens. So then I listened for sound that the raindrops were making as they make contact with lake surface, and that was even a different sound. And then I listened because there was great big boulders on to the side where I was, and I listened, and it made a different sound yet, the raindrops as they hit those rocks. And it was an amazing experience. It was a teaching that every human being wherever they are in this planet has a right to sing their own song. And whenever we recognize that and appreciate we are going to make like a beautiful symphony, you know it's going to be such a wonderful think. And I don't know if you've experienced a heavy, heavy rain on the land. Don't run from it. Experience it. You are really going to never forget it.*

SFX: Rain + thunder + geese + Ambient ("Loam")

CLIP: (Barbara) Travelling song

MUSIC: "Vittoro"

SCRIPT: That was elder Barbara Hill closing our gathering with the Travelling song.

While our water gathering brought together many voices, there are also many left to be heard. We want to acknowledge, too, that the diversity among the first peoples of Canada is not fully represented here.

This gathering is only one of the many collaborative discussions that we believe need to take place in order to move forward with reconciliation, healing and responsible water stewardship in Canada. We can shape a new path forward in this country - working together across our different knowledge systems, cultures and nations, through renewed and respectful relationships, so that our children need not inherit the [add: continued] legacy of our mistakes, or our inaction. It is these discussions and dialogue that will bring that path into view.

We would like to offer our sincere thanks to everyone who participated in this second water gathering of our project.

CLIP: Tim Soucie, Jamal Shirley, Stewart Hill, Kerry Black, Bob Sandford, Corrine Shuster Wallace, Irving LeBlanc, Ken Paul, Albert Marshal, Cheryl Bartlet, Diana Lewis, David Heinrichs, Will Goodon, Tuma Young, Angie, Erica Perrier, George Russell, Khosrow, Clifford

Paul, Christina Goldhar, Inez Shiwak.

SCRIPT: Our thanks elders Albert Dumont and Barbara Hill for their teachings, and the opening and closing prayers and songs. Thanks also to Guy Freeman for facilitating our discussion, and to the Wabano Centre for welcoming us.

The core research team for this project was led by Heather Castleden, from Queens University, together with Debbie Martin from Dalhousie, Ashlee Cunsolo from Cape Breton University, and Sherilee Harper from the University of Guelph - and their amazing project coordinator, Catherine Hart, with the help of research assistants, Kaitlin Lauridson, Robert Stefanelli, and me, Lindsay Day.

Our thanks to the Canadian Water Network for a Knowledge Translation grant that helped support the creation of this podcast, and to you for tuning in and joining us on this journey. If you'd like to learn more about this project please visit www.WaterDialogues.ca.

CLIP: (Clifford) I think it's happening now. Some accept it, some embrace it, some old-school don't want to even look at it, but we are seeing change. The movement is there, and the world is slowly, like a clam I guess, slowly opening up to it. Sometimes it shut, sometimes they say, oh this is interesting. So the stories will help it a lot. When we do these discussions its storytelling. It's perfect. It's perfect because the researchers are able to use their research, hear the stories and start connecting the dots, like me when I was in University, start connecting the dots. So you always have to share the stories, you have to always put it in story form. And your management plan may not be something that's on paper but in the hearts of the people. The legacy will be the change, not a document collecting dust on a shelf when I'm dead [laugh].

END

APPENDIX B: Podcast Interview Guide

Preamble

Thank you for taking part in this podcast project. Your participation is entirely voluntary and if at any point you don't want to answer a question, we can skip it. If you say something that you don't want recorded, just say so, and it can be removed, even after you have completed the interview. You also have the right to withdraw from the research project at any time, and you can withdraw your interview, up until the public release of the podcast. Do you have any questions before we get started? Okay, let's begin [turn on audio recorder].

Interview Questions

1. Can we begin with you telling me about your interest in water?
 - a) Can you tell me about your relationship with water? What does water mean to you?
2. How is Indigenous knowledge understood by you?
3. How do you distinguish between Indigenous and Western knowledge?
4. How do you think we can work with these two knowledge systems together to improve water management and research in Canada?
 - a) What are some of the key things you think need to be in place for this to work?
 - b) What are some of the challenges?
 - c) Could you describe your experiences with integrative approaches?
5. Do you think an integrative approach can be used for more effective water policy, governance and decision-making in Canada?

Is there anything you would like to add to our conversation today?

Thank you for your time. If you have any questions or concerns regarding today's interview or the podcast project in general, please do not hesitate to contact me, any member of the research team, or the University of Guelph research ethics office. I'll be in touch to give you an opportunity to see how your audio-quotes may be used in context (if the participant requested this opportunity on their consent form) **and/or** I'll be in touch with further information on participating in the editing process (if the participant requested an opportunity to do so).

Thanks again for your time and for taking part in this project.