"WE ARE THE LAND, AND THE LAND IS US":
CONNECTING INDIGENOUS PERSPECTIVES ON
CLIMATE CHANGE IN THE CANADIAN PRAIRIES

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Abstract

Owing to years of Indigenous lobbying, organizing, and scholarship, recent decades have seen growing engagement with Indigenous peoples and their knowledges in environmental management, policy-making, and research around climate change. In Canada, there has been increasing partnerships between researchers and Indigenous communities to collaborate on documenting impacts and responses to climate change and co-producing knowledge to inform policy. While most of this work has been undertaken in the Arctic, there has been little research documenting Indigenous perspectives on climate change in the Canadian Prairies. This thesis aims to address this gap by documenting and communicating Indigenous understandings, experiences, and responses to climate change in seven communities across the Prairies. The research process was primarily guided by and evolved from the vision of the community of Turtle Lodge - an Indigenous education centre in Sagkeeng First Nation, Manitoba – to convene an Indigenous-led, cross-cultural dialogue on climate solutions. Through a process of Indigenous community-based research, the project employed interviews, talking circles, participant observation, and participatory video methods that were designed to support and honour the unique epistemological considerations required when documenting Indigenous knowledge and sharing across cultures. The results illustrate that while communities across the Prairies are being impacted by cumulative effects of climate change and other colonial stressors, many are bringing forward environmental solutions that further their social well-being and self-determination. Through diverse community-led actions – such as community-owned renewable energy projects, land-based education programs, cross-cultural conversations on climate, and ceremony – communities are reconnecting with their traditional knowledges, cultures, spiritualities, and lands, and leading solutions with broader benefits for the earth and humanity. Importantly, the results argue that Indigenous knowledge must be understood not only as a source of environmental observations, but of relational philosophies and values that can inspire the cultural shift necessary to address climate change. In an era of sustainability and reconciliation discourses in Canada, it is critically important to center Indigenous perspectives and leadership in addressing climate change, and this research offers important insight into novel methods of communicating these perspectives within and beyond the academy.

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Disclaimers

Note on Authorship

In accordance with the requirements of the University of Winnipeg, I am listed as the sole author of this thesis. However, the work was only possible with significant contributions from community partners and my primary thesis supervisor Dr. Ian Mauro. A version of Chapter 2 has been submitted for publication with co-authorship by community partners Dave Courchene and Sabina Ijaz as well as Dr. Mauro, and contains input and feedback from them. Further, in accordance with the First Nation's principles of Ownership, Control, Access, and Possession (OCAP; fnigs.ca/ocap) followed herein, the written and video data and results belong to the communities and are shared here with their permissions. I do not claim ownership over the ideas and work of community members presented in this thesis and emphasize that it came about through a collaborative process.

Note on Videos

Some of the videos shared herein are soon to be released, and until they are public they are not to be shared beyond this thesis. In addition to community collaborators, the videos in this thesis were made in collaboration and with support from other members the Prairie Climate Centre research team, as indicated by the credits in each video.

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CHAPTER 1: INTRODUCTION & OVERVIEW

INTRODUCTION & OVERVIEW

1.1 Introduction

"It is not more data that we need for our transformation… but more wisdom."
(Kimmerer, 2013, p. 345)

The world's natural and human systems are in a time of transformation. The magnitude of the current era of global environmental crises – characterized most notably by climate change – cannot be overstated, or underestimated. While many scientists continue to look to western science and technology alone to solve the problem of climate change – even though they are increasingly recognized to have, in part, caused many of the problems we face (McGregor, 2004; 2009a) – others are acknowledging the limitations of western science and looking to the wisdom being brought forward by Indigenous Knowledge Keepers for guidance (e.g. Gilligan et al., 2006; Martello, 2008; Riewe & Oakes, 2006). Perhaps, as Potawatomi scholar Robin Kimmerer suggests, it is not more scientific data that we need most at this moment, but more Indigenous wisdom.

Indigenous peoples have rich, place-based knowledges developed through experience over thousands of years of living in their homelands, and passed on through generations (Battiste & Henderson, 2000; Kimmerer, 2014). Indigenous knowledge (IK) carries ancient wisdom of the environment and at the same time is flexible, fluid, and adaptive to environmental change. IK arises from relationships with the land and other beings (Little Bear, 2009), which, in combination with continued land-based cultural and subsistence activities in some cases, means Indigenous peoples are often the first to observe and experience changes in the landscape (Turner & Spalding, 2013). Because of this, many argue that Indigenous knowledges and worldviews are uniquely valuable in the context of climate change, and must be included in environmental research and management (Berkes, 2008; Raygorodetsky, 2011; Salick & Ross, 2009; Turner et al., 2000; Wildcat, 2009). In the most general sense, Indigenous knowledge systems can offer a more holistic, multidimensional approach, that is distinct from the disciplinary, siloed nature of western sciences (Alexander et al., 2011). In the face of the complexity of climate change – which some have classified as a "super wicked" problem (Levin et al., 2012) – bringing together different knowledge systems and perspectives to inform multifaceted and hybrid solutions is critical (Rathwell, Armitage, & Berkes, 2015). Additionally, as Indigenous peoples have been marginalized through the process of industrialized development – and as a result stand to be

disproportionately impacted by the climate change that this development has precipitated (Abate & Kronk, 2013; Tsosie, 2007) – there is not only a practical but a moral imperative to heed the wisdom and leadership of Indigenous peoples in attempts to address environmental problems.

Canadian society stands at a critical juncture, facing the dual, pressing challenges of reconciling the genocide and dispossession inflicted upon Indigenous peoples in the making of the country, while attempting to mitigate and adapt to rapidly accelerating climate change. At the centre of the country, in what is now known as Manitoba, many of the difficult truths about our changing world are being spoken by Indigenous leaders at Turtle Lodge. Located in Sagkeeng First Nation, Manitoba, Turtle Lodge is an internationally recognized gathering place for Indigenous and non-Indigenous peoples (turtlelodge.org). The Lodge was founded by Anishinaabe Elder Dave Courchene (Nii Gaani Aki Inini – Leading Earth Man) in fulfillment of a vision he received of a place that would bring truth and healing to the people and to the land (Turtle Lodge, n.d.; **Fig. 1**). For the Anishinaabe people, truth is one of the seven sacred teachings and is represented by *mikinaak* (the turtle) (Turtle Lodge, 2017c). When you are standing in Turtle Lodge, it is understood that you are standing in truth (D. Courchene, pers. comm., May 25, 2017). While Turtle Lodge has been dedicated to environmental stewardship since it was founded in 2002, in recent years the community has drawn their focus to the issue of climate change with a vision to unite the human family to address the issue through a convergence of diverse knowledges (Turtle Lodge, 2017c). This vision follows an ancient prophecy of their peoples; as outlined in *Ogichi Tibakonigaywin* - The Great Binding Law - written by Dakota, Nehetho, and Anishinaabe Knowledge Keepers, "[o]ur ancestors prophesized of this time – a time of climate change, a time of crossroads, a time of self-examination, and a time of choice… [W]e call on all Nations of the world to join us in the spirit of our Original Instructions to care for Mother Earth together" (Oshoshko Bineshiikwe et al., 2015). In response to this call and in fulfillment of vision, Elder Courchene and Turtle Lodge initiated the Onjisay Aki ("Our Changing Earth") International Climate Summit in order to bring Indigenous knowledges to the forefront in a cross-cultural dialogue on climate change.

Figure 1. *Turtle Lodge Centre for Indigenous Education and Wellness in Sagkeeng First Nation, MB, Canada*

In conversations at Turtle Lodge, the Elders emphasize the need for defined actions on climate change grounded in IK and carried out through collaborations across Nations. Initiatives such as community-based renewable energy projects and land-based educational programs are increasingly common in Indigenous communities in the Prairies and across the country (e.g. Henderson, 2013; Krupa, 2012a; Wildcat, McDonald, Irlbacher-Fox, & Coulthard, 2014), exemplifying Indigenous leadership on climate change and collectively contributing to a societal transition to sustainable communities. As Elder Courchene contends, the First Peoples of these lands have unique perspectives and valuable contributions which must be included in discourses on climate change in Canada (D. Courchene, pers. comm., May 25, 2017). Given the current Canadian government's stated commitments to building new nation-to-nation relationships with Indigenous peoples, and to addressing climate change through the Paris Agreement, research collaborations to document, connect, and center Indigenous perspectives on climate are timely and critically important. Through an existing relationship between the Turtle Lodge and Dr. Ian Mauro at the University of Winnipeg – recognizing Mauro's previous and ongoing collaborations with Indigenous communities across Canada on climate change – Elder Courchene invited Mauro and his research team at the Prairie Climate Centre to collaborate on the Onjisay Aki Initiative. This strong, trust-based relationship has been the basis for guiding this research project.

Importantly, an initial assessment of the literature demonstrates that, while there is increasing recognition of the importance of engaging with Indigenous peoples and their knowledges in the context of climate change in Canada (e.g. Berkes, 2009; Krupnik & Jolly, 2006; Turner & Clifton, 2009), there is a deficit of understanding regarding the connections between IK

and climate change in the Canadian Prairies. Further, the literature also points to a need to move beyond recognition of IK to illustrate how to democratically and respectfully engage with Knowledge Keepers as experts in climate research and mobilize IK in this field (Nakashima, 2014).

1.2 Research Purpose and Questions

The purpose of this Master's research is to document Indigenous perspectives on climate change in Indigenous Nations across the Prairies, and explore the use of video methods in sharing these perspectives. Through a series of case study interviews and gatherings with members of Anishinaabe, Cree, Woodland Cree, Blackfoot, Métis, and Dënesųłiné Nations, at Turtle Lodge in Manitoba and in communities across Saskatchewan and Alberta, a range of knowledge of and responses to climate change were documented. Community-guided written and video materials have been produced to share these perspectives and initiatives across the country in order to contribute to a dialogue on climate change rooted in diverse knowledges and collaboration. The specific research questions addressed are:

1. What are some of the ways in which Indigenous peoples living in the Prairies of Canada are understanding, adapting, and responding to climate change?
2. What is the role of Indigenous knowledge in addressing climate change, according to Indigenous peoples in the Prairies?
3. How can participatory video be used to highlight Indigenous perspectives on climate change and support Indigenous self-determined climate action?

The proposed research seeks to respond to guidance from Turtle Lodge Elders and community collaborators, gaps in the literature, and current political contexts, by building better understanding of some of the perspectives, knowledges, and initiatives of Indigenous peoples in the Prairies on climate change. To set the foundation for this study, I begin with a review of the literature concerning IK on climate change, and existing methods of communication and collaboration in this field in Canada.

1.3 Background

1.3.1 Indigenous knowledge, climate change, and colonialism

To attempt to singularly define Indigenous knowledge would be misguided. IK is not uniform across the diversity of Indigenous peoples in Canada, and cannot be easily categorized or separated from its origins (Battiste & Henderson, 2000; Kovach, 2009). Rather, it is accumulative and dynamic, shaped and reshaped over generations through experience and observation of local environments (Grenier, 1998; Berkes, 2009). Indigenous peoples' worldviews may be described as "cognitive maps of particular ecosystems" (Battiste & Henderson, 2000). While Indigenous knowledge systems are diverse, rich, and unique, there are some common principles across these knowledge systems (Battiste & Henderson, 2000; Cajete, 2000; Little Bear, 2009) which some scholars argue are important in the context of addressing climate change (Rathwell, Armitate, & Berkes, 2015; Raygorodetsky, 2011; Wildcat, 2009).

A central principle in IK is relationality. It is understood that IK originates through relationships and is shared with all of creation (Little Bear, 2009; Wilson, 2001; 2008). Indigenous peoples around the world have a spirituality that is based on this relationship to creation (McKay, 1992). In many Indigenous peoples' creation stories, humans were the last to be placed on earth, and thus are taught to be humble and learn from the other beings of creation who are their relatives (Kimmerer, 2013). For First Nations, creation stories depict a special relationship between Nations and Mother Earth, and guide them in their relationships with each other, other beings, and spirit (Pratt, Bone, & the Treaty and Dakota Elders of Manitoba, 2014). The understanding of these relationships give rise to holistic ways of seeing the world, centered on concepts of interconnectedness and balance between all beings (Borrows, 2006; Ermine & Prince Albert Grand Council, 2004). In Anishinaabe traditions, it is understood that these relationships to Mother Earth and all of creation come with roles and responsibilities, to honour them through respect, reciprocity, and thanksgiving (Borrows, 2006; Johnston, 2003; Kimmerer, 2013; 2014). Anishinaabe Knowledge Keeper Basil Johnston (2003) writes "[t]he earth is our book; the days its pages; the seasons its paragraphs; the years, chapters" (p. vii). Mi'kmaq and Chikasaw scholars Battiste and Henderson (2000) describe it as "ecological kinship," through which teachings from the land define Indigenous peoples' lives, responsibilities, and duties. Many Indigenous peoples consider themselves an integral part of the earth (Battiste & Henderson, 2000; Johnston, 2003).

Further, the principle of interconnectedness, and the knowledge that evolves through these relationships, is inextricably linked to Indigenous languages. As these languages develop and evolve through observation of and experience in the natural world, the relationship to the earth and creation is captured in the words themselves (Pratt et al., 2014).

These rich, land-based knowledges, centered on relationality and stewardship and developed over thousands of years of living in close connection with their homelands, are epistemologically different from western scientific knowledge. They arise from, and are embedded within, distinct ways of knowing which have allowed Indigenous communities to adapt to social and environmental changes over past centuries, and continuing today (Green & Raygorodetsky, 2010; Nakashima et al., 2012). The adaptive nature of IK, as it echoes environmental changes, has prompted some to suggest that it may act as a buffer against climate change impacts to some extent (Berkes, 2009; Galloway McLean, Castillo, & Johnson, 2012). Indigenous knowledge of environmental conditions, in combination with continued subsistence livelihoods and close connection to the land in some cases, has allowed Indigenous communities to identify short and long-term climatic changes and resulting environmental and cultural impacts (for examples see Cuerrier et al., 2015; Ermine & Pittman, 2011; Vinyeta & Lynn, 2013). As described by Ermine and Prince Albert Grand Council (2004), "[t]he value of the Elder perspective is that they have a holistic interpretation of the climate change concept and therefore relate to climate change as a broader process that goes beyond western scientific hypotheses and measurements" (p. vi). Thus, though Indigenous peoples have contributed the least to climate change, their knowledges offer valuable insight on the complexities of the natural world and our relationship to it, which may help humanity address the monumental challenges that climate change presents (Raygorodetsky, 2011; Wildcat, 2009).

It is not only important to center Indigenous perspectives and leadership on climate because of the value of their diverse knowledges, but because the same systems driving climate change have dispossessed and marginalized Indigenous peoples, causing them to be disproportionately vulnerable to climate impacts (Tsosie, 2007; Wildcat, 2009; 2013). Colonialism and capitalism created the foundation upon which modern industrialized and militarized society was built in Canada, predicated on carbon-intensive economics fueled by Indigenous lands and resources (Alfred, 2009a; Whyte, 2017a). As Whyte (2017a) outlines, colonial-induced climate change is nothing new to Indigenous peoples; rather it is a continuation and intensification of centuries of

destruction of the ecological conditions central to Indigenous peoples' cultures, health, economies, and political self-determination. Wildcat (2009) bluntly summarizes the disproportionate impacts that Indigenous peoples are facing: "For many of us immersed in industrial and postindustrial societies, the truth may indeed be inconvenient, for the time being, but for many indigenous peoples around the world the truth of climate change is deadly" (p. 23). Thus, following Indigenous leaders, scholars, and communities to increasingly recognize and engage IK on climate change is critical to address colonial legacies and support Indigenous peoples' adaptive capacities and self-determination, while also informing solutions that can benefit society more broadly.

In this light, the ways in which IK is documented and shared is particularly important given the colonial context. While partnerships between researchers and Indigenous communities hold great potential to benefit both through mutual knowledge exchange and co-creation (Rathwell, Armitage, & Berkes, 2015), careful attention must be paid to ensure that IK is not extracted from its context (Little Bear, 2009; Williams & Hardison, 2013) or co-opted in the name of western climate solutions (Whyte, 2017a). In light of critiques of the ways IK has been engaged in the literature, some research collaborations have sought to explore novel methods for documenting, communicating, and mobilizing these knowledges, such as participatory and documentary video and oral history projects. It has been suggested that these methods better align with oral traditions of Indigenous societies, and may address issues of representation, power, and voice in research with marginalized communities (Aporta & Macdonald, 2011; Baele, 1994; Elder, 1995). As these methods are still relatively novel in the field of Indigenous climate change studies, there is need for further investigation into their use for communicating IK within and beyond the academy.
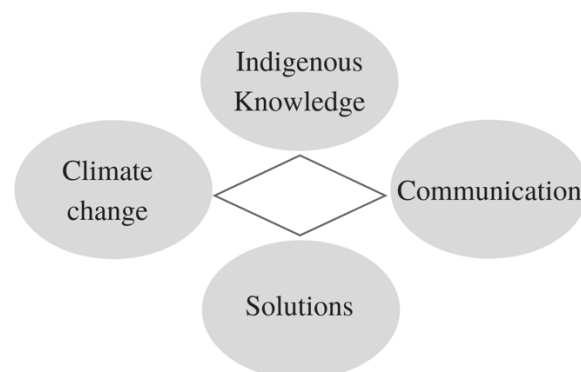
Figure 2. *Four main areas of research interest related to this thesis: Indigenous knowledge, climate change, communication, and solutions.*

As reviewed above, this research draws on literature at the intersections of four broad topics: Indigenous knowledge, climate change, communication, and solutions (**Fig. 2**). This literature is discussed further in subsequent chapters.

1.3.2 Researcher Background

The principles of reflexivity in qualitative research methodologies and relationality in Indigenous research methodologies underscore the importance of positioning myself as the researcher within my work (Absolon, 2011; Peters, 2017; Wilson, 2008). Understanding that research is based on construction of knowledge by researchers and collaborators – as people in specific economic, political, social, and cultural contexts – locating oneself within the research helps to integrate accountability, trust, and decolonize the research (Koster, Baccar, & Lemelin, 2012; Peters, 2017). At the same time, while I aim to provide some background on myself as a researcher, I understand there are limits to what I can know and understand about myself, my research participants and collaborators, our relationships, or the broader context in which we work (Rose, 1997).

I am a settler-descendant woman with Ukrainian, Scottish, and mixed ancestry. To be honest, I knew very little of my family's history prior to the last few years, and am still learning. While some of my ancestors several generations back originally settled in the Prairies, I was born and grew up on the West Coast, in the traditional territories of the Squamish, Tsleil-Waututh, Musqueam, and Sto:lo Nations near Vancouver, BC. My family is quite active, and I was very fortunate to spend much of my childhood between the mountains and the ocean – camping, hiking, skiing, swimming, and playing lots of outdoor community sports. This time spent outside was formative in igniting my passion for the "environment" and how we as humans interact and relate to the natural world. I have always felt I had a responsibility to do something about the environmental destruction I was witnessing and was complicit in, and began at the age of 13 to volunteer and organize in my school and community to try to be part of positive social and environmental change. I have continued this work through my teenage and adult life – from fundraising to support student education overseas, to campaigning around environmental issues in electoral politics, to organizing with divestment and climate justice campaigns.

I became particularly interested in climate change and climate justice as an undergraduate student of biology and through my community learning. In classes I was learning about the ways

ecosystems in Canada are being impacted by climate change; while outside of the University I began to learn of the communities and cultures who have long been connected to those ecosystems, and what these changes meant for them. I was awakened to the part of the story of these lands that I had not been taught in high school – the histories and ongoing violence and displacement of Indigenous peoples in Canada – and how these stories are connected to the industries and systems driving climate change.

Through these years, I also began to understand how my life has been shaped by these same unjust systems. My motivation and capacity to learn and be involved in justice work in my community is directly related to my privilege as a white middle-class settler living in the settler-colonial state of Canada. I have been afforded access to education up to the graduate level and many opportunities in academic and other work which have led me to my current position in this Masters program and connections with my advisor, community relationships, and funding support. I know these opportunities have not arisen by luck, but are the result of the capitalist and colonial systems which have benefited me while marginalizing and dispossessing Indigenous peoples, exploiting their resources, and exacerbating climate change. While I see how I am complicit in the continuation of these systems on the one hand, at the same time I strive to use the benefits they afford me to challenge and dismantle them, and contribute to alternatives. Despite my attempts to support the work of communities that have been marginalized by the state, I am constantly questioning my position and power as a non-Indigenous academic working at a western University. I often question the space that I am taking up as a settler student in an Indigenous Governance graduate program. Anishinaabe scholar Kathleen Absolon (2011) says that for Indigenous 're-searchers' "decolonization and indigenizing is about both knowing and having a critical consciousness about our cultural history" (p. 19). I believe that non-Indigenous people too have a responsibility to learn and understand these histories – from the perspectives of Indigenous peoples – in order for us to play a role in decolonization and moving forward together.

As I have learned throughout this project, important aspects of questioning my position in my work are understanding where I come from and what I have to "offer"; who I am working with and where they come from; the histories of the lands we work and live on; and that, above all, it is about relationships. Shawn Wilson (2008) says the more relationships the researcher has, the more fully they will understand. I have been extremely fortunate to have been introduced to and developed close relationships with the community partners we have worked with – in particular

Elder Dave Courchene and Sabina Ijaz at Turtle Lodge – who have been instrumental in guiding this research journey. Through countless meetings, ceremonies, gatherings, and meals spent together, we have developed respect for and trust in each other and the work that we do. They have graciously welcomed me into the community, and from there we have developed a partnership that honours and explores the common ground between our different worldviews and gifts. Guided by these relationships, I hope that the participatory research methods and products of this project are successful in their aims to benefit the communities first and foremost.

1.4 Research Design

1.4.1 Methodology

1.4.1.1 Indigenous and Decolonizing Methodologies. In recent decades, Indigenous methodologies have emerged from the margins to claim space in various discourses in the academy, largely due to the work of Indigenous scholars in bringing to the fore their worldviews and knowledges to challenge the dominance of western knowledge in research (Louis, 2007). Most scholars agree that Indigenous methodologies cannot be singularly or simply defined, since Indigenous ways of knowing are diverse and context specific. Louis (2007) describes them as "alternative ways of thinking about research processes" (p. 130) which embrace Indigenous epistemologies and are fluid, dynamic, circular, and cyclical. In Indigenous epistemologies, knowledge is developed through formation of relationships with the living and non-living world, and cannot be owned (Absolon, 2011; Wilson, 2008). Common guiding principles of an Indigenous research approach are often referred to as 'the 4Rs' - respect, reciprocity, rights and relationality (Louis, 2007; Wilson, 2008). A central component is the Indigenous axiology of relational accountability, understanding that being accountable to research relationships is more important than getting 'significant' results (Wilson, 2008). Relationships are often formed through participation in community traditions, recognizing that cultural protocols, behaviours, and values are a central part of methodology (Smith, 1999). In Canada, many policies and legislations have been created to ensure the protection of Indigenous rights in research, including the First Nations Information Governance Centre's Ownership Control Access and Permission (OCAP) Principles followed herein (www.fnigs.ca/ocap).

There is widespread agreement that Indigenous principles must be centered in Indigenous and decolonizing research, however, how this is done and within which knowledge paradigm

Indigenous methodologies are employed continues to be debated amongst scholars. Some scholars argue that an Indigenous research paradigm must be developed independent from western research paradigms (e.g. Wilson, 2008), while others contend that researchers should seek to decolonize methodologies by bringing Indigenous perspectives into western research paradigms and challenging the dominance and universalism of western science (e.g. Smith, 1999; Louis, 2007). This process of decolonizing research does not aim to reject all western theory, research, and knowledge, but rather to change focus by centering Indigenous concerns and worldviews (Louis, 2007). A decolonizing lens centers issues of representation and power, and some argue "must be incorporated within contemporary explorations of Indigenous inquiry because of the persisting colonial influence on Indigenous representation and voice in research" (Kovach, 2009, p. 81). The present research draws on principles of Indigenous and decolonizing research, some of which are shared with western approaches, as discussed in the following sections.

1.4.1.2 Community-based Research (CBR) Methodologies. Qualitative research departs from the universalism and positivism of conventional western research and seeks to center elements of reflexivity, interpretation, and representation (Koster et al., 2012; Kovach, 2009). From a foundation of postmodern, feminist, and critical theory of recent decades, the majority of social researchers now view reality as socially constructed, emphasizing the importance of the subjectivity of the researcher, their relationships with the researched, and the role they play in knowledge construction (Peters, 2017). Stemming from the need to address power imbalances in conventional qualitative research, community-based research (CBR) approaches have emerged and gained popularity in qualitative research with marginalized communities (Koster et al., 2012; Halseth et al., 2016). While there are various terms used to describe community-based and participatory methods, herein the concept used by Halseth et al., (2016) is followed, employing CBR as an umbrella term to include community-based participatory research (CBPR), participatory action research (PAR), action research (AR), and participatory research (PR). These terms are often used interchangeably in the literature – as they are herein – because they share principles of practicing equitable research and goals of combining knowledge and action for social change (Castleden et al., 2010; Halseth et al., 2016). CBR aims to involve those who are most affected by the issue directly throughout the research process, recognizing participants' power in representing themselves, creating knowledge, and defining research aims and outcomes. In order

for participatory research processes not to reinscribe power asymmetries, local knowledges and diverse ways of knowing must be equally valued (Halseth et al., 2016).

CBR is an increasingly popular framework for doing ethical research that involves Indigenous communities (Koster et al., 2012; Castleden et al., 2010; Castleden et al., 2012a), progress in which has been applauded by Indigenous and non-Indigenous researchers alike (Castleden et al., 2012b; Louis, 2012). In this context, important principles of CBR are accepting multiple worldviews, respecting protocols of working with Indigenous peoples, and acknowledging and addressing colonial power imbalances (Fletcher, 2003). Castleden et al. (2008; 2012a) contend that CBR as a philosophy and methodology can further the goal of decolonizing the relationships between researchers and Indigenous communities.

1.4.1.3 Connecting Community-based Research and Indigenous Methodologies. Although neither Indigenous methodologies nor CBR methodologies can be singularly defined or uniformly applied, the two share many principles. Koster et al. (2012) suggest that Louis' (2007) four common concepts in an Indigenous paradigm – relational accountability, respectful representation, reciprocal appropriation, and rights and regulations – are shared in CBR, despite CBR having been developed through a western paradigm. Chilisa (2012) identifies several shared aspects of Indigenous research and CBR, including community participation, leadership, and empowerment in research, with the goal of radical transformation of society. Some have even suggested that CBR provides a "transitional methodological process towards Indigenous paradigms" (Koster et al., 2012, p.199). The intersection between Indigenous and CBR methodologies is an important place for Indigenous scholars in the academy to bring forward their knowledges and perspectives, and for non-indigenous scholars to collaborate to uphold Indigenous and decolonizing principles and create space for Indigenous research frameworks within the academy.

It is in this intersectional space that the present research finds its conceptual framework. An integrated methodological approach is taken, incorporating principles of CBR and Indigenous methodologies, while recognizing fundamental differences in language and the nature of knowledge systems which allow the researcher to work neither fully in one methodology or the other. The approach draws on critical theory and decolonizing theory, taking up the task of challenging colonial influence on representation and voice in research, while maintaining the fundamental purpose of social change set out in critical theory (Blaikie, 2010). The research employs an abductive research strategy to "discover and describe the 'insider' view, not to impose

an 'outsider' view on it" (Blaikie, 2010, p. 89). This strategy reflects sensitivity to the cross-cultural nature of the research, and is in line with the inter-epistemological approach called for by Murphy (2011) and pursued herein. The approach is informed by both Indigenous and constructionism epistemological assumptions, both of which understand knowledge as the outcome of interactions; therefore the researcher is not making true "discoveries" about the world but is rather making observations based on their standpoint and theory (Blaikie, 2010).

In this integrated Indigenous CBR approach, 6 principles are adopted as the foundation for the research: community-guided research; respectful relationships; knowledge exchange; reciprocity; community ownership; and action-oriented outcomes (**Fig. 3**). The degree to which these principles inform the research processes vary between phases of research, due to geographic and temporal aspects of the methods and project timelines. For example, respectful relationships were established with all communities involved, however the depth of those relationships with communities across the Prairies were limited by the amount of time spent together. The variations of this approach taken are discussed further in Chapters 3 and 4.

Critical Theory Research Paradigm
- Rooted in western epistemologies
- Knowledge organized in disciplines
- Knowledge belongs to the individual and can be owned
- Truth is informed by theory

Reciprocity

Respectful relationships

Knowledge exchange

Decolonizing theory & Critical theory

Community ownership of knowledge

Community-led

Action-oriented

Indigenous Research Paradigm
- Knowledge belongs to the cosmos and all of creation, cannot be owned
- Principle of relationality encompasses relations to all beings, including non-humans
- Rooted in Indigenous epistemologies
- Uses Indigenous languages
- Centres beliefs about spirituality

Figure 3. A conceptual framework formed through integration of principles of critical theory and Indigenous research paradigms, with space for inter-epistemological research in the centre. The characteristics in the outer circles describe some aspects of critical theory and Indigenous research paradigms which are distinct, though these are not meant to be exhaustive descriptions. The characteristics in the inner circles are some of the common principles among critical theory research (specifically CBR) and Indigenous research paradigms, which make up the foundation of the proposed research. The extent and ways in which these principles are upheld vary across stages due to limitations in the research design and methods, as discussed in subsequent chapters. (Chilisa 2012; Kovach 2009; Murphy 2011; Smith 1999; Wilson 2008)

1.4.2 Methods

1.4.2.1 Overview and Study Area.

In June 2017, Turtle Lodge convened the *Onjisay Aki International Climate Summit*, which brought Indigenous Knowledge Keepers from Nations across Turtle Island and internationally together with other environmental leaders in a cross-cultural dialogue on climate. Following the Summit, and in part in response to the Elders' call for Indigenous-led defined actions on climate, the field-based research team (Kevin Settee, Marcel Kreutzer, and myself) traveled across territories in the Prairies to document climate initiatives in diverse Nations through interviews and film. The study area, scale, and methods employed in each part of the research are described below. **Study Area.** As of the 2011 census, there were approximately 575,000 Indigenous peoples living in the Prairie provinces of Canada – Alberta, Saskatchewan, and Manitoba – out of a total population of 5.8 million people. Indigenous peoples have inhabited this region for over ten thousand years, encompassing parts of what have been classified as the Plains, Eastern Woodlands, and Subarctic Indigenous cultural areas (Parrott, 2017). The region is home to many different Indigenous groups, including the Blackfoot, Cree, Ojibwe (Anishinaabe), Assiniboine, Nakota, Dakota, Dené, and the Métis Nation (Parrott, 2017), though these geographies do not necessary reflect their ancestral territories nor the limits of their current distributions, due to recurring forced displacement under colonization.

Since early settlement, colonial policies have been created and enforced across the Canadian Prairies to suppress Indigenous traditional practices and religious ceremonies, resulting in cultural transformation and assimilation (Pettipas, 1994). Imperial interests in economic gain and political control supported the reduction of Indigenous populations and seizure of lands and resources to fuel state power (Pettipas, 1994). With the building of the Canadian Pacific Railway in the 1880s, there was widespread agricultural settlement and land conversion in the Prairies. At the same time, policies such as those contained in the Indian Act of 1876 were imposed to 'protect' and 'civilize' Indigenous peoples, assimilating them into Euro-American society under the notion that it was for their own benefit (Pettipas, 1994; Newcomb, 2008). Indigenous communities across the region and country were forcibly displaced from their lands and relocated to reserves. Many Nations entered into negotiations with the Crown and signed onto the numbered Treaties, which continue to serve as the foundation for relationships between Nations and the Government of Canada and remain "an integral part of the fabric of our Constitution" (Craft 2014, p. 21).

The participants involved in this research live in communities in the territories of Treaties 1, 4, 6, 7, and 8 across the Prairies (**Fig. 4**). The Turtle Lodge is located in the Anishinaabe community of Sagkeeng First Nation, signatory to Treaty 1, or the Stone Fort Treaty as many Anishinaabe refer to it (Craft, 2014). Sagkeeng is located about 120 kilometers north of the City of Winnipeg, where the Winnipeg River flows into Lake Winnipeg. The Onjisay Aki Climate Summit was held in Sagkeeng, with participants from 14 Nations across the Prairies and internationally (see Appendix A for details)[1]. The other interviews were done in collaboration with members of Nations across the territories of Treaties 4, 6, 7, and 8. Participants are Blackfoot from Kainai First Nation; Cree from Montana First Nation and Lubicon Lake First Nation; Saulteaux and Cree from Cowessess First Nation; Woodland Cree from Amadu Lake; Dënesųłiné from Athabasca Chipewyan First Nation; and Métis from the Northern Village of Green Lake. These participants and communities were identified through existing relationships and snowball sampling.
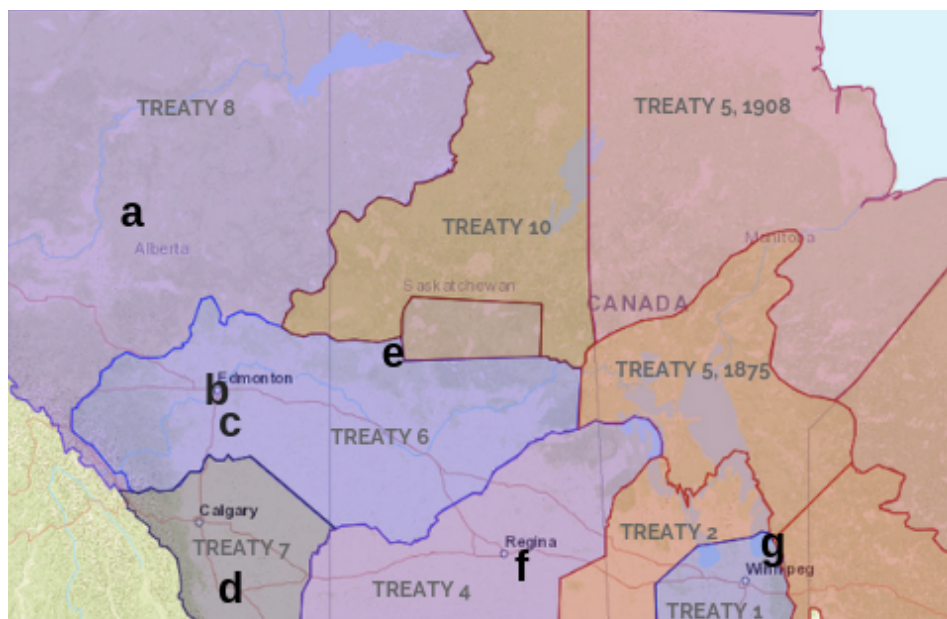
Figure 4. Map of the Treaty territories in the Canadian prairies with the locations of events and interviews indicated by letters: (a) Lubicon Lake First Nation (b) Edmonton (c) Montana First Nation (d) Lethbridge (e) Northern Village of Green Lake (f) Cowessess First Nation Land (g) Sagkeeng First Nation

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[1] The Onjisay Aki Summit was an initiative of the Turtle Lodge, convened in the Prairies, with many Knowledge Keepers from this region. However, we note that not all participants were from the Prairies. A full list of Summit participants and their Nations can be found in Appendix A.

Scale. Considering the study area map, it is important to discuss the scale of the research pursued and initiatives documented, as well as the intersections and implications of scale in the context of Indigenous and community-based research. The project as described above has two overlapping phases, which take place at different scales – an in-depth, community-led collaboration with Turtle Lodge, and a broader, exploratory study with communities across the Prairies. On the one hand, in-depth community-based studies over an extended period of time allow for relationship building, community leadership, and flexibility. In the case of the Turtle Lodge this allowed Indigenous knowledge and traditions, as well as researcher participation in community activities, to be a central part of the process. On the other hand, at a regional scale a larger sample of perspectives across communities can be examined, providing an opportunity to connect local stories, understandings, and actions to allow broader patterns to emerge across space and inform national dialogues. Such research can enable researchers and communities to transcend the common essentializing framing of Indigenous peoples and their knowledges as exclusively localized in the context of climate change. At the same time, conducting CBR at a regional scale can present limitations for participation, duration, relationship-building, and epistemological frameworks of analysis. A more in-depth discussion of scale in this research is undertaken in Chapters 4 and 5.

1.4.2.2 Multiple Methods Approach

This research employs a multiple methods approach (Kovach, 2009) which strives to be inter-epistemological research (Murphy, 2011; **Fig 5**). It draws on a variety of Indigenous and western methods in data collection, analysis, and knowledge mobilization. Methods are chosen which give power back to the community (Kovach, 2009). While Halseth et al. (2016) document the increased use of multiple methods in CBR projects to facilitate broader and more inclusive engagement of participants, use of multiple methods in cross-cultural CBR may further diversify engagement and allow sharing of different types of knowledge. Talking circles, qualitative semi-structured interviews, participant observation, and participatory video are employed herein. This multiple methods approach aims to triangulate the qualitative data, giving more depth to the cross section of Indigenous stories shared and reduce researcher influence on the accounts (Peter, 2017). The methods of data collection and analysis described below were employed by the researcher in collaboration with the research team and community partners. The process described for this master's project is part of the larger ongoing projects of the Turtle Lodge's Onjisay Aki Initiative and the Prairie Climate Centre's Climate Atlas.

Figure 5. *A multiple methods approach was undertaken, including talking circles (top left), semi-structured interviews (top right), participant observation (bottom left), and participatory video (bottom right).*

Talking Circles. While talking circles have been used by Indigenous peoples since time immemorial, only recently have they been accepted as a research method within the academy (Wilson, 2008). The talking circle is a technique based on respect, where each person talks in turn uninterrupted (Chilisa, 2012; Wilson, 2008). The talking circle may be considered the postcolonial version of a focus group, a common western research method where the researcher leads or mediates a group discussion around the research questions (Chilisa, 2012; Peter, 2017). The roundtable discussions at the Onjisay Aki Climate Summit serve as a variation on a talking circle; twenty participants sat around the table and Knowledge Keeper Dave Courchene facilitated discussion over three days about the topic of climate change broadly. The research team helped develop ideas for discussion in advance of the Summit, documented the event in writing and video, and helped synthesize the conversations following the Summit through textual content analysis and video production. The results of this analysis address research questions (1) and (2) and are discussed in Chapter 3.

Qualitative semi-structured interviews. The interview is one of the most common methods in qualitative research, with a continuum of types between structured, semi-structured, or unstructured (Dunn, 2005). Semi-structured interviews begin with "a structure of questions and

themes, but [have] the capacity to go off on tangents or to ask additional questions" (Peters, 2017). In this way, the researcher can adjust questions depending on the flow of conversation, underscoring the importance of careful listening, respect, and understanding. In this research, a series of semi-structured interviews were conducted with participants from Indigenous communities across the Prairies. These interviews were conducted in conjunction with the Prairie Climate Center and the Climate Atlas (climateatlas.ca), a larger project aiming to capture diverse voices and stories on climate change across the country. Ten interviews were conducted, which were not aimed to be an exhaustive or representative sample of Indigenous communities, but rather an exploratory study to illuminate some of experiences and initiatives. Analysis and results address research questions (1) and (2) and are shared in Chapter 4.

Participatory Video. Visual methods are increasingly popular, both within and outside of the academy, for documenting culture and sharing knowledge. Video "exceeds the visual realm," blending what we see and hear to evoke a sense of feeling for the space, people, and relationships featured (Bates, 2015, p. 1). In research with Indigenous communities, Halseth et al. (2016) suggests that visual methods are culturally-appropriate due to their similarities with oral histories and storytelling, and may be an effective tool for bridging cross-cultural understandings. Further, combining participatory and visual methods enhances the power of both. In academia, participatory video (PV) as a method has grown popular in part due to the increased desire for more emancipatory and decolonizing methodologies (Milne, Mitchell, & De Lange, 2012). In the present research, an adaptation of the *community-collaborative approach* to PV (Elder, 1995) was employed in collaboration with the Turtle Lodge and communities across the Prairies. With the Turtle Lodge's Onjisay Aki initiative, PV was used to document the Summit, and several short videos were made in response to the community's desire to tell the story through digital media to reach diverse audiences. PV was also used in collaboration with communities across the Prairies to create short videos highlighting some of the ways in which participants are experiencing and responding to climate change. In both cases the video footage was shot predominantly by Dr. Mauro's film team, and editing of the videos was done by myself, with support from the film team. Through the editing process, the videos went through an iterative process of community input and feedback. Videos are included and discussed in Chapter 4, addressing research question (3).

Participant Observation. Participant observation is a process of learning by watching and doing. It is a common method among qualitative researchers (Blaikie, 2010; Peters, 2017), and also

parallels Indigenous traditional ways of learning (Wilson, 2008). The researcher immerses themselves in community activities, observing and participating, and thereby building relationships (Peter, 2017; Wilson, 2008). Peter (2017) outlines some key considerations for participatory observation: access and trust, positionality, and ethics. In community-based action research, the researcher is necessarily participating in activities with and for the community, and thus participant observation is a critical part of learning throughout the research journey. Participant observation is embedded within the relational nature and central principles of the research framework adopted herein. From the beginning of the collaboration with the Turtle Lodge community in December 2016, regular participation in ceremonies and gatherings at the Lodge have been a great source of learning and relationship-building. Spending time in the Lodge allows participation and learning on a variety of topics – such as traditional teachings, language, spirituality, and other aspects of culture – in order to help me as a non-Indigenous researcher move towards a deeper understanding of the holistic nature of Anishinaabe perspectives and culture. Written notes and reflections were recorded from each visit to the Lodge, to enable reflection on the process and perspective over time to inform the process of analysis. Though there were fewer opportunities for participant observation in the second phase of research due to the nature of traveling across the Prairies within a limited time frame, time was spent with the participants, sharing food, conversation, photos, and stories, which helped inform analysis and editing.

Ethics approval for all interviews and video research was provided by the University of Winnipeg Human Research Ethics Board under the larger Prairie Climate Center project led by Dr. Mauro. An amendment was filed and approved to include myself as a researcher and the First Nations OCAP principles underlying this specific project.

1.5 Structure of the Thesis

This thesis is structured in a group manuscript style, with three distinct body chapters. All three of the chapters explore Indigenous perspectives on the environment and climate change in the Prairies, to varying degrees. Chapter 2 begins with a discussion of the Turtle Lodge, and the ways in which their governance, stewardship and cultural activities may be considered part of their process of sustainable self-determination. Chapter 3 builds upon the foundation of the previous chapter by taking a deeper look at the Turtle Lodge's Onjisay Aki Initiative, which brought

together Indigenous Knowledge Keepers from across Canada and beyond to discuss Indigenous-led solutions to climate change. The outcomes of the Onjisay Aki initiative summarized in Chapter 3 in part provided the motivation for the research undertaken in Chapter 4, which surveys the ways in which ten Indigenous participants from communities across the Prairies are experiencing and responding to climate change, as well as how video can be used to help mobilize these stories across landscapes. This chapter combines both written and video results. Finally, Chapter 5 concludes with a summary of the findings and contributions to theory, as well as a reflection on the process of doing community-based research across scales, from local to regional.

1.6 Contributions to Knowledge

Overall, this research responds to guidance from communities, gaps in the literature, and current political contexts, by collecting and communicating some of the perspectives, knowledges, and initiatives of Indigenous peoples in the Prairies around climate change. The research contributes to several bodies of literature regarding: Indigenous perspectives on climate change in Canada; Indigenous and community-based research methodologies; and participatory video methods. In this way, the research addresses significant gaps in documented knowledge in this field and is one of the first studies to document the Indigenous-led, solutions-oriented conversation on climate change in the Prairie region, as discussed in Chapters 3 and 4. This is significant as the Prairies are projected to be one of the most severely impacted regions under climate change, and Indigenous communities therein disproportionately (Davidson, 2010).

Further, this research pushes methodological boundaries by employing an integrated, inter-epistemological framework in community-based research. This draws insights on the shared aspects of Indigenous and CBR methodologies from the literature and experience herein, which may offer guidance to future researchers working between Indigenous and western worldviews and communities. In particular, the research offers new insights into the feasibility, strengths, and limitations of doing Indigenous CBR across scales, reflecting on the relationship between community leadership and geographic space. Different approaches taken are described in Chapters 3 and 4, and a discussion of lessons learned follows in Chapter 5.

The research also makes a unique contribution through the use of participatory video methods in mobilizing IK beyond the academy, while maintaining community control over

representation and ownership, as discussed in Chapter 4. In particular, a novel adaptation of PV is adopted which seeks to balance participation with high quality productions in order to reach a wider audience. As PV methods are relatively new in the field of Indigenous climate change research, this study offers critical insights for new ways of documenting and mobilizing IK on climate change, some of which may be applicable in other fields as well.

The collaborations forged and the multi-media outcomes produced in this research aim to benefit the partner communities first and foremost, but also the academy and Canadian public through cross-cultural dialogue and knowledge exchange. In the face of complex and intersecting challenges presented by climate change, collaborations such as these across disciplines, cultures, and knowledge systems are timely and imperative.

CHAPTER 2: THE TURTLE LODGE: SUSTAINABLE SELF-DETERMINATION IN PRACTICE[2]

Figure 6. *Community activities at Turtle Lodge*

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[2] This chapter has been accepted for publication as: Cameron, L., Courchene, D., Ijaz, S., & Mauro, I. (in press). The Turtle Lodge: Sustainable Self-determination in Practice. *AlterNative: An International Journal of Indigenous Peoples*.

THE TURTLE LODGE: SUSTAINABLE SELF-DETERMINATION IN PRACTICE

Abstract

The Turtle Lodge International Centre for Indigenous Education and Wellness in Sagkeeng First Nation, Manitoba is leading the way in exemplifying and cultivating *sustainable self-determination*. This is a holistic concept and process that recognizes the central role that land and culture play in self-determination, and the responsibility to pass these on to future generations. This chapter links theory and practice in the emerging scholarship on sustainable self-determination and examines how Turtle Lodge embodies sustainable self-determination through: traditional governance and laws; respectful and reciprocal relationships; cultivation of cultural revitalization and community well-being; and efforts to inspire earth guardianship. Turtle Lodge's experience underscores the importance of understanding sustainable self-determination as a flexible, community-based process. This case study fits within recent calls in the literature for a shift from a rights-based to responsibility-based self-determination discourse and demonstrates some of the challenges and lessons learned that might support other communities pursuing similar actions.

2.1 Introduction

It has been prophesized by our people that there would one day come a time when we would take our rightful place of leadership on our original homelands. (Courchene, personal communications, May 25, 2017)

Indigenous peoples' freedoms and self-determination are directly opposed by the colonial and capitalist systems of settler states (Tully, 2000). In response, Indigenous movements for decolonization, revitalization, and resurgence are growing across Indigenous Nations and geopolitical borders globally, bringing Indigenous issues to the fore in settler societies (Manuel, Derrickson, & Klein, 2015). In the face of policies of imposition and dispossession, many Indigenous peoples are joining together to resist, to enact their rights to self-government and assert their sovereignty. Within these movements, there is diversity in experiences of colonization and the pathways advocated and practiced in pursuit of Indigenous freedoms vis-à-vis the state (Borrows, 2016).

Indigenous governments, communities, and organizations across Canada have been advocating to reclaim their lands and rights and reverse the dependency created by colonial systems for decades and continuing today (for example Tooley, 2006). We begin with an introduction to settler colonialism and Indigenous movements for self-determination in Canada, with particular attention to different understandings of, and approaches to, self-determination. We then examine the case study of Turtle Lodge International Centre for Indigenous Education and Wellness in Sagkeeng First Nation, Manitoba, founded by Anishinaabe Elder Dave Courchene (www.turtlelodge.org). This Indigenous led and community-based organization exemplifies and cultivates sustainable self-determination through their governance, relationships, and activities, and in so doing inspires and supports similar processes in First Nations across the country. At the same time, the practices of the Turtle Lodge bring to light some of the nuances and challenges of a process of sustainable self-determination that theory alone is unable to elucidate, and in turn contributes new insights to the self-determination literature.

2.1.1 Settler colonialism and Indigenous movements for self-determination in Canada

One hundred and fifty years ago the Canadian nation-state was founded on Indigenous territories with little regard for the rights and title of the First Peoples. With the passing of the 1876 Indian Act, "the social, economic, and political position of Indian nations was dramatically

transformed into one of 'dependence'" (Pettipas, 1994, p. 37) that created cultural disruptions which have had intergenerational impacts (Alfred, 2009a). Colonial forces sought to separate Indigenous peoples from each other and disconnect them from their relationships to culture and the natural world (Alfred, 2005; Corntassel & Bryce, 2012). The severing of this fundamental relationship to the earth has created crises for Indigenous communities under the settler colonial Canadian state that are spiritual, as much as they are political, social, and economic (Corntassel, 2012). In recent decades, the structure of colonialism within the state has changed – from state domination over Indigenous peoples to recognition of them – but arguably maintains the same aim of controlling and assimilating Indigenous peoples while dispossessing them of their lands and self-determining authority (Alfred, 2009a; Alfred & Corntassel, 2005; Coulthard, 2014).

In direct response to past and present forms of colonialism, Indigenous movements in Canada have emerged with diverse approaches to achieving self-determination, many of which have sought freedom through political recognition of Indigenous rights (Coulthard, 2008; Pettipas, 1994). In their book *Unsettling Canada*, the late Arthur Manuel, Chief Ronald Derrickson, and Naomi Klein (2015) review Indigenous peoples' struggles "for recognition of [their] land title and sovereign rights," arguing that they have made important advances in the last decade. Indeed, many Indigenous groups and Nations have fought for decades to have their rights recognized and upheld vis-à-vis colonial Canadian governments to improve the lives of Indigenous peoples across the country. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) – a landmark victory of the international Indigenous rights movement – was only adopted by the Canadian government in 2010 after significant political pressure from First Nations and Indigenous organizations (Corntassel & Bryce, 2012). While UNDRIP may be recognized as the most comprehensive Indigenous rights instrument available (Corntasssel & Bryce, 2012), there are differing definitions and strategies within the rights-based discourse. Kulchyski (2013) argues that Indigenous rights – based on peoples' relationships to land, practiced through culture – are distinct from and more powerful than universal human rights as tools in the struggles of Indigenous peoples.

At the same time, many authors highlight the limitations of pursuing freedom within state systems and rights-based strategies. Anishinaabe legal scholar Borrows (2006) criticizes Canada's constitutional structures for continuing to marginalize and disempower Indigenous peoples, and suggests that Indigenous freedoms must be pursued through multiple, diverse pathways that allow

for both engaging with and working outside of state systems. Simpson (2011) also contends that work needs to be done both within Indigenous Nations and within Indigenous-state relations to decolonize state systems. Some authors criticize all forms of state recognition, contending that it only serves to reinforce colonial power dynamics by granting authority of recognition to the colonizer (Daigle, 2016; Coulthard, 2014). Dené political theorist Coulthard (2008, 2014) argues that self-determination cannot be achieved through institutionalization of liberal systems of reciprocal recognition because state governments will recognize Indigenous rights and identities only to the extent that they do not disrupt colonial power relationships. Cherokee scholar Corntassel (2008) also suggests that rights-based approaches give the state power to define and deny Indigenous identities and de-emphasize relationships to family, the natural world, and future generations. Considering this, Corntassel (2008) brings forward the concept of *sustainable self-determination*, a more holistic model which considers the environment, community well-being, natural resources, sustainability, and cultural transmission for future generations as part of the process of self-determination. He posits that self-determination that is sustainable is more than a political and legal struggle; it is fundamentally about maintenance and renewal of individual, family, and community spiritual and relational responsibilities (Corntassel, 2008). With this context, we explore the similarities between these principles of sustainable self-determination and Anishinaabe ways of knowing.

2.1.2 Sustainable self-determination and Anishinaabe ways of knowing

> *Our leadership is not a political leadership, rather a spiritual leadership guided by values. We offer a glimpse into our ways and our traditions, into our values that helped sustain our ancestors for thousands and thousands of years on these lands, living in harmony and peace with each other and the natural world.* (Courchene, 2017a, para. 65)

Corntassel describes sustainable self-determination as a process of "Indigenous livelihoods, food security, community governance, and relationships to the natural world and ceremonial life that enables the transmission of these cultural practices to future generations" (Corntassel, 2008, p. 124). He contends that sustainability for Indigenous peoples is fundamentally linked to the transmission of knowledge and culture to future generations and must be included in models of self-determination (Corntassel, 2008). Sustainable self-determination rejects compartmentalization into legal and political rights-based definitions and takes a broader view, encompassing social, economic, cultural, and political aspects and extending to include future generations (Corntassel, 2008). It has been suggested that this holistic model better reflects

Indigenous worldviews, which centre on interconnectedness and balance between all aspects of creation (Corntassel, 2008; Little Bear, 2000). As colonial forces seek to disconnect Indigenous peoples from their homelands, reconnecting to the land is a way of rejecting western ideologies and practicing sustainable self-determination (Corntassel & Bryce, 2011). Since the same colonial-capitalist agenda threatens Indigenous peoples' well-being and relationships with their homelands also threatens biodiversity and environmental balance (Alfred, 2009a), adopting the concept of sustainable self-determination could have wider implications for earth stewardship among Indigenous and non-Indigenous people alike.

The model of sustainable self-determination aligns well with Anishinaabe traditional law, which has strong conservation and intergenerational ethics (Borrows, 2006; Johnston, 2004). In Anishinaabe traditions, the earth is alive, imbued with spirit, and cannot be owned but is rather borrowed from future generations (Borrows, 2006). From this understanding, Anishinaabeg have duties and responsibilities to take care of the earth to ensure that its gifts are preserved for their children, grandchildren, and seven generations to come (Kimmerer, 2014). This generational way of thinking is illustrated in the Anishinaabemowin language; for instance, aanikoobijigan is the word used to describe both ancestors and descendants. Anishinaabe legal traditions also include bimiikoomaagewin, stewardship concepts which guide their peoples in their use of and relations to land, plants, and animals (Borrows, 2006). These ethics of responsibility and conservation – grounded in spirit and an understanding of the land and water – are central in Anishinaabe traditions and livelihoods. Indeed, Anishinaabe lifeways and teachings share many of Corntassel's principles of sustainable self-determination.

2.2 Sustainable self-determination in theory and practice at Turtle Lodge

> *Our leadership will always, always rely on our connection to the Spirit… We have to get out of the mindset that we need approval and validation from the colonizer to legitimize who we are as a people, and to legitimize our true leadership in our homeland.* (Courchene, 2016a, para. 25-26)

The Turtle Lodge International Centre for Indigenous Education and Wellness is located in Sagkeeng First Nation, Manitoba on Treaty 1 territory (**Fig. 7**). The Lodge is a gathering place for Indigenous and non-Indigenous peoples from all Nations, founded upon spiritual, land-based teachings and the pursuit of mino-bimaadiziwin (the good way of life) (Turtle Lodge, n.d.). Following the ancestral ways of his people, Anishinaabe Elder Dave Courchene (Nii Gaani Aki

Inini – Leading Earth Man) founded Turtle Lodge in fulfillment of a vision he received of a place that would bring healing to the people and to the land (Turtle Lodge, n.d.). Elder Courchene is a well-respected Knowledge Keeper of the Anishinaabe Nation and has dedicated his life to sharing his knowledge and spreading a message of peace, hope, stewardship and spirit across Canada and the Globe.

Figure 7. Tipis at Turtle Lodge International Centre for Indigenous Education and Wellness in Sagkeeng First Nation (left). Elder Dave Courchene (Nii Gaani Aki Inini – Leading Earth Man), Anishinaabe Knowledge Keeper and founder of Turtle Lodge (right).

Since it was built in 2002, the Turtle Lodge has served as a place for sharing ancient Anishinaabe knowledge and practices, cross-cultural knowledge exchange, and collaborative knowledge creation, guided by spirit (Turtle Lodge, 2017a). The Lodge has hosted events, ceremonies, conferences, and gatherings of people from around the world to recognize and honour the rich traditional knowledge of the First Peoples of these lands, and in so doing developed a network of diverse partners. Through their efforts, the Lodge exemplifies many of the principles of sustainable self-determination put forward by Corntassel (2008) - working towards independence of their community and others with consideration to the environment, community well-being, sustainability, and cultural transmission for future generations. These principles are reflected in their governance, relationships, and cultural and stewardship activities (**Fig. 8**).
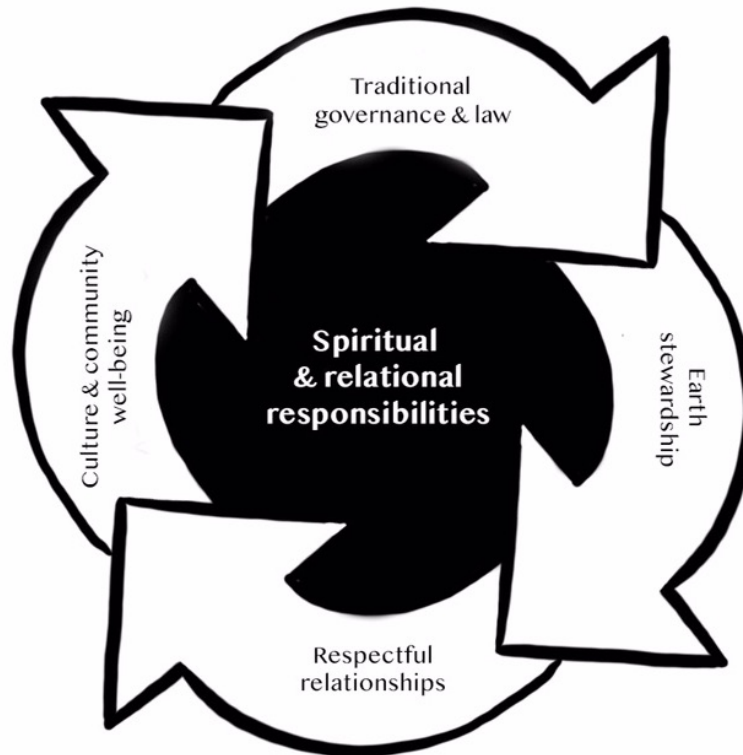
Figure 8. *The Turtle Lodge's model of sustainable self-determination*

2.2.1 Traditional governance and law

> *In our belief system, we have our values that we call the seven teachings that are represented by seven animals... These laws can't be legislated, simply because you can't legislate morality. These teachings must be lived from within us, from the heart, the spirit. It is these teachings, these laws that align and connect us with the natural laws of Mother Earth.* (Courchene, 2017a, para. 39)

The Turtle Lodge is governed following protocols of traditional Anishinaabe governance. Gatherings are led by Knowledge Keepers and Elders, and always begin with ceremony (Turtle Lodge, 2017a). In Anishinaabe tradition, pipe and water ceremonies are conducted to establish a connection with Gizhe-manidoo (the Great Spirit) and offer prayers of thanksgiving for the land, plants, animals, humans, and all aspects of creation (Borrows, 2006). Following ceremony, discussions in the Lodge happen in a circle where people are invited to share their points of view and experiences uninterrupted, beginning with the Elders who often speak in their native languages. Talking circles have traditionally been used by Anishinaabe and other Indigenous peoples to facilitate respectful dialogue; the circle itself symbolizes the holism of the earth, continuous compassion and love, and equality of all members (Chilisa, 2012; Wilson, 2008). While

partners and guests are often welcomed into the circle, spiritual leadership provided by the Knowledge Keepers and inspired by the ceremonies, guides the conversations. This model of traditional governance exemplified at Turtle Lodge has inspired Nations across Manitoba, and five communities have recently committed to building similar traditional Lodges, with the blessing, guidance, and support of the Turtle Lodge. The Lodge has been recognized by the Assembly of First Nations, the Assembly of Manitoba Chiefs, and Knowledge Keepers from across the country as one of the most significant centres of traditional knowledge and gathering places for Indigenous peoples in Canada (P. Bellegarde, personal communications, August 5, 2015; D. White Bird, personal communication, January 3, 2013).

Governance rooted in Indigenous traditions and philosophies is a central component of decolonization and self-determination. Mohawk scholar Alfred (2009b) contends that "[t]raditional government is the antidote to the colonial disease and its corruptions and abuses of power, and to the disempowerment of our people and communities" (p. 5). Elder Dave Courchene's father responded to the 1969 White Paper by coauthoring the seminal position paper *Wahbung, Our Tomorrows*, which centred traditional governance in Indigenous peoples' pathway to independence and well-being in Manitoba. Elder Courchene believes it is the responsibility of today's leadership to bring the spirit of *Wahbung* to life through traditional governance, which he demonstrates at Turtle Lodge (Courchene, 2016b). Through his leadership, the Lodge is guided by Anishinaabe traditional laws. For instance, in 2015 Elders from the Dakota, Nehetho, and Anishinaabe Nations gathered at the Lodge and wrote *Ogichi Tibakonigaywin* (The Great Binding Law) which reflects their understanding of ancestral and natural law (Oshoshko Bineshiikwe et al., 2016). The Law contains the Original Instructions given to the First Peoples by Creator on how to be and sustain a relationship with Mother Earth, and is an articulation of Indigenous traditional knowledge, governance, and nationhood.

Maintaining these traditional ways of governing – which were for many decades outlawed in the Canadian prairies – is part of a holistic, sustainable practice of self-determination that asserts self-governance and transmits these practices to younger generations. Importantly, these governance practices are not fixed, but rather evolve and are adapted in various contexts. For example, Indigenous peoples from other Nations and non-Indigenous people are often invited to bring their own ceremonies and protocols into the Lodge which may be integrated or practiced alongside the Anishinaabe traditions, within the context of the local Nation's leadership. While

ancestral knowledge and practices are foundational within traditional governance, the Lodge remains "contemporary, flexible, and fluid" (Borrows, 2016, p. 17) in their pursuit of self-determination. The Lodge maintains autonomy over their governance, which allows them to uphold traditional ways across the diversity of projects and partnerships they engage in.

2.2.2 Respectful and reciprocal relationships

We each bring knowledge of values from the four corners of the earth, based on our cultures and spiritual traditions, which show us how to be kind and how to relate to each other and the Earth. Everyone has something to contribute in knowledge and gifts. We have to find a way to share that. (Courchene, 2017b, para. 5)

Over the past 15 years of their process of self-determination, Turtle Lodge has continued to expand their network and partnerships with Knowledge Keepers, political leaders, and community members from First Nation, Métis, and Inuit communities across the country. They frequently host gatherings to convene people from diverse Indigenous Nations to discuss issues of common concern, recognizing the importance of inter-Nation collaboration and solidarity. For example, in February 2017 the Lodge held a special gathering to unveil a sacred pipe which was commissioned by Elders from Nations of the four directions across Canada, to symbolize all of the pipes that were taken away from First Peoples and illustrate the resurgence of their communities (Mosher, 2017; Turtle Lodge, 2017b). An additional example is the Totem Pole Journey of 2016, in which a special totem pole carved by the Lummi Nation of the Coast Salish peoples traveled through Nations in the US and Canada before being gifted to Turtle Lodge, where it now stands as a symbol of alliance across Indigenous peoples and Mother Earth (Anderson-Pyrz, 2016). Relationships that the Lodge has forged and facilitated through their gatherings contribute to self-determination, as they unite Indigenous Nations across nation-state borders, bridge diverse knowledge systems, and therein challenge colonial boundaries and tactics of division.

In addition to their Indigenous relationships, Turtle Lodge has partnered with provincial and federal governments, and has a long-standing relationship with departments such as the federal Indigenous and Northern Affairs Canada and provincial Department of Sustainable Development. For instance, in July 2017 Canadian Minister of Environment and Climate Change Catherine McKenna and former Manitoba Minister of Sustainable Development Cathy Cox visited the Lodge to consult the Elders on climate change (Turtle Lodge, 2017c). Through these government partnerships the Lodge has gained political and sometimes financial support, yet they uphold their

independence as an utmost priority, and have declined certain opportunities in order to maintain their sovereignty. These dynamics with government illustrate the Lodge's self-determination, reversing the dependency that colonial systems aim to uphold, and thus creating true nation-to-nation partnerships defined according to their own principles and traditions.

The Lodge also has a network of institutional collaborators, from museums to various professional unions and bodies. Over the last several years, the Lodge has facilitated conversations between Knowledge Keepers and representatives from the Canadian Museum of Human Rights (CMHR) to develop the Mikinak-Keya Spirit Tour, a special Indigenous-led tour of the museum presenting traditional knowledge, teachings, and ceremonies (CMHR, n.d.). In the summer of 2017, they partnered with Canada Games to bring Indigenous perspectives to the Games in Winnipeg, lighting the sacred fire at Manitou Api and leading the opening ceremonies (Turtle Lodge, 2017d). Over the years, the Lodge has hosted events with the Federal Judges of Canada, the National Energy Board, the Canadian Association of Police Chiefs, and other professional bodies seeking better understandings of Indigenous peoples of Treaty 1 territory and their diverse knowledges. Turtle Lodge not only shares culture and traditions through these relationships, furthering the goal of cultivating and transmitting their knowledge, but they also provide an example of what a self-determining community looks like in practice to those who visit.

Finally, the Turtle Lodge works in partnership with a variety of students, teachers, school administrators, and university academics. The present thesis is the result of a trusting relationship and ongoing collaboration the Lodge has forged with scholars from the University of Winnipeg. In academic partnerships such as this, the Lodge and their partners operate under First Nations principles of Ownership, Control, Access, and Possession (OCAP; http://fnigc.ca/ocap.html), asserting the community's control over the information documented and produced. In their relationships with educational institutions, Turtle Lodge affirms their traditional knowledge as equal to western knowledge, and refuses colonial notions of the dominance of universal, positivist knowledge. At the same time, they accept and appreciate other ways of knowing and advocate the parallel use of diverse knowledges in addressing common concerns (Turtle Lodge, 2017a).

2.2.3 Cultivating cultural revitalization and community well-being

> *The wisdom keepers of our Nations all agree that in order to achieve peace, we must return to the beginning, which for us means returning to the land where all life has been generated from. But in order for us to be able to achieve that, we have to understand*

first of all our own identity in who we are, and the contributions that each of us can make within that nationhood of humanity. Paramount in these defined actions is the education of youth. (Courchene, 2017c, para. 13-14)

In addition to their traditional governance and relationships, Turtle Lodge practices self-determination through their various programs, events, and initiatives. Through these activities, the community practices everyday acts of resurgence – speaking the language, practicing ceremony to connect to the land, building healthy relationships among Indigenous peoples, sharing teachings, and educating others (Corntassel, 2008). These acts disrupt colonial boundaries, restore Indigenous nationhood, and assert Indigenous cultural rights (Corntassel, 2008; Holder, 2008), with far-reaching implications and impacts such as: language revitalization, ancient ceremonial practices, youth empowerment, community economic development, and community healing.

Oral histories and languages are central in First Nations communication and transmission of Indigenous knowledge, traditions, laws, spirituality, ceremony, and relationships (Miner, 2013; Pratt et al., 2014). Because of its centrality to Indigenous societies, language has been a central target in the project of colonization. Thus, in a movement of decolonization and Indigenous resurgence, language revitalization and oral tradition are critical, and have great implications for other areas of Indigenous society (Pratt et al., 2014). Leanne Simpson (2008a) describes Oshkimaadiziig - the people responsible for the revitalization of language and culture in the time of the Seventh Fire. Elder Courchene and the Knowledge Keepers who gather at Turtle Lodge are Oshkimaadiziig as they continue to speak their languages and pass them to the next generation. In 2017, the Lodge held their second annual Nehiyawewin (Cree) and Anishinaabemowin (Ojibwe) camps for youth and community members from across the province, to learn the languages "in a traditional way, in ceremony and on the land" (Turtle Lodge, 2017e). Through Turtle Lodge's efforts to revitalize and pass forward the intergenerational Anishinaabe knowledge embedded with their Indigenous languages, they are demonstrating their deep commitment to self-determination that is truly sustainable, and helps to bridge millennia of wisdom through cultural transmission that ultimately benefits community and environmental well-being.

Turtle Lodge also contributes to community healing processes, and was instrumental in the creation of the Giigewigamig Traditional Healing Centre at the Pine Falls Health Complex, which they have been working on for over ten years in collaboration with the community in Sagkeeng and neighbouring First Nations of Black River, Hollow Water and Bloodvein. In July 2017, the

Giigewigamig Centre and Turtle Lodge hosted the National Inquiry on Missing and Murdered Indigenous Women and Girls for what was "an intense day of grieving, healing and sharing" (Turtle Lodge, 2017f). In creating spaces and gatherings such as this for community healing, the Lodge is affirming the community's ability to find peace through their spirituality and traditions, independent of the state.

Turtle Lodge's commitment to healing and cultural revitalization is also carried out through reviving ancient Anishinaabe ceremonies. In June 2017, they held a ceremony to build a Thunderbird nest to re-establish an alliance between the binesi (thunderbirds) and humanity for protection of the earth, the first time this ancient ceremony has been held in the area in over a hundred years (Turtle Lodge, 2017a). Additionally, the Lodge often holds adoption ceremonies to welcome people from other Nations and cultures to Turtle Island, with the understanding that residing on these lands comes with responsibilities to honour and care for the earth. This formal welcoming of newcomers to the community is an example of what Borrows calls "emancipatory traditions," facilitating Indigenous freedoms while not being restricted by state systems of citizenship (Borrows, 2016, p. 41). Through these ceremonies, the Lodge is maintaining ancient traditions, and making them accessible to the next generation.

In many of their activities, the Lodge practices traditional models of Anishinaabe kinship by centring youth and facilitating intergenerational knowledge exchange. One example of this is their Rites of Passage, a traditional coming of age ceremony that is one of their most important events held annually in the spring (Turtle Lodge, 2017a). Young women receive the Grandmothers' Teachings and young men participate in a Vision Quest, affirming their identities and responsibilities as they enter adulthood. With participants from across the country, it is clear that the Lodge's practices of self-determination through culturally-grounded youth programs are having significant impacts extending beyond their immediate community. Through these ceremonies the Lodge is taking on "one of [the] most critical and immediate tasks in building an Indigenous resurgence, [which] is ensuring that the knowledge of [the] ancestors is taught to the coming generations" (Simpson, 2008b, p.74).

Through these diverse activities, Turtle Lodge creates opportunities for sustainable community development from an Indigenous perspective, seeing the earth as the source of life rather than a resource to be exploited. This is an example of sustainable development which Heinämäki (2009) argues goes hand in hand with sustainable self-determination. The Lodge is yet

another exciting example of how it is possible for Indigenous communities to participate in business development and redefine economic narratives in Canada, while supporting shared responsibilities, traditions, and ultimately self-determination. In this way, they have paved a middle road, creating space for what Bhabha terms 'hybridity' – displacing and challenging sites of discrimination and domination while not staying 'fixed' in their identity or 'frozen' in time (Bhabha, 1994; Borrows, 2016).

2.2.4 Inspiring earth guardianship

We are challenged more than ever to find initiatives that support real stewardship of the land. Let us begin with our children, offering them the opportunity to feel the land, and to learn the laws of the land – the laws of nature. (Courchene, 2017c, para. 7)

Connection to land is a source of Indigenous freedoms and autonomy, which is why Elder Courchene and Turtle Lodge focus many of their efforts on initiatives to promote earth guardianship. Courchene believes that to move forward together and address the challenges we face today, "we must return to the land to seek guidance and direction" (Turtle Lodge, 2017a, p. 27). As Anishinaabe scholar Basil Johnston (2003) describes, "[t]he earth is our book; the days its pages; the seasons its paragraphs; the years, chapters" (p. vii). This close connection to the earth, common in many Indigenous philosophies, is central in Corntassel's concept of sustainable self-determination.

In recent years, the Turtle Lodge has started the Onjisay Aki ("Our Changing Earth") initiative, aimed at providing Indigenous leadership and knowledge in a cross-cultural dialogue on issues of climate change and the environment (Turtle Lodge, 2017g). Building upon his lifetime commitment to stewardship, Elder Courchene convened the Onjisay Aki International Climate Summit in June 2017 which brought together Indigenous Knowledge Keepers and other climate leaders from as far as Japan and Peru in ceremony and discussion. Following the Summit, the Lodge hosted a second gathering of this nature in September 2017 to continue the dialogue of bridging these different knowledge systems, with renowned scientists from across Canada including acclaimed scientist and broadcaster David Suzuki (Turtle Lodge, 2017h). Through this initiative, the Lodge is practicing sustainable self-determination by documenting and sharing solutions rooted in ancestral knowledge and guided by tradition, organizing with Indigenous peoples across nation-state borders, and advocating on behalf of future generations. The Turtle Lodge has also contributed to the creation of national Indigenous Guardianship Programs for youth

through their work with the Indigenous Leadership Initiative, which seek to "empower communities to manage ancestral lands according to traditional laws and values" (Indigenous Leadership Initiative, n.d., para. 1). These initiatives and others focused on earth guardianship exemplify sustainable self-determination, positioning Indigenous peoples as autonomous authorities on environmental protection with knowledge equal to western scientific knowledge.

2.3 Bridging sustainable self-determination theory and practice

This paper takes the case study of Turtle Lodge as one example to contextualize, ground, and contribute to sustainable self-determination theory, illustrating how theory is rooted in and developed from the experiences of Indigenous peoples. The dominant state-centered definition of self-determination compartmentalizes Indigenous political and legal rights; whereas sustainable self-determination seeks to offer a more holistic approach from an understanding that these rights are inherent and interconnected (Corntassel, 2008). While this call for a shift from a rights-based understanding of self-determination to an understanding centered on responsibilities to land and spirit is compelling, there is a need to bridge theory and practice in this area. Self-determination cannot be simply theorized but must be considered in the context of what pathways to self-determination are accessible to Indigenous communities living alongside Canada. Until now there are few documented examples of sustainable self-determination in practice (see Corntassel, 2012; Corntassel & Bryce, 2012).

As outlined herein, the Turtle Lodge's governance, relationships, and activities exemplify sustainable self-determination and illustrate their movements 'for' and 'of' freedom as they navigate their autonomy among the colonial Canadian landscape (Tully, 2000). With an understanding that sovereignty is granted by the Great Spirit and not by governments, Turtle Lodge's work is centered on responsibilities to spirit and creation, rather than their constitutional rights. At the same time, the Lodge takes a pragmatic approach – aimed at staying true to their values while committed to action – which offers insight into how autonomy can be exercised in practice. While rejecting the need for government-granted sovereignty, the Lodge recognizes the value and power of governments, universities, and other western institutions as partners, and collaborates in ways that leverage their own knowledge, governance, and autonomy. The significance of these collaborations to their work suggests that sustainable self-determination theory should be more flexible and open, to account for the benefits that can come from these

partnerships and allow for a process of self-determination that follows a plurality of pathways in relation to and beyond the state.

The experiences of Turtle Lodge also illustrate some of the difficulties that arise in the practice of self-determination, which can inform theory while offering lessons learned for other communities. Firstly, while collaborations and partnerships have been critical to their success, not all partnerships have been successful. In some cases, political or institutional groups seeking collaboration with the Lodge have not been able to fully recognize western and Indigenous knowledge and Knowledge Keepers as equals, and projects and partnerships have stopped as a result. Additionally, economic self-sufficiency to continue their activities while maintaining independence has not been without its challenges. With funding opportunities and partnerships, there are often conditions attached which aim to keep power in the hands of the funder, as well as an immense amount of ongoing work on applications and reporting. Turtle Lodge has resolved not to compromise, concede, or change their work to fit the requirements and objectives of funders, which in some cases has meant forfeiting hundreds of thousands of dollars in favour of maintaining their autonomy and associated values. To this end, the goodwill and support of the community, collective vision, and commitment to spirit are what have allowed the Lodge to continue their work regardless of sustainable funding. They inspire people to give back – financially, donations of important items for their work, as well as people's time – in return for the knowledge that is shared. This ethic of responsibility is rooted in the Elders' traditional knowledge and teachings, which is central to Turtle Lodge's pursuit of self-determination as well as their sustainability as a community and organization.

The success of the Lodge in being self-determining has been recognized across the country and has made it an example to other First Nations, several of which have committed to building Turtle Lodges in their own communities. To communities pursuing sustainable self-determination in this way, Elder Courchene offers several pieces of advice (Courchene, personal communications, May 11, 2018). Firstly, there must be a leader to champion the responsibility of guiding the creation of a Lodge, who is grounded in an understanding of the ancestral ways of living and knowing and can unite and motivate community members. Additionally, Lodges must be built outside of interference from colonial influences, which requires finding the resources, effort, and goodwill within the community and with partners that value the importance of

Indigenous wisdom and autonomy. Importantly, communities should also appeal to and call upon their Knowledge Keepers to be involved in building the Lodge and provide ongoing guidance.

2.4 Conclusion

> *We cannot and must not wait to see [the Indian Act] removed for us to live our own nationhood in our homeland. We do not need their sanction or approval. We already have everything we need. We are already a Nation, we just have to believe it and live it.* (Courchene, 2016a, para. 23)

It is said that the movement towards decolonization will happen in small steps by individuals and groups towards a new path (Corntassel, 2008). As argued herein, the Turtle Lodge is a further step within this global movement. While the Lodge as a building and organization has been around for 16 years, the Elders that convene there share millennia of knowledge with current and future generations on how to live in balance with the earth. They operate from a foundation of spiritual and relational responsibilities, and it is educating others about these shared responsibilities that has allowed them to be sustainable in their relationships and as an organization over time. Through facilitating intergenerational ancestral knowledge transfer they cultivate a caring and engaged community, which in turn strengthens the feasibility and sustainability of self-determination as the community continues to grow.

In this way, the case study of Turtle Lodge offers new insights into how some of the principles of sustainable self-determination can be realized in practice, and in turn how these practices can inform new perspectives to shape theory. It demonstrates that a shift towards a responsibility-based understanding of self-determination is not only compelling in theory, but can and is happening on the ground in community practice and process. At the same time, challenges arising around aspects such as economic self-sufficiency, mutual understanding and respect in partnerships, and the need for leadership and community collaboration shed light on some of the on-the-ground realities which theory has thus far failed to illuminate. As challenges to sustainable self-determination are largely unexplored in the literature, this case study provides important insights into the lived experience of an Indigenous organization seeking to share their traditional knowledge and teachings with full awareness that they are operating within but certainly not beholden to the colonial state. These challenges – and the ways that the community has worked through them – suggest that sustainable self-determination must remain flexible and open to a degree, particularly to collaborations which can help communities increase their autonomy. Turtle

Lodge's adaptable and evolving sustainable self-determination process over nearly two decades underscores the living nature of their struggle and the hope and promise it presents for the future. It also offers insight into how Indigenous sustainable self-determination can strengthen ways of knowing and living that contribute to environmental stewardship, offering benefits to broader society in the face of climate change. Overall, experiences of Turtle Lodge provide powerful lessons for other communities, while challenging scholars to bridge the gaps between theory and practice by looking to the activities of communities to explore the accessibility, challenges, and suitability of pathways to sustainable self-determination.

CHAPTER 3: "A CHANGE OF HEART": INDIGENOUS PERSPECTIVES FROM THE ONJISAY AKI SUMMIT ON CLIMATE CHANGE

Figure 9. Participants at the Onjisay Aki Climate Summit at Turtle Lodge

"A CHANGE OF HEART": INDIGENOUS PERSPECTIVES FROM THE ONJISAY AKI SUMMIT ON CLIMATE CHANGE

Abstract

In June 2017, the Turtle Lodge – an Indigenous knowledge centre in Sagkeeng First Nation, Manitoba – convened the Onjisay Aki International Climate Summit, initiated and led by First Peoples. This initiative was an unparalleled opportunity for cross-cultural dialogue on climate change with participants including Indigenous Knowledge Keepers from 14 Nations around the world, within a sacred lodge setting that enabled Indigenous processes, including ceremony, to be fully implemented. In collaboration with Turtle Lodge, our research team was invited to support the documentation, synthesis, and communication of the knowledge and perspectives shared at the Summit. This process of Indigenous-led community-based research operated within a ceremonial context, and used roundtable discussions and collaborative written and video methods, with the aim of taking an inter-epistemological approach to share the message from the Summit with a wider audience across cultures and geographies. The Summit brought forward discussions and understanding that climate change is a symptom of a problem with the human condition caused by colonialism, and therefore addressing climate change requires a shift in human values and behaviours. The Knowledge Keepers emphasized that their diverse knowledges and traditions – embedded in their spiritual ways of life and carried out through their nationhood and leadership – can provide inspiration and guidance for this cultural shift. They discussed and illustrated how Indigenous guidance for action on issues such as climate change is derived from a relationship with the land and spirit. This underscores the need for a new approach to engaging with Indigenous knowledge in the climate research, which acknowledges that it is not only a source of observations on environmental change, but a wealth of values, philosophies, and worldviews which can inform and guide action and research more broadly. The leadership of Indigenous Knowledge Keepers in bringing forward their knowledges, and the importance of ceremonial contexts in doing so, must be respected. In this light, the Onjisay Aki Summit makes significant contributions to the literature on Indigenous perspectives on climate change in Canada, as well as the ways in which this knowledge is gathered, documented, and shared through the leadership of the Knowledge Keepers.

3.1 Introduction and Background

Climate change is a pressing, multi-dimensional issue, which affects all of humanity across our social, economic and ecological systems. To date, the discourse regarding climate change and how to respond to it has largely been dominated by scientific experts (IPCC, 2014); while in recent decades there has been increasing recognition of the value and validity of Indigenous knowledge (IK) in western climate policy and research - the result of decades of Indigenous organizing, ceremony, lobbying, and advocacy. At the international level, early recognition of the contributions of Indigenous peoples in the context of environmental change was brought forward in the 1987 Brundtland Report, following which a call for active participation of Indigenous stakeholders in research was enshrined in the 1992 Convention on Biological Diversity and the 2002 World Summit on Sustainable Development (CBD Secretariat, 1992; McGregor, 2013; Murphy, 2011). More recently, in a monumental advancement for Indigenous rights globally, the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted in 2007, which advocates for Indigenous involvement in governance and research (UN, 2007). In Canada, there have been increasing partnerships between researchers and Indigenous communities to collaborate on documenting impacts and responses and co-producing knowledge to inform policy, as evidenced by numerous journal special editions in this field (e.g. Ford & Furgal, 2009; Green & Raygorodetsky, 2010; Salick & Ross, 2009).

While this increase in recognition, inclusion, collaboration, and co-creation marks significant progress, much work remains to engage IK to its full extent, recognizing the embodied nature of the knowledge and the leadership of Indigenous peoples (Arora-Jonsson, 2017; Watson & Huntington, 2014). Understanding of the valuable contribution of Indigenous peoples on environmental issues is by no mean universal (Arora-Jonsson, 2017; McGregor, 2013). Indigenous ways of knowing have been discredited in Canada since the beginning of colonization, when the concept of *terra nullius* (the assertion that North America was "empty land" before European arrival) was introduced to dismiss Indigenous views of the land (Alfred, 2009a; Smith, 1999), and continue to be often overlooked, dismissed, or misunderstood by academics and decision-makers (Louis, 2007; Watson & Huntington, 2014). Where IK is recognized as valuable, it is often seen as a source of observations about the environment to complement western science within academic, policy, or management frameworks (Watson & Huntington, 2014), and as a result includes only what researchers consider "relevant" or complementary knowledges. Less often is

IK recognized and engaged as a complex and dynamic system – with distinct spiritual and spatial dimensions – that is inseparable from the lived experiences of Indigenous peoples (McGregor, 2004; Smith, 1999). Whyte (2017b) emphasizes that this shallow engagement of IK in research on sustainability overlooks the governance-value of these knowledges as "irreplaceable sources of guidance for Indigenous resurgence and nation-building" (p. 5). There remains a need for a further shift from recognizing IK as a source of empirical observations or 'facts' to engaging with it as a living system derived from and embedded within complex lifeways and governance systems (Berkes, 2009; Watson & Huntington, 2014; Whyte, 2017b).

To challenge the colonial dynamics of research in this context, researchers must go beyond simple inclusion of IK and towards understanding and defining the problems and approaches to climate change research according to Indigenous worldviews and ways of knowing. To do so, researchers must heed the calls of Indigenous and allied scholars to move away from characterizations of IK as exclusively 'local' and 'traditional' and meaningfully engage with the philosophical and epistemological dimensions of IK (Cameron, 2012b; McGregor, 2009a; Smith, 1999; Nadasdy, 1999; Watson & Huntington, 2014). In order to grapple with this complexity, Murphy (2011) calls for an approach to climate research "that moves beyond the bounds of disciplinary knowledges into a space that is overtly *inter-epistemological*" (p. 492). To explore what inter-epistemological research might look like in this context, it is important to first discuss the literature regarding IK and some of its underlying principles.

3.1.2. Indigenous Knowledge

While Indigenous knowledge systems are diverse, complex, and unique, there are several common principles across these knowledge systems (Battiste & Henderson, 2000; Cajete, 2000) which some scholars argue are important in the context of understanding and addressing climate change (Rathwell, Armitate, & Berkes, 2015; Raygorodetsky, 2011; Wildcat, 2009). A central principle in IK is relationality; it is understood that IK originates through relationships and is shared with all of creation (McGregor, 2004; Wilson, 2001; 2008). Indigenous peoples around the world have a spirituality that is based on these relationships to creation (McKay, 1992). For First Nations, creation stories depict a special relationship between Nations and Mother Earth, and guide them in their relationships with each other, other beings, and spirit (Pratt et al., 2014). The understanding of these relationships give rise to holistic ways of seeing the world, centered on

concepts of interconnectedness and balance between all beings (Absolon, 2011; Borrows, 2006; Ermine et al., 2004). In many Indigenous traditions, it is understood that these relationships to Mother Earth and all of creation come with roles and responsibilities, to honour them through respect, reciprocity, and thanksgiving (Ermine et al., 2004; Johnston, 2003; Kimmerer, 2014; Turner & Clifton, 2009).

From these principles of relationality and stewardship, Indigenous peoples have developed rich land-based knowledges over thousands of years of living in close connection with their homelands that are epistemologically different from western scientific knowledge (Berkes, 2008; Kimmerer, 2013). This knowledge, stemming from deep cultural and spiritual connections to their lands, has allowed Indigenous communities to adapt to social and environmental changes over past centuries, which continue till today (Green & Raygorodetsky, 2010). The adaptive nature of IK – specifically as it relates to environmental changes – has prompted some to suggest that it may act as a buffer against climate change impacts (Berkes, 2009; Galloway McLean, Johnston, & Castillo, 2012). While Indigenous peoples have contributed the least to climate change, their knowledges offer valuable insight on the complexities of the natural world and our relationship to it, which may help humanity address the monumental challenges that climate change presents (Raygorodetsky, 2011). At the same time, Indigenous scholars assert that IK must not only be engaged to inform western climate solutions, but principally to strengthen Indigenous adaptive capacities and self-determination (Whyte, 2017a; 2017b; Wildcat, 2009).

3.1.3. Turtle Lodge and Onjisay Aki

The Turtle Lodge Central House of Knowledge is an international centre for Indigenous education and wellness located in Sagkeeng First Nation, Manitoba, on Treaty 1 territory (www.turtlelodge.org). The Turtle Lodge was founded in 2002 by Anishinaabe Elder Dave Courchene (Nii Gaani Aki Inini – Leading Earth Man) and is a centre for sharing ancient Anishinaabe knowledge and practices, for cross-cultural knowledge exchange, and collaborative knowledge creation (Turtle Lodge, 2017). In 2018, the Lodge was named as the central place of governance by Knowledge Keepers from across Turtle Island (North America) and Abya Yala (South America) (Ijaz, 2018). While the Turtle Lodge community has always been dedicated to environmental balance, following the ethic of stewardship central to an Anishinaabe worldview, in recent years they have taken climate change as a focus in much of their work. Driven by the

desire to bring forward deeper understandings of Indigenous perspectives and reclaim a place of leadership for First Peoples in the public and political discourses on climate change, Elder Courchene and the Turtle Lodge began the Onjisay Aki ("Our Changing Earth") Initiative. In June 2017, the Turtle Lodge convened the Onjisay Aki International Climate Summit to bring Indigenous knowledge and values to the forefront of the international and national conversation on climate change, and inspire new collaborations and actions. This initiative was an unparalleled opportunity for cross-cultural dialogue on climate change, where Indigenous Knowledge Keepers were invited to share their spiritual and ancestral knowledge about climate change with each other, as well as invited guests that represented the four original races of humanity (Turtle Lodge, 2017a). The gathering was led by ceremony and carried out in accordance with ancient Anishinaabe prophecies, with ceremonial processes and contexts considered just as important as the knowledge shared. Elder Courchene described his vision for initiating the Summit:

> *I really felt that as Indigenous Peoples we can make a great contribution in terms of helping all of us as human beings to come to terms with the way that we're behaving, the way that we're treating the Earth… Initiating this Summit, I wanted to show the world who we are, what we have, particularly the knowledge that we hold that has taken us thousands and thousands of years to evolve.* (D. Courchene, personal communication, May 25, 2017)

In collaboration with Turtle Lodge, the Prairie Climate Centre's (PCC) research team was invited to support the documentation, synthesis, and communication of the knowledge and perspectives shared at the Onjisay Aki Summit. This research makes valuable and unique contributions in both content and process to this field, with three broad objectives exploring: (1) some of the ways in which Indigenous peoples in the Canadian Prairies and beyond are experiencing and understanding the problem of climate change; (2) the role of Indigenous knowledge and traditions in addressing climate change, according to the Elders and Knowledge Keepers; and (3) solutions to climate change that Indigenous leaders and communities are bringing forward.

3.2 Methodology and Methods

Through a collaborative process, the Turtle Lodge and the PCC used written and video methods to support respectful synthesis and communication of IK on climate change with a wider audience. Methods were guided by the Turtle Lodge community and designed with the aim to honour the unique epistemological considerations required when documenting Indigenous

knowledge, including oral tradition, cultural and ceremonial protocols associated with knowledge exchange, and the embodied nature of IK.

We adopted an integrated approach based on principles of both Indigenous and community-based research (CBR) methodologies. Though most scholars agree that Indigenous methodologies cannot be singularly or simply defined, Louis (2007) describes them as "alternative ways of thinking about research processes" (p. 130) which embrace Indigenous epistemologies and are fluid, dynamic, circular, and cyclical. Some scholars suggest that many of the aims and principles of Indigenous methodologies are shared by western CBR approaches, including: addressing power imbalances in conventional qualitative research; ensuring the full participation and leadership of community, and community ownership and control of knowledge; and recognizing participants' power in representing themselves, creating knowledge, and defining research aims and outcomes (Chilisa, 2012; Koster et al., 2012; Halseth et al., 2016). Some have even suggested that CBR can provide a "transitional methodological process towards Indigenous paradigms" (Kosters et al., 2012).

Through a process of Indigenous-guided CBR, rooted in a long-term partnership between the community and the research team, the project centered around the Turtle Lodge's Onjisay Aki International Climate Summit. The Summit convened 22 leaders to discuss Indigenous-led solutions to climate change, among them 16 Knowledge Keepers and leaders from Indigenous Nations including the Anishinaabe, Dakota, Dene, Plains Cree, Lakota, Blackfoot, Cherokee/Choctaw, Haida, Pueblo, and Inka. Recognizing the importance of the Indigenous axiology of relational accountability in Indigenous methodologies – in which relationships are formed through researchers' participation in community traditions and understanding of protocols, behaviours, and values (Smith, 1999; Wilson, 2008) – the research team frequently traveled to the Lodge for gatherings, ceremonies, and meetings leading up to and following the Summit.

The Summit discussion proceeded in the sacred Lodge over three days at a roundtable, led by traditional ceremonies of Indigenous peoples across North and South America and following traditional Anishinaabe protocols of a talking circle (**Fig. 10**). While talking circles have been used by Indigenous peoples for millennia, they have recently been accepted as a research method within the academy (Wilson, 2008). The talking circle is a technique based on respect, where each person talks in turn uninterrupted, with the symbolism of the circle representing the holism of the earth, continuous compassion and love, and equality of all members (Chilisa, 2012; Wilson, 2008).

Importantly, talking circles create opportunity for storytelling, an integral part of Indigenous ways of knowing; Indigenous stories are inseparable from knowing, thus narrative is an essential part of research in Indigenous frameworks (Kovach, 2009). Additionally, the discussions were led by ceremony which is understood to allow participants to establish spiritual relationships that influence the thoughts and knowledge shared. The roundtable discussions were facilitated by Knowledge Keeper Dave Courchene and were open-ended, allowing participants to relate to the topic with their stories, experiences, and knowledge as they saw fit.

Figure 10. The Onjisay Aki Climate Summit roundtable discussion at Turtle Lodge.

The roundtable discussion was fully recorded on video, with the exception of the Pipe and Water ceremonies, as per Turtle Lodge protocols. Video recordings were transcribed and transcripts collaboratively qualitatively analyzed. Content analysis was conducted with the Summit transcripts, as well as transcripts from two discussions with Elders at Turtle Lodge during the planning of the Summit, to identify common themes, thoughts, stories, and experiences (Baxter, 2009). Analysis focused on the perspectives of the Indigenous participants. Transcripts were initially read, and a list of themes and ideas pertaining to the research objectives was made (the preliminary coding scheme). The coding scheme was then developed, refined, and reorganized through three rounds of qualitative coding in NVivo (Miles, Huberman, & Saldaña, 2013). After each round, code frequencies and associations were compared and a mind map was created to help identity the connections between codes. The coding scheme and coded text was repeatedly reviewed and discussed among the community and research team, to affirm interpretation and

representation of ideas. After a third round of coding, discussions with the community of the final codes and connections among ideas allowed narratives to emerge. Simultaneously, several short videos were made with the footage of the Summit, highlighting the main themes and outcomes of the discussion to share with a wider audience.

3.3 Results

Over four days of ceremony and discussion, Knowledge Keepers and environmental leaders discussed problems, impacts, and solutions associated with climate change. The discussion reflected a holistic understanding of climate change, as resulting from and interacting with systems such as settler colonialism, capitalism, imperialism, and extractive economies. From an understanding of how colonial systems – and the ways of thinking underlying them – have disconnected Indigenous peoples from their homelands and cultures, many participants called for decolonial climate solutions that involve reconnecting with Indigenous traditions, with the land, and with each other. It was widely agreed that Indigenous peoples' leadership, knowledges and values can provide a strong foundation for these solutions, while contributions from and collaborations across cultures and geographies will undoubtedly be needed to address the problems at the scale we face. The major themes of the discussion are presented here in three areas: problems and impacts; Indigenous knowledge and traditions; and Indigenous-led solutions and actions. An overview of themes in these three areas is highlighted in Figure 11 and discussed in the subsequent sections.
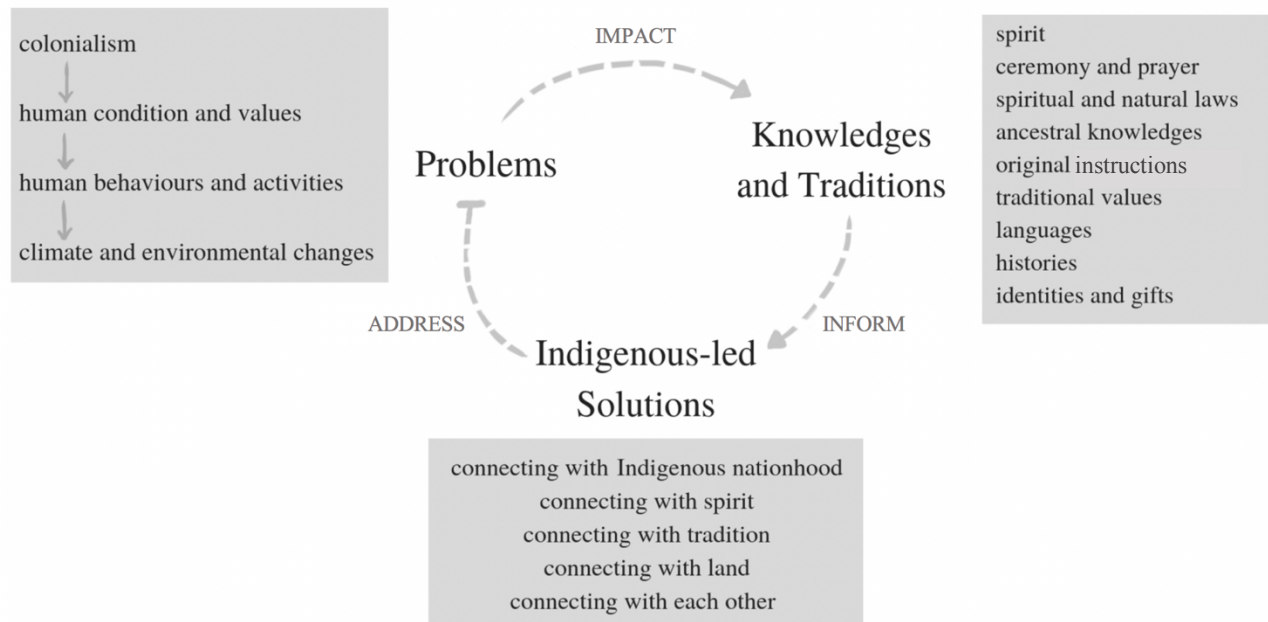
Figure 11. *The major themes from the content analysis of the Onjisay Aki Summit. Participants discussed the problems underlying climate change, which have impacted their knowledges and traditions. At the same time, the latter were considered sources of strength to inform solutions to climate change that address the underlying societal problems.*

3.3.1 Understanding the problems and impacts of climate change

Participants talked about the increasingly visible and devastating impacts of climate change – changes in weather, animal migrations, seasonal duration, water quality and levels, quality of significant plants and medicines, forest fires, and melting icecaps. Chief Jack Caesar from the Ross River Dene described the changes:

> *The weather patterns are really changing up in the north… [they] are really changing the seasons there for us. We're at a time where it's getting a lot warmer, there's less snow... And the soils and the permafrost that we depend on, that too is changing.*

Participants talked about how these environmental changes are impacting the social well-being of their communities – decreasing their ability to practice their traditional livelihoods, decreasing the health and safety of their people, and having significant emotional and psychological impacts resulting from being disconnected from the land. Many people spoke from their own experiences and observations of changes in their communities, discussing the changes they have seen in their own lifetimes. As former Assembly of Manitoba Chiefs Grand Chief Derek Nepinak described:

I see that the climate change issues are happening on the ground in our communities. The water table has come up back home, and we can't live the way we used to in my community. So what value do I have going to a fancy hotel in Ottawa or Vancouver or Toronto, having a beautiful meal and talking about climate change, when the impacts are really happening on the ground in our communities?

These changes were discussed in relation to other global problems and their impacts – pollution from extraction and mining, widespread sickness among people and animals, religious extremism, war and violence, gender inequality, poor mental health, and suicide epidemics. There was a general sense in the discussion that humanity is in a time of multiple crises which are all inter-connected, and which many see as tied to colonialism. The legacies and ongoing impacts of colonization were a major focus of the discussion, in relation to these social and environmental crises. Knowledge Keepers spoke of the tools of colonization – such as the Indian Act, the Doctrine of Discovery, and other colonial Canadian government legislation attempting to control Indigenous peoples – which they believe must be dismantled, rejected, or changed. Elder Dave Courchene explained that before we can move forward together, "the truth has to be told, that genocide was practised on the First Peoples, to remove the identity, the language, and the ceremony."

Participants discussed how colonial and capitalist systems have brought forward and imposed a set of western values, while repressing Indigenous traditional values and ways of knowing. The Knowledge Keepers described how these western values create a human condition – based on greed, anger, competition, selfishness, arrogance, ignorance, disrespect, and dominance – which fuels destructive human behavior and activities – such as extraction and exploitation of resources, war and violence, and pollution and manipulation of ecosystems (**Fig. 12**). These behaviours, they say, are working against the natural balance of life, as evidenced through severe impacts such as climate change, biodiversity decline, ecosystems degradation, water pollution and shortage, and poor health of people. Many participants discussed how they see these impacts to be negatively affecting Indigenous peoples and all of humanity, increasingly disconnecting people from the land and from each other and thus perpetuating the same problematic western values and behaviours. Dave Courchene described this condition from his perspective: "Climate change is really a reflection of values that are creating this imbalance that we're finding in today's world… Our behavior is working against the sacredness of life."

Human values and condition	Human behaviours and activities	Impacts
greed arrogance anger dominance selfishness competitiveness disrespect ignorance	extraction exploitation pollution war violence	climate change biodiversity loss water pollution poor human health ecosystem degradation
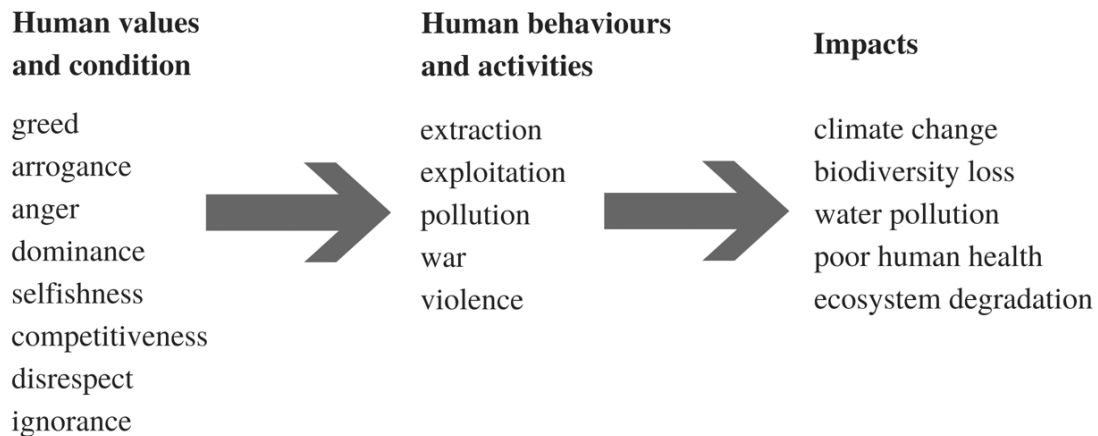
Figure 12. *The participants described elements of the human condition and values, which motivate human behaviours and activities, which cause the impacts that we are facing today.*

In discussing the negative human values and behaviours causing the impacts that we face today, some participants referred to humanity as 'lost' or 'asleep' in our actions and our failure to respond to the problems. Some described this as being misguided or led astray by a desire for power and control. Their comments reflect an understanding that the environmental crisis is a human crisis – inextricably linked to racism, violence, trauma, and domination. Dakota Elder Katherine Whitecloud described this personal problem of climate change:

> *People don't want to acknowledge the state of the earth, where it's at right now, because it's a reflection of themselves. It's a reflection of their homes, their personal space… where the spirit and the heart reside… and people don't want to look at that.*

Many Knowledge Keepers also commented on people's failure to listen to the voice and messages of the earth, and to uphold their responsibilities to reciprocate for the gifts that the earth has given humanity. Pueblo professor Vivian Delgado described climate change as "the wordless way that the earth speaks to us." While Anishinaabe Elder Elmer Courchene questioned: "Are we paying attention to what nature is telling us? Are we listening to the winds, are we listening to the forest, are we listening to the waters, to the thunders?" There was an understanding that because of peoples' disconnection from the land, they are not able to hear and understand the messages that the changes are bringing, and to act in response. Chief Jack Caesar passionately emphasized this through his comment: "It's life. The waters, the air. Everything that gives us life should be given respect, and in today's world, we're not doing that. We're ignorant to it. We're not listening to its cries."

3.3.2 The role of Indigenous knowledge and traditions in addressing climate change

In order to address climate change through a change in the underlying human condition and western values, most participants suggested people must reconnect with Indigenous traditions, histories, knowledges, and ways of knowing, as a foundation for action led by Indigenous peoples. Participants discussed the ways in which Indigenous cultures, spiritualities, knowledges, livelihoods, histories, and languages can provide guidance for solutions to the imbalance we see in the environment. Many Knowledge Keepers emphasized how spiritual and natural laws are critical to guide human behavior and align actions with the laws and limits of the earth. This comes from their understanding that power is not held by governments or judiciaries, but by the spirit and the land; these laws are not owned or controlled by people, but come from the spirit and the earth itself and are non-negotiable. Several people talked about spiritual laws as representing the original instructions on how to live and behave properly as humans, which are expressed for example in the Anishinaabe Seven Sacred Laws and the Great Binding Law. Natural laws are understood as the principles of balance that the Earth operates on, which never change and can only be learned through observation of the earth. Dave Courchene described this:

> *Natural laws are really very simple. The way to understand natural law is just to watch nature. Natural law is that you'll get a full moon every 28 days. That's never changed. Natural law is that the sun will rise in the morning... Nature is the book of knowledge that we should be reading from. That's where the knowledge is that we need to take better care of the earth.*

Understanding of these spiritual and natural laws, the Knowledge Keepers explained, comes from connecting to the spirit and to the earth, through ceremony, prayer, and spending time out on the land. Many Knowledge Keepers emphasized that spiritual connection must be the first step, as it brings connection to one's purpose, vision, and identity; each person's spirit holds their identity, and understanding one's own personal and collective identity is critical for living a good life. When discussing this connection, Vivian Delgado said "We have our spirit... that's our culture, that's our identity." Haida Knowledge Keeper Miles Richardson added "As Indigenous peoples we have been given the gift of spirit... that's where our strength is, in understanding the significance of relationship to spirit." The Anishinaabe Knowledge Keepers at the Summit shared some of the gifts that are central to their identity as a people - the pipe, the drum, medicines, visions and dreams - which have helped them maintain healthy, respectful relationships with one another, the earth and the spirit. Other Nations have their own distinct gifts, some of which were shared

such as the corn ceremony of the Inca Knowledge Keepers, critical components of their cultures. Without an understanding of identity, some participants said, people lack purpose and meaning in their lives and turn to material objects and substances to create meaning, thus perpetuating the environmental problems at hand. In this light many Knowledge Keepers agreed that connection to identity, particularly Indigenous peoples whose identities have been oppressed for so long, is critical. As Miles Richardson explains, it is these identities that have allowed Indigenous peoples to thrive for thousands of years:

> *My Nation has thrived in our homelands, a set of islands off the north Pacific coast, for thousands of years, for hundreds of generations. Suffice it to say that we've been there since our creation on this Earth, and we know we were created in our homelands… And our culture has developed through all of that time, and our culture, like many other indigenous peoples' cultures, has shown us the way to understand the original instructions that our Creator has placed us on this Earth with. And our culture has guided us through living in the same place, through hundreds of generations for thousands of years, how to live the right way. How to listen so that we can understand what has been referred to as the natural law… giving us the knowledge that there's no negotiating with this law. All there is, is compliance, and if we don't comply, our culture tells us, we suffer in direct proportion to our transgressions.*

Indigenous identities are brought forward through stories and gifts, as well as through ancestral knowledge passed on over generations. The participants discussed at length the rich ancestral land-based knowledges, teachings, and values developed by their Nations over thousands of years in connection with the spirit and the land. They talked about how their people have lived close to and listened to the earth, developing knowledges which are embedded within their languages and their relationships to the land. As Japanese Knowledge Keeper and shaman Yoshimaru Higa shared, "[in] various environments on the earth, jungle, cold zone, desert… wisdom and knowledge of how to live in harsh environments has kept Indigenous peoples thriving for thousands of years, tens of thousands of years." Participants emphasized how it is not only the knowledge in isolation, but the ways of being and knowing in which knowledge originates and evolves, and the contexts within which it is transmitted and shared, which are vitally important.

In this regard, participants highlighted the role of Knowledge Keepers and Elders in holding and sharing that ancestral knowledge, and the importance of ensuring they are in leadership positions to allow them to do so. As Dave Courchene described: "the Knowledge Keepers and the Elders of our Nations have always been there to be a voice of conscience… always positioned to inspire us and to guide us in terms of how we should be behaving individually, how

we should be walking on the earth." Much of the discussion revolved around how these knowledges and ways of knowing can provide a critical foundation for solutions to climate change, rooted in an understanding of the values and relationships surrounding them.

3.3.3 Indigenous-led Solutions to Climate Change

Participants emphasized that solutions to climate change are urgent, must address the underlying problem of the human condition, and must respect Indigenous leadership in bringing forward a foundation of ancestral knowledge and traditions, which reflect a positive value system and code of human behaviour. Participants talked about how, through the leadership of Indigenous peoples, humanity can return to a way of life in balance with the earths limits and laws. Anishinaabe Elders described this as the 'trail of the turtle', which is "a path that will guide humanity back to a way of life based on traditional values and balance," led by the spirit of the grandmother turtle representing truth. Knowledge Keeper Allan White shared a belief that "the trail of the turtle will lead us to the knowledge that we're seeking." They say the changes we see in the environment are a result of straying from the trail of the turtle, and we need to take actions that will bring us back to that way of life and restore balance, through the leadership of Indigenous peoples. This trail is guided by the Seven Sacred Laws, as Dave Courchene described:

> *The trail of the turtle is there to inspire us to walk a path following a way of life that is based on the Seven Sacred Laws. The Turtle herself represents the teaching of truth, and before her comes the 6 other animals and teachings – the buffalo (respect), the each (love), the bear (courage), the sabe (honesty), the beaver (wisdom), and the wolf (humility). You cannot walk the trail of the turtle without having respect. You cannot walk the trail of the turtle without having love, without having courage, without having honesty, wisdom, and humility. And it is these animals that come before the turtle and mark the trail with each of the sacred values. The Elders say, if you can walk these 7 teachings, you're going to have a good life.*

Analysis of the discussion revealed five major directions for action brought forward by participants: living Indigenous nationhood; connecting with spirit; connecting with tradition; connecting with the land; connecting with each other (**Table 1**).

Table 1. *Directions for action brought forward by participants of the Onjisay Aki Summit, with common themes and concepts associated with each.*

Direction for Action	Themes	Main Concepts
Connecting with Indigenous nationhood	Trail of the Turtle Indigenous leadership Sovereignty Traditional governance Prophecy	True leaders of our homelands; duties and responsibilities; spiritual leadership; sharing a way of life; guidance and direction; be who we say we are; live our teachings; strong and resilient peoples; original instructions
Connecting with spirit	Identity Purpose and meaning Healing Thunderbird spirit	Spiritual guidance; prayer and faith in health; alliance and union with thunderbird spirits; gratitude; spirituality; individual purpose; spiritual poverty; memory of identity
Connecting with tradition	Traditional ways of living Collective identity	Going back to traditional ways of life; connecting with collective identity; traditional gender roles
Connecting with the land	Relationship to the earth Guardianship, stewardship Learning from land	Reliance on earth and natural elements; love of the land; time on the land; earth will look after us; relation to creation; caring for and protecting the land and waters; voicing for land and animals; listening to the land; the earth as the greatest teacher; rites of passage
Connecting with each other	Shared responsibilities Nationhood of humanity Collaboration Knowledge sharing Youth Education Celebrating diversity People power	Connecting from the heart; shared humanity; union of North and South; responsibilities to our relatives; standing together; sharing across knowledge systems; reconciliation; western science and Indigenous knowledge; ancestral schools of knowledge; role of youth in society and solutions; land-based education; reforming education systems; individual action; collective action; social movements

In order for Indigenous peoples to lead, they must be sovereign and free to practice traditional governance and define their own nationhood, the Knowledge Keepers explained. Participants discussed how Indigenous peoples' knowledge of, and roles in, maintaining the balance of life on earth can only be expressed under sovereign, traditional governance. There were differences among participants in advocating which pathways to freedom and self-determination in governance should be pursued; some talked about working to reform, replace, or abolish the

Indian Act and other colonial legislation governing Indigenous peoples, while others emphasized the importance of turning away from the Indian Act and "breathing life into sovereignty." There was extensive discussion around nationhood, and encouragement of Nations to define and assert their traditional laws and systems in their territories, as the Haida Nation has done. Miles Richardson described the importance of embodying nationhood:

> *We must be who we say we are. As these winds of trouble blow over humanity… if we're going to restore the balance so that we can thrive as human beings, we as the indigenous people on this planet, must be who we say we are. Through our cultures, we know who we are. That's been passed down to us clearly. We must find the strength, find the courage, to stand up and live our teachings every day. That's an easy thing to say. Those are easy words to share with you, but that's a difficult challenge for us to every day.*

From a foundation of defining and living their nationhood, the Knowledge Keepers' discussion focused on actions to connect with culture and tradition, spirit and identity, with the land, and with each other. Many participants talked about the legacies of colonialism which have instilled fear and negativity around traditional ways of life, and how this must be challenged and the younger generation should be encouraged to embrace their culture as a source of strength. It was said that living traditional nationhood and ways of life will allow greater connection with the spirit. People often discussed how connection to spirit can provide individual healing, a sense of purpose, and gratitude, that are needed first before humanity can heal the relationship with the earth.

With their sovereignty and cultural and spiritual connection, it was discussed how Indigenous peoples must foster and share their ancestral knowledges and connection with the earth. Knowledge transmission between Indigenous Elders and youth was a common theme, and the idea was put forward to develop Ancestral Schools of Knowledge to provide opportunities for land-based education. It was reiterated that connection to ancestral knowledge comes through connecting to the land, and thus spending time out on the land is a key part of the solution. Participants shared that spending time on the land can bring a deeper understanding of traditional values and teachings, teach people how to listen to the messages of the earth, connect people to their Indigenous languages, and allow individuals to develop a deeper connection with spirit. The earth is the greatest teacher, several Elders said.

One example of an action to strengthen nationhood and connection to the earth which was discussed was guardianship programs, such as the Indigenous Leadership Initiative's National

Guardian Network. These programs were created to teach young people how to be true stewards of the land, fostering knowledge transmission while providing sustainable employment options. Yoshimaru Higa explained "We are present on this earth as guardians," while Dave Courchene described an understanding of guardianship "not [as] protecting the earth, but listening to the earth and bringing forward her messages." Being able to hear and understand these messages comes from spending time on the land, as Courchene explains:

> *I believe that is where Indigenous peoples can have a very important role in sharing this knowledge, these protocols, that we all need to have in terms of having a relationship with the land itself… If there's anything we can do to inspire our fellow human beings when it comes to climate change I would say go to the land, go and sit on the land, go and be with the land. Open yourself to hear the voice of the land. Open yourself to feel the land. All we need to do is teach them why we love the land… To us, we are the land…. We have to be a voice of that spirit, we have to be a voice of that land.*

While Indigenous peoples maintain a strong ancestral connection to the earth, participants emphasized that responsibilities of stewardship are shared among all people that have come to these lands. In this light, they discussed the need for knowledge sharing, relationship building, and collaboration across cultures and geographies. There was a specific focus on the need to bring together Indigenous knowledge and western science on climate change, in a way that recognizes both as diverse and equally valuable. As Dene man Lawrence Nayally shared "there's still so much incredible knowledge that our people have that the world has never heard of yet before." Plains Cree and Anishinaabe Knowledge Keeper Alvin Manitopyes acknowledged that there is increasing recognition of Indigenous wisdom around the world:

> *We have suffered so much, but yet, we have so much to give to the world, and the world is starting to recognize the validity of our spiritual knowledge. It's becoming increasingly more important that this knowledge gets out all over the world, so I really welcome gatherings like this, and I encourage every one of you to go out and share that knowledge. Become knowledge keepers. Teach it to the young people, because they have to carry it on to the future.*

Forming relationships across cultures was discussed as important not only for knowledge sharing, but also as a way to combat the division and competition created by colonialism. Participants discussed the need to build a movement towards defining a nationhood of humanity, uniting all of the human family while also celebrating the diversity of the contributions of different peoples and the unique gifts that each brings. Several speakers compared the diversity of the human family to the diversity found in nature, something that should be recognized as beautiful, not used

to divide us. Miles Richardson described how this diversity can strengthen humanity's resolve through the challenges faced:

> *One of my old chiefs, Chief Skidegate Lewis Collinson, made a speech in the 1960s that has formed a basis of the proclamation of our Nation… he said, "Our forests are made up of trees. Much like the people who populate this Earth, each person and each tree is different. Different colors, different faiths, different beliefs, they come from different places. But like the forests of our islands… when troubles come to us, they come to us all." And if we're going to withstand the winds of those troubles, like the forests we must intertwine our roots so strongly that these winds of our troubles cannot blow us over, and we must intertwine our roots with our brothers.*

Overall, the participants underscored the power that all people can have individually and collectively to bring about change, and the urgency and magnitude of the actions needed. On the final day of the Summit, participants drafted and adopted the Onjisay Aki International Climate Calls to Action, which outline actions to strengthen ancestral knowledge, sovereignty, relationships, and transformation (**Fig 13**; the Calls to Action can be found in **Appendix B** and read at: http://onjisay-aki.org/onjisay-aki-international-climate-calls-action). Elder Dave Courchene describes those who will lead these changes as "the people of the heart" who will ignite a social movement for change. Action, he suggests, must begin within by each individual making the journey to the heart to find their true spirit, identity, and love that will motivate and guide their actions. Participants talked about the need for positive, diverse solutions, starting on a personal level, rooted in spiritual and relational responsibilities. Although Indigenous peoples have an ancient connection to these lands, the Knowledge Keepers remind us that the responsibilities to care for them is shared among all people who have come here. Katherine Whitecloud stressed this shared responsibility:

> *We are part of this generation this era that has created this catastrophe and that is what it is, it is a catastrophe. Therefore, it is our responsibility, every day, because we only have today. Only Creator knows if we are going to wake up tomorrow morning. We have today, to do something about it.*

Figure 13. A short video summarizing the Onjisay Aki International Climate Calls to Action
https://www.youtube.com/watch?v=xqPKCQCcjiU

Several short videos have been made with footage from the Summit to share the spirit of the Onjisay Aki gathering and some of the highlights from the discussion with a wider audience (e.g. **Fig 13**). A website was also created to share these videos, along with the Calls to Action, information about the speakers, and outcomes of subsequent gatherings (www.onjisay-aki.org).

3.4. Discussion

The Onjisay Aki Summit brought forward broad yet deep understandings of the problems associated with climate change from Indigenous perspectives, representing a marked shift from the dominant academic and political discourses on Indigenous knowledge and climate change. Through this initiative, Turtle Lodge and collaborators are inciting a new narrative and model for Indigenous-led and collaborative climate research and action. The Onjisay Aki discussion makes significant contributions to the Indigenous perspectives on climate change in Canada documented in the academic literature, as well the ways in which this knowledge is gathered, documented, and shared through the leadership of the Knowledge Keepers. These contributions to both content and process are discussed in the following sections.

3.4.1 Contributions to content: Climate change and the human condition

The Knowledge Keepers of Onjisay Aki individually and collectively contributed holistic understandings of the problems underlying climate change, direction for actions to address these problems, and the role of Indigenous peoples and their knowledges in these solutions. It was apparent from the discussion that the term 'climate change' is a western concept, and is not the way many Knowledge Keepers conceptualize the changes they are seeing and experiencing; rather, they described the earth as 'sick' or 'out of balance' as a result of humanity being 'lost' or 'asleep' or 'disconnected.' Climate change was not understood as an external, isolated problem or natural phenomenon, but was discussed as a human, societal and deeply personal challenge. This understanding of the fundamental problem – the human condition resulting from disconnection from land and spirit due to colonialism and western imposition – and the language used to discuss it, provides a holistic view that is not often captured in the literature on IK and climate change, as discussed further below.

From this holistic understanding of the problems underlying climate change, the Knowledge Keepers made clear that environmental challenges cannot be addressed without addressing the legacies and realities of historic and ongoing colonialism. This is significant considering that the colonial origins and contexts of climate change are rarely extensively engaged in the literature on IK and climate change in Canada. Cameron (2012b) reviews the literature documenting the human dimensions of climate change in the Arctic involving Inuit peoples, and finds that the majority of studies do not discuss the role and influence of colonialism on research subjects, objects, findings and research relations, or the significance of resource exploration, extraction, and shipping as human dimensions of climate change. She argues that this exclusion of colonial and postcolonial influences in the Arctic literature risks re-inscribing colonial relations by "buttressing political and intellectual formations that underwrite a new round of dispossession and accumulation in the region" (p. 104). At the international level, Ford et al. (2016) review the Fifth Assessment Report of the International Panel on Climate Change (IPCC) Working Group II and reveal that histories of colonialism, oppression, and/or racism are only found in two paragraphs out of thirty chapters. More generally, they found that content relating to Indigenous peoples "primarily focuses on the proximate factors affecting impacts, adaptation, and vulnerability (for example, poverty, ill health, changing livelihoods, marginalization and the erosion of TK) without posing the deeper questions around why these conditions exist, and the historic, political, social,

and economic processes that have led to them" (p. 351). This reflects a broader tendency among some governments, academics, and organizations to depoliticize the problem of climate change: to divorce the social, political, historical, and cultural contexts from the problems and impacts, framing the problem as separate from society rather than a result of societal conditions. This approach is problematic in part due to its role in limiting the ability to link action on climate change to broader goals or processes of decolonization (Ford et al., 2016). The discussion at Onjisay Aki makes clear the importance of foregrounding colonial contexts and dynamics in research and policy on climate change.

Related to the under-engagement with colonial contexts in research and depoliticization in policy arenas, are considerations around the level of engagement with and representations of Indigenous knowledge systems and ways of knowing. Usher (2000) classifies four categories of Indigenous Traditional Ecological Knowledge (TEK; here used interchangeably with IK) from a Western perspective: "(1) Knowledge about the environment; (2) Knowledge about the use of the environment; (3) Values about the environment; and (4) The knowledge system" (p. 187). Participants at the Onjisay Aki Summit illustrated the importance of engaging with IK beyond its local and environmental dimensions (Usher's categories 1 and 2), to look at the underlying value systems and ways of knowing (categories 3 and 4). While there has been significant progress made in including Indigenous peoples and their knowledges in western policy and academic arenas on environmental change over the last four decades, IK is still often regarded as a source of empirical observations rather than complex, dynamic, living systems with distinct axiologies, epistemologies, and ontologies (Watson & Huntington, 2014). This may be in part reflective of academia's tendency to fragment knowledge into disciplines and to formulate research through the assumptions of Enlightenment thought, failing to sufficiently engage non-Western subjectivities (Aporta & MacDonald, 2011; Watson & Huntington, 2014). The shift towards interdisciplinarity in research has created some space for broader conversations between academic disciplines, but much work remains to facilitate these conversations between knowledge systems (Murphy, 2011). Watson and Huntington (2014) warn that Indigenous participation in interdisciplinary climate research often continues to erase the spiritual and spatial dimensions of their wisdom, and assert that "to ensure that Indigenous peoples are not used as props in Western policy agendas, researchers must engage with non-Enlightenment intellectual traditions" on epistemological and ontological levels (p. 721). Onjisay Aki participants underlined the importance of Indigenous and

non-Indigenous peoples gaining a deeper understanding of the values, philosophies, and ways of life in which IK is embedded, through their discussions and demonstrations of the spiritual and ceremonial bases for their knowledge.

Considering that IK is embodied – that gaining knowledge is not only a matter of understanding Indigenous peoples' relationships to the natural world and all of creation, but is the relationship itself (LaDuke, 1999; McGregor, 2004; 2013) – it follows that Indigenous peoples must be leading research involving their knowledges to ensure all dimensions of their knowledge systems are included. The benefits of Indigenous-led research processes on climate change are two-fold: they allow deeper, more multi-dimensional understandings of IK on climate change to be documented than are feasible within western-led research frameworks, while also embodying self-determination and playing a role in reversing the colonial dynamics at the root of climate change. The Onjisay Aki Initiative as an example of Indigenous-led climate research is discussed further in the next section.

3.4.2 Contributions to process: A model for Indigenous-led research

Although there is increasing awareness of the need for more participatory and decolonial methods in climate change research with Indigenous communities (e.g Furgal & Seguin, 2006; Louis, 2007; Magallanes-Blanco, 2015; Murphy, 2011), research is still often guided by western researchers and Indigenous perspectives made to fit within western research frameworks (Mistry & Berardi, 2016). The Onjisay Aki Summit exemplified a novel process of Indigenous-led research on climate change, which responds to calls for a shift from community-based to community-led research in Indigenous contexts (Coombes, Johnson, & Howitt, 2014) and may provide insight for future studies. Participants discussed the uniqueness and importance of the Summit itself as a demonstration of Indigenous peoples not only participating in but leading their own governance, research, and solutions. This takes a step beyond the literature on how to best 'involve' Indigenous peoples and 'engage' with their knowledges in climate change research, to discussing how Indigenous Knowledge Keepers and communities themselves are defining and leading collaborative research and action on climate change. The approach carried out by Turtle Lodge and their collaborators reverses conventional research dynamics: every step of the initiative and process was led by the community and designed to suit their goals and needs, while their academic collaborators were invited to serve a supporting role in helping document and share the knowledge

with a wider audience. While the portrayal of Indigenous peoples in the literature on climate change has started to shift in recent decades – from helpless victims to active participants and contributors to solutions (Raygorodetsky, 2011) – the Onjisay Aki Initiative calls for a further shift to recognizing Indigenous peoples as leaders and the original stewards of these lands. The foundation of this process is traditional governance rooted in ceremonial context.

3.4.2.1 Ceremonial Context

The Summit process exemplified Indigenous leadership, traditional governance, and ceremonial context, central aspects of the climate solutions brought forward by participants. The traditional setting of the Lodge and the leadership of the Knowledge Keepers, beginning with ceremony and guiding discussion was central to the sharing process in the Summit, and reflective of ancient practices of Anishinaabe traditional governance. Ceremony allowed participants to connect with the spirit and ancestors who provide knowledge, guidance, and deeper understanding of the problems and the path forward (D. Courchene, pers. comm., May 25, 2017). Participants shared and learned why a spiritual connection is so important to Indigenous Knowledge Keepers and peoples, the spiritual realm being what inspires the dreams and visions that offer guidance and direction. Each day began with pipe ceremonies led by pipe carriers and water ceremonies led by the Grandmothers, including a special pipe ceremony with a Sacred Pipe commissioned by a national group of Elders from the four directions (see Turtle Lodge, 2017b). As well, a Thunderbird ceremony was a central part of the Summit, to reestablish and strengthen the spiritual relationship and alliance with the thunderbird spirits for the purpose of earth stewardship. Two warriors travelled to Turtle Mountain to call the Thunderbirds, which was acknowledged by heavy thunderstorms and rain immediately afterward, followed by the building of the Thunderbird nest at Turtle Lodge. In following the prophecies of their Nations, an Eagle and Condor ceremony was also held in the evening to celebrate the union of the spirits of the Indigenous peoples of the Eagle in the northern hemisphere and the peoples of the Condor in the southern hemisphere (read more and watch a video about the prophecy at http://onjisay-aki.org/prophecy-eagle-and-condor). It is said that from this union will grow a mutual collaboration and renewed relationship with the land. This union was also honoured in an Inca ceremony to plant corn seeds from Peru at the Turtle Lodge, a symbol of alliance and sharing between Indigenous Nations that modeled a way of acting in accordance with values of giving and sharing integral to human survival. On the final day of the Summit, the Onjisay Aki Calls to Action document was taken into ceremony to be spiritualized

and carried around the world through the waters. These ceremonies provided opportunities for participants and attendees to connect with spirit which guided the discussions and process.

Since Indigenous spirituality has been a site of destruction and appropriation through colonization, maintaining Indigenous spiritual practices and knowledges is an act of resistance (Pettipas, 1994; Smith, 1999). The ceremonial process and context of knowledge sharing is more suited to Indigenous knowledge systems and protocols around knowledge transmission, and may allow more and/or different information to be shared than if a researcher were guiding the discussion. In particular, maintaining the ceremonial context of knowledge transmission may allow the spiritual dimensions of Indigenous knowledge to be more fully included. As Louis (2007) describes, "from an Indigenous perspective, research, the search for knowledge, is considered to be a spiritual journey" (p. 134). The Knowledge Keepers echoed this understanding, and emphasized the spiritual part of the Summit process as the first priority. In this sense, the ways of knowing rooted in ceremony were just as important as the knowledge outcomes themselves.

3.4.2.2 Cross-cultural collaboration

Onjisay Aki also embodied the type of collaboration across cultures and geographies that participants suggest is critical in addressing environmental challenges. The Summit brought together Knowledge Keepers from Indigenous Nations across Turtle Island and around the world to share their knowledges relating to climate change – highlighting common principles, values, and observations, while providing opportunities to discuss differences and learn from one another as well. An important part of the process is the relationship-building among participants, which has allowed this collaborative work to continue and grow. This initiative could be considered what scholar Salaita (2016) terms inter/nationalism – a type of decolonial thought and practice extending beyond colonial nation-state borders, thereby rejecting settler nationalism and connecting and strengthening the struggles of colonized Nations. This aligns with Indigenous scholars Andersen (2015), Stark (2012), and others who challenge western concepts of Nation and nationhood and advocate for returning to Indigenous concepts of Nation. By bringing together Knowledge Keepers from across Indigenous Nations, Onjisay Aki also combats the exclusively 'local' and 'place-based' framing of Indigenous peoples and their knowledges in the context of climate change (Watson & Huntington, 2008; 2014). While many research studies focus on one community or region due to feasibility and/or to avoid pan-Indigenous framing, Onjisay Aki provides a unique

opportunity for documenting knowledges across cultures and geographies, reflective of the reality that Knowledge Keepers are collaborating across Indigenous Nations and state borders.

Additionally, the Summit included invited non-Indigenous participants and witnesses to bring together different knowledges and facilitate learnings. Adoption ceremonies were held for non-Indigenous participants to bring them into the ceremonial family and connect them spiritually in relationship to the Earth itself. With these adoptions came obligations – duties and responsibilities for those adopted to conduct themselves according to the traditional values and spiritual and natural laws of the land as shared by the Knowledge Keepers. While the process and discussions were led by Indigenous Knowledge Keepers, the participation of settlers and immigrants were recognized as important in bringing together the human family and providing opportunities for them to learn from the original leaders and stewards of these lands.

3.4.2.3 Limitations of the process

While the Summit provided a unique and valuable opportunity for knowledge sharing, there are nonetheless some limitations of the process from the perspective of research, and lessons learned for future studies. Sharing knowledge in a talking circle in the Turtle Lodge reflects the oral tradition of many Indigenous Nations, however this knowledge is distanced to a degree from the context in which it was originally shared to be documented here in writing. It is also brought into conversations with the academic literature in this paper. Thus, the process is not entirely exempt from the knowledge isolation and fragmentation of academia that we critique herein. Video methods were used to mitigate some of these challenges by allowing the voices of participants and context to be shared directly. Another limitation arose around language; understanding the knowledge shared in Knowledge Keepers' native languages was limited to those at the gathering who knew the language, and was only included in the present analysis to the extent that it was translated by the Knowledge Keepers while they were speaking. Ability to translate was limited by time, resources, and practicality, due in part to the many different languages around the table. While most of the discussion took place in English, many participants emphasized that the process of speaking in English greatly limits the knowledge that can be shared. With these considerations, the results shared here reflect only part of the discussion, and not the full depth and dimensions of the stories and knowledges shared across Nations. The challenges associated with respectfully and collaboratively documenting and communicating IK in the context of climate and environmental research have been well-documented (Aporta, 2011; Aporta & MacDonald, 2011; Berkes, 2009;

Brewer & Warner, 2015; Golden, Audet, & Smith, 2014; Louis, 2007; Mistry & Berardi, 2012; 2016; Murphy, 2011; Riewe & Oakes, 2006; Williams & Hardison, 2013; Watson & Huntington, 2014). The present study is not immune to these challenges, and recognizes that while the researchers strived to follow the lead of the community and meaningfully engage with Indigenous epistemologies in designing and carrying out the research, their work is still informed, in part, by their western worldviews and positions within the academy.

3.5. Conclusion

> *I feel that the world has come to a point where the Indigenous knowledge, and the way that we relate to Creator, mother earth, and this creation, is the last remaining solution for finding balance on this earth, and to addressing climate change issues.*
> (Alvin Manitopyes, Onjisay Aki Summit participant)

Research on the human dimensions of climate change in Canada has rapidly expanded in recent decades, as scholars and society at large have shifted our perceptions of climate change from a physical problem of the environment to one that deeply impacts, and is impacted by, humanity. Literature on Indigenous knowledge and perspectives on climate change has grown within the human dimensions of climate change field in Canada, and along with it a critical discourse on the framing of Indigenous peoples and knowledges, the colonial contexts and dynamics of research, and the epistemological differences in knowledge systems. New insights into perspectives and process in this field have been brought forward by Turtle Lodge's Onjisay Aki Initiative, addressing many of these critiques by creating a unique opportunity for knowledge sharing and research on climate change with Knowledge Keepers from Nations across Turtle Island and around the world. The discussion at the Onjisay Aki Summit brought forward an understanding that climate change is a symptom of a problem with the human condition and values, and thus we must engage Indigenous knowledge systems in their entirety – particularly the underpinning values, spiritual dimensions, and philosophical bases – to bring about a social shift and better understand the path forward. Participants discussed how the negative human values underlying climate change are rooted in colonialism, and predicated on the dispossession of Indigenous peoples' lands and oppression of their ways of life. Thus, the solutions brought forward were rooted in Indigenous nationhood and self-determination, supporting connection with their traditions, cultures, knowledges, and lands that western activities and ideologies have physically, mentally, and emotionally aimed to displace and/or destroy. From this foundation, participants emphasized the

importance of collaborative actions among people from all backgrounds to connect to the land and spirit, and share knowledges to address the larger injustices underlying climate change.

The holistic perspective of the social and economic systems driving climate change brought forward at the Summit has significant implications for guiding action and research. In stark contrast to the framing of climate change as an issue of the environment, or one that can be addressed through technical and technological intervention, the Knowledge Keepers contend that it is principally social change that is needed – "a change of the heart." This suggests actions should be taken to not only address the problem at its surface (for example, by replacing conventional with alternative energy sources to reduce greenhouse gas emissions) but also to shift societal values and behaivours underlying the problems (for example, by supporting land-based education and training to decrease use of and reliance on external energy sources). This perspective on the connections between social and environmental problems brought forward by the Knowledge Keepers is not often captured in the literature, and can provide critical guidance for policy and solutions that promote co-benefits and aim to address the root problems.

Further, emphasizing the inherent and causal link between colonialism and climate change reiterates the need to find ways of doing research and documenting IK on climate change that reject colonial dynamics and characterizations of Indigenous peoples. Of course, this is not to overlook or dismiss the historic and ongoing role of academic knowledge production in the colonization of Indigenous peoples, but to explore what true reconciliation in research might look like. With increasing interest in, and funding support for, research in this field, it is a vital time to think critically about research methods and approaches. As is argued herein, the Onjisay Aki initiative provides new insights for research processes led by and for Indigenous peoples. Foundational elements of the process are traditional governance rooted in ceremonial context, providing opportunities for Indigenous-led cross-cultural collaboration. In this respect, the project raises important questions for future research, such as: what is and is not considered research on climate change? what language is being used to discuss climatic and environmental changes, and how does this interface with different knowledge systems? what epistemologies are informing the research design and process? what venues for knowledge sharing are most effective in receiving, learning and understanding Indigenous knowledge? what are the protocols of approaching Indigenous Knowledge Keepers to engage them in sharing their knowledge? how can ceremonial contexts be honoured in research processes? Based on the results shared here, we suggest several

principles to be particularly mindful of in research and knowledge sharing processes in this field: (1) to respect, follow, and engage with ceremonial protocols and contexts associated with knowledge sharing in Indigenous communities; (2) to acknowledge IK as complex and dynamic systems and processes, and to strive to engage with their epistemological and ontological dimensions; (3) to recognize IK as equally valid and valuable alongside western scientific knowledge; (4) to be and remain flexible as researchers and institutions in research approaches, striving for inter-epistemological research that allows the process to be influenced and guided by non-western ways of knowing where possible.

Finally, while we have outlined herein the novel contributions that the Onjisay Aki gathering has made to this field of research, we recognize that these practices of knowledge sharing are rooted in ancestral ceremonies and traditions and have been carried out in fulfillment of ancient prophecies (Turtle Lodge, 2017c). The Turtle Lodge is situated at approximately the geographic centre of Turtle Island, a region which has been a significant meeting place for Indigenous peoples for generations. The Canadian name for this region, Manitoba, likely comes from the Anishinaabe name for the sacred site in this region, Manito Api, meaning "where the Great Spirit sat" (D. Courchene, personal communications; **Fig. 14**). In Anishinaabe creation stories, this is where the first life began and there is a belief that what happens in this place is instructive to what happens everywhere else on Turtle Island (N. Sinclair, lecture, Aug 8, 2018). Through the Onjisay Aki Initiative, the Turtle Lodge community and the Knowledge Keepers they convened are following in the footsteps of their ancestors and setting an example for people across Turtle Island, bringing forward ancient ways of being and knowing in a spirit of generosity and shared responsibility.

Figure 14. Manito Api, an ancient sacred site in eastern Manitoba, has been a gathering place for First Nations peoples to share knowledge and seek connection for thousands of years

CHAPTER 4: "A RETURN *TO* AND *OF* THE LAND" INDIGENOUS INITIATIVES ON CLIMATE CHANGE ACROSS THE CANADIAN PRAIRIES

Figure 15*. Several of the Indigenous initiatives in the Prairies included in this project*

"A RETURN *TO* AND *OF* THE LAND": INDIGENOUS INITIATIVES ON CLIMATE CHANGE IN THE CANADIAN PRAIRIES

Abstract

There has been growing engagement and collaboration between Indigenous communities and researchers on climate change in Canada, the vast majority of which has taken place in the Arctic. Relatively little work has sought to document Indigenous perspectives and knowledges on climate change in the Canadian Prairies, a gap which this paper aims to address. Herein an Indigenous community-based research approach was adopted which employed semi-structured interviews and participatory video to explore some of the ways in which Indigenous peoples in the Prairies are experiencing, understanding, and responding to climate change, and how their stories can be mobilized within and beyond the academy. Ten video interviews were conducted with members of eight communities in Nations across the territories of Treaties 1, 4, 6, 7, and 8. An integrated process of video editing and qualitative content analysis of transcripts was conducted and eight short videos were produced, which are included here. The results indicate that participants across diverse Nations and territories are experiencing changes in their environments – resulting from combined and compounding impacts of industrial development, climate change, and other colonial influences – which have significant impacts on their social and cultural well-being. At the same time, communities are pursuing a range of solutions – such as land-based and cultural education initiatives, community-based renewable energy projects, grassroots action and activism, cross-cultural dialogues, and ecological restoration initiatives – which serve to address interrelated environmental and social problems. Across these solutions, six common themes emerged: exemplifying Indigenous leadership; building capacity and self-sufficiency; generating sustainable economic development; connecting with and sharing Indigenous knowledge; connecting with and learning from the land; building relationships and bridging Indigenous knowledge and western science. While it is increasingly recognized as critical to heed Indigenous voices on climate change, this paper makes a significant contribution to understanding the diversity and parallels in the ways in which Indigenous communities are being impacted by and responding to climate change in the Prairies, as well as collaborative and creative methods for sharing these perspectives across cultures and geographies.

4.1. Introduction

Despite centuries of oppression and genocidal attacks (Gross, 2014), many Indigenous peoples of Turtle Island have maintained their traditional knowledges and ancestral ways of being, and are bringing them forward to address the environmental crises of today. There has been growing recognition of the unique and valuable insight of Indigenous peoples and their Indigenous knowledge (IK) in the context of climate change in political and academic arenas over recent decades. Indeed, climate change scholars are increasingly engaging IK through collaborative initiatives between researchers and Indigenous peoples, which have helped document climate impacts and identify opportunities for adaptation and mitigation. In Canada, the majority of this research has taken place in the Arctic, where the impacts of climate change on northern communities and landscapes have been the earliest and most drastic (e.g. Aporta et al., 2011; Berkes & Jolly, 2002; Cuerrier et al., 2015; Furgal & Seguin, 2006; Krupnik & Jolly, 2002; Laidler, 2006; Nichols et al., 2004; Pearce et al. 2015; Riedlinger & Berkes, 2001). Inuit and northern peoples have, in some ways, become the global face and story of climate change that has humanized the narrative and countered the globalized western discourse on this issue (Martello, 2008; Smith, 2007; Watt-Cloutier, 2015).

While there has been extensive collaboration and documentation of IK in the North, there are fewer studies from communities south of the 60th parallel, particularly in the Canadian Prairies. This geographic gap in the peer-reviewed literature on IK and climate change is particularly significant considering that the Prairies are expected to be one of the most severely climate-affected regions in Canada in the coming decades (Sauchyn, 2010). The Prairies have some of the most variable climates in the world and scientific projections predict that this variation will be amplified by climate change, creating even greater departures from historically normal conditions (Prairie Climate Center, 2017; Sauchyn, Diaz, & Kulshreshtha, 2010; Sauchyn & Kulshreshtha, 2007). Based on the literature reviewed, there are only a few studies that focus specifically on Indigenous perspectives on climate change in the Prairie region, such as those by Magzul (2009), Pittman (2009; 2010), and Ermine and Pittman (2011) which examine vulnerability and adaptive capacity in the communities of Blood Tribe, James Smith, and Shoal Lake First Nations. Additional "grey literature" exists – non-peer-reviewed reports from communities, governments, non-governmental organizations, and other agencies – such as those written by the Prairie Adaptation Research Collaboration (e.g. Ermine & Prince Albert Grand Council, 2004; Ermine,

Sauchyn, Vetter, & Hart, 2007; Ermine, Sauchyn, & Pittman, 2008), the Center for Indigenous Environmental Research (CIER) (e.g. AFN & CIER, 2006; CIER, 2007; CIER & UBC, 2011), and some others (e.g. Wittrock et al., 2008). For instance, in 2012 the CIER facilitated a gathering of Indigenous leaders in climate adaptation from across the continent, to discuss and share solutions in a three-day forum which brought together 55 people from 7 provinces, 3 territories, and 4 states in Akwesasne First Nation (CIER, 2013). Many communities have also undertaken to produce their own environmental or climate plans, such as the Athabasca Chipewyan First Nation's stewardship strategy *Níh boghodi: We are the stewards of our land* (ACFN, 2012). These reports demonstrate the impacts of climate change for Indigenous communities and environments in southern Canada, as well as their observations, vulnerabilities and adaptive capacities. However, few of these studies and reports focus on Indigenous-led solutions to the climate crisis.

Documenting and understanding Indigenous knowledge, perspectives, and solutions to climate change is critical, not only in helping western society 'solve' the problem of climate change, but also to strengthen the self-determination of Indigenous communities in addressing the challenges climate change brings to their lands and livelihoods (Whyte, 2017a). Unfortunately, the publication trend to date often only recognizes and includes IK in climate research when it is seen as valuable to inform western priorities and solutions. And, in part, because capacity and training opportunities that truly support Indigenous peoples conducting their own academic research based on their worldviews and ontologies is a relatively new area (Bullock et al., 2017). Thus, there is very little academic literature published specifically with and by Indigenous communities regarding their own climate solutions.

Indigenous communities are often burdened with the direct impacts of fossil fuel and resource extraction; yet many of these same communities are standing up in resistance to destructive development and paving the way for alternatives (LaDuke, 2014; Lowan-Trudeau, 2017b). Winona LaDuke (2014) describes how Indigenous communities, guided by their traditional teachings of intergenerational equity and respect, are "building an economics for the seventh generation." For example, Indigenous communities across Canada are pursuing renewable energy development (e.g. Krupa, 2012a; Krupa, Galbraith, & Burch, 2015; Ozog, 2008) and land-based activities and education initiatives (e.g. Ballantyne, 2014; CIER, 2005; Lowan, 2007) as ways to mitigate environmental impacts and strengthen self-sufficiency and cultural connections to land. Many First Nations, Inuit, and Métis communities have demonstrated leadership and resilience by

initiating solar, wind, and small-scale hydro projects, with an estimated 300 Indigenous clean energy proposals and projects documented to date in 194 communities across the country (indigenousenergy.ca). These projects have been mapped by Lowan-Trudeau and colleagues as part of the Indigenous Renewable Energy initiative (**Fig. 16**). Such community-driven and environmentally sustainable projects illustrate some of the ways in which communities are drawing on both Indigenous and western paradigms to forward goals of energy sovereignty, arguably exemplifying pathways to what Corntassel (2008) calls 'sustainable self-determination.' While several of these case studies of Indigenous renewable energy projects in BC and Ontario have been documented in the literature (e.g. Krupa, 2012a; Moore 2013; Ozog, 2008), few have been fully documented across the Prairie region.
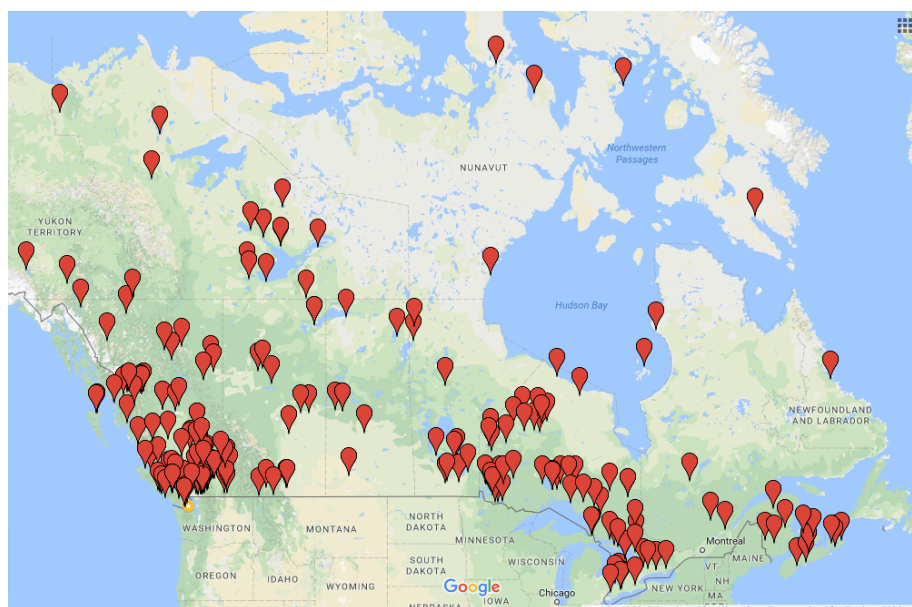
Figure 16. *A map of Indigenous renewable energy projects in Canada (as of Fall 2016) from indigenousenergy.ca*

This research seeks to address the geographical gap in the literature of IK on climate change in the Prairies. Our specific research questions include:

(1) what are some of the ways in which Indigenous communities in the Prairies are experiencing, understanding, and responding to climate change?; and

(2) how can participatory video methods be used to help share communities' stories within and beyond the academy?

The research team engaged and collaborated with participants from Indigenous Nations across the Prairies to answer these research questions. Our research approach combined Indigenous

research with community-based and visual methodologies designed to honour and extend the reach of community voices and knowledge across the Canadian Prairie landscape.

4.2. Methodology and methods

With recognition of the importance of documenting and engaging with Indigenous knowledge and solutions to climate change through research, come important considerations with respect to the context and methods of knowledge exchange. As the literature on IK and climate change has proliferated in recent decades, a critical dialogue has emerged on the limitations, weaknesses, and critiques of engaging with IK through academic literature. IK is embedded within a worldview that is epistemologically different from western scientific knowledge; in contrast to western positivist knowledge which claims to be universal, detached, and transferable, IK can be understood as dynamic, place-based process that contains material dimensions as well as foundational spiritual dimensions (Battiste & Henderson, 2000; Berkes, 2009; Johnston, 2003). Smith (1999) contends that "[t]he values, attitudes, concepts, and language embedded in beliefs about spirituality represent, in many cases, the clearest contrast and mark of difference between indigenous peoples and the West" (p.74). These fundamental differences in the knowledge systems and ways of knowing present important considerations, and in some cases limitations, to the documentation and sharing of IK in the context of research. Williams and Hardison (2013) discuss the complex social, cultural, legal, risk-benefit and governance contexts of knowledge exchange, advocating for measures to implement free prior and informed consent (FPIC) for decision-making and exchange of IK for climate change adaptation. Other critiques and considerations raised in the literature include: the traditionally oral nature of many Indigenous societies; epistemological differences between western researchers and Indigenous Knowledge Keepers; the context in which IK is recorded and presented; the accessibility of the knowledge; representations of Indigenous peoples in climate discourses; and issues of power and voice in research with marginalized communities (Aporta & Macdonald, 2011; Martello, 2008; Mistry & Berardi, 2016; Spivak, 1999; Watson & Huntington, 2014; Williams & Hardison, 2013).

In response to these considerations, some studies have pursued alternative methods beyond academic writing for documenting IK on environmental change, such as through oral history projects (e.g. Igloolik Oral History Project) and participatory and documentary video (e.g. Willox et al., 2015; Kunuk & Mauro, 2010). It has been suggested that such audio and visual methods

better align with oral traditions of Indigenous societies, and may be an effective tool for bridging cross-cultural understandings (Aporta & Macdonald, 2011; Baele, 1994; Halseth et al., 2016). Addressing criticisms with representation of Indigenous communities in conventional research, methods such as participatory video enable communities to play an important role in representing themselves and deciding which images are produced and included (Evans & Fosters, 2009; Magallanes-Blanco, 2015; Mistry & Beradi, 2012; Mitchell, 2011). Furthermore, the integration of interviews and visual information merges verbal and non-verbal data, which is otherwise lost in transcriptions or written text (Crichton & Childs, 2005). Video methods can allow more dimensions of participants' presence to be expressed: their physical bodies and voices, their language, and their cultural and geographic context. A combination of these methods was used to study IK and climate change across the Prairies.

Ten interviews were conducted with members of communities in Nations across the territories of Treaties 1, 4, 6, 7, and 8 in July 2017 (**Fig. 17**). Participants were Blackfoot from Kainai First Nation; Cree from Montana First Nation and Lubicon Lake First Nation; Woodland Cree from Amadu Lake; Cree and Saulteax from Cowessess First Nation; Dënesųłiné from Athabasca Chipewyan First Nation; Métis from the Northern Village of Green Lake; and Anishinaabe from Sagkeeng First Nation (**Table 2**). These participants were identified through existing relationships of members of the research team and snowball sampling (Maxwell, 1996), with the general criteria being community members that were working on climate-related initiatives and were interested in collaborating. This was not aimed to be an exhaustive or representative sample of Indigenous communities in the Prairies, but rather an exploratory study to illuminate some of the experiences of peoples on the frontlines of climate change and associated Indigenous-led solutions. The research team conducting fieldwork – consisting of Laura Cameron (a settler-descendant Masters student), Kevin Settee (an Anishinaabe undergraduate student), and Marcel Kreutzer (a settler-descendant videographer) – travelled to communities in July 2017 and conducted a series of semi-structured interviews (while Ian Mauro, a settler-descendant Professor supervised and supported from afar). While main topics and sample questions were prepared in advance, they were not strictly adhered to, and conversations were allowed to evolve and new questions emerge (Dunn, 2005). Interview questions all related to the research questions, but were tailored to the participant depending on their specific project, position, and/or experience. In addition, the interview methods were chosen with consideration of place, recognizing how place

shapes the knowledge produced (Peters, 2017). Interviewing people in their local geographies can influence both what they share, and how that knowledge is understood by the audience. Particularly important in film interviews, location gives context and adds depth to the stories shared. In advance of some interviews, tobacco was passed to knowledge holders in recognition of the traditional protocol around knowledge sharing in their Nations. The interviews were conducted in conjunction with the Prairie Climate Center's Climate Atlas of Canada (climateatlas.ca), a larger project aiming to capture diverse voices and stories on climate change across the country.
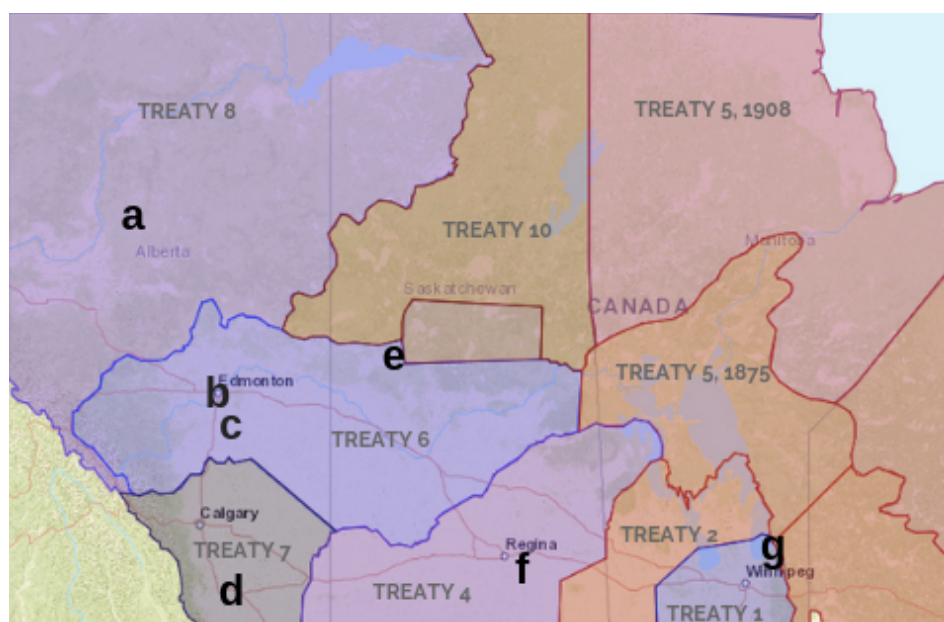
Figure 17. *Map of the Treaty territories in the Canadian prairies (source: native-land.ca) with the interview locations: (a) Lubicon Lake First Nation (b) Edmonton (c) Montana First Nation (d) Lethbridge (e) Northern Village of Green Lake (f) Cowessess First Nation land (g) Sagkeeng First Nation*

Table 2. *Participants, interview location, home community, Nation, province, and role in the context of the research. Interview locations correspond to the study area map (Fig. 17)*

Participant name	Interview location		Home community (if different)	Nation	Prov	Role/position
Melina Laboucan-Massimo	a	Lubicon Lake First Nation		Cree	AB	Community member, Indigenous Knowledge and Climate Change fellow with the David Suzuki Foundation
Billy-Joe Laboucan	a	Lubicon Lake First Nation		Cree	AB	Chief of Lubicon Lake Nation
Leonard Cardinal	a	Lubicon Lake First Nation	Amadu Lake	Woodland Cree	AB	Knowledge Keeper, Founder of Thunderbird Traditional Land-based Teachings Inc
Eriel Tchekwie Deranger	b	Edmonton	Athabasca Chipewyan First Nation	Dënesųłiné	AB	Executive Director of Indigenous Climate Action
Vickie Wetchie	c	Montana First Nation		Shoshone-Bannock/Cree	AB	General Manager, Green Arrow Corporation Akamihk, & Economic Development Manager for Montana First Nation
Leroy Little Bear	d	Lethbridge	Blood Reserve (Kainai First Nation)	Blackfoot	AB	Scholar and Professor at the University of Lethbridge, member of the Indigenous Wisdom Advisory Panel for the Government of Alberta
Ric Richardson	e	Northern Village of Green Lake		Métis	SK	Mayor of the Northern Village of Green Lake
Cadmus Delorme	f	Cowessess Wind Site	Cowessess First Nation	Cree/Saulteaux	SK	Chief of Cowessess First Nation
Lionel (Rook) Sparvier	f	Cowessess Wind Site	Cowessess First Nation	Cree/Saulteaux	SK	Councilor and former Director of Economic Development for Cowessess First Nation
Dave Courchene	g	Sagkeeng First Nation		Anishinaabe	SK	Knowledge Keeper, founder of Turtle Lodge

Interviews were documented on video and short videos were made using a modified participatory video (PV) approach that allowed community members to shape the narrative and have influence over how the messages were conveyed and presented. In academia, PV as a method has grown popular in part due to the increased desire for more emancipatory and decolonizing methodologies (Milne, Mitchell, & De Lange, 2012). Our modified PV approach draws on the *community-collaborative approach* developed by Elder and Kamerling (1995). The approach was guided by several principles: (1) relinquishing control of the project direction and outcomes to the community; (2) community self-determination, through community control over representation

and empowerment; and (3) community ownership of footage and video(s) produced (Elder, 1995; Gubrium & Harper, 2013). The videos were created through an iterative process of participant feedback, and the participants had final approval of the videos, ownership, and control over their dissemination, in accordance with OCAP principles (www.fnigc.ca/ocap).

The interviews were transcribed in full, and content analysis was conducted to identify themes and patterns within each interview (Patton, 2002; Massey, 2011) through an integrated process of video editing and transcript analysis. Video interviews were watched first and themes were identified and organized through the keyword function in video editing software Final Cut Pro. Memos and notes on themes and ideas were also created during the process, outside of the video editing program. This produced a primary list of themes for each interview, at which point the researchers reviewed the transcripts twice to confirm and add to each list. Once the main ideas were identified for each interview, ideas and themes were compared across interviews to illuminate similarities, differences, and other patterns. The researchers did not develop a single coding scheme to analyze all interviews due to the different Nations and knowledge systems of participants. Videos were created from the main themes of each interview, and sent to participants for feedback and to ensure that the videos produced were reflective of their ideas and input, further affirming the process and associated results. The videos are shared along with the written results of the content analysis in the following section.

4.3 Results

4.3.1. Impacts: Climate change and identities

When asked about the changes they have witnessed, most participants reflected upon and referenced their own experiences growing up on or close to the land. All participants noted changes in their environment. As Leonard Cardinal described, "There's been a lot of big change since I was a young child because we live close to the land. We drink the water from streams, from the musk, from the lakes… We watch the animal behavior, even the trees." Vickie Wetchie noted that "climate change is here. I can feel it, I can sense it, I can see it…". Almost all participants described changes in the weather, such as warmer temperatures and more "erratic" weather, while several participants from Nations in Alberta emphasized increasing winds. Some people also talked about extreme events in relation to environmental changes, such as increased forest fires (e.g. Fort McMurray of 2016; and Slave Lake in 2011), as well as flooding (e.g. Calgary floods of 2013).

Other changes in the environment and landscape noted include: lower air quality from industrial pollution; increased earthquakes from fracking; and contamination from oil spills.

Another common theme was changes in animal and plant species: changes in caribou, bison, moose, and bird migratory patterns; decline in moose, rabbit, and fish populations; new/invasive species and their impacts on native plants and animals; increase in algae in lakes; and contamination in animals (e.g. fish, moose) and plants (e.g. berries, medicines). Several people commented on the decrease in abundance and reliability of culturally-significant plant species, such as medicines, berries, and sweetgrass, having the combined effects of negative health impacts as well as disruption of cultural practices and traditional knowledge pertaining to those species.

One of the most common concerns across communities was not having safe drinking water, with Melina Laboucan-Massimo remarking for example "we can't drink the water anymore" and Chief Cadmus Delorme explaining "one of the biggest challenges when it comes to climate change… is water." Elder Dave Courchene talked about the changes his community has witnessed in the waters of Lake Winnipeg which they have depended on for generations: "All the waters from the east, the west, and the south empty into Lake Winnipeg, so we get all the waste, the chemicals that are used on the farms, all of that eventually ends up into our waters." Other impacts discussed related to changes in water included: decreased precipitation, lower water levels in lakes and rivers, increased water temperatures in lakes, water pollution and contamination, and overall drought causing dryness of the land.

From an understanding that they are related to the earth and all living beings, common across many Indigenous cultures, participants described the immense impacts and risks climate change poses to their identities. As Melina Laboucan-Massimo articulated: "we are the land and the land is us, there is no separation." And, Eriel Tchekwie Deranger similarly stated, "we are of the land. Dënesųłiné means 'of the land,' Denendeh is 'people of the land.' These are who we are, and you can't separate it." Deranger explained what environmental impacts mean for her community of the Athabasca Chipewyan First Nation:

> *When you damage the delta where we come from, when you compromise it in any way, either through water withdrawals from the oil sands, or through precipitating the amount of greenhouse gas emissions in order to have massive climate change, you are effectively*

damaging the ecosystems that are a part of who we are. A land use plan framework looks at the land as something separate, and they never calculate… the human interaction of Indigenous peoples' cultures and identities in developing those frameworks.

In this light, the impacts of climate change on the land are not something relegated to realm of the 'environment' but are deeply human; when one species or area is changed that can have great impacts on Indigenous identities. For example, Leroy Little Bear described how removal of the buffalo from his ancestral territory has made him "a whole lot less Blackfoot." Leonard Cardinal spoke of the history and cultural significance of certain places on the land, which have been disrupted through development:

We used to have trails there that were there for thousands and thousands of years… That's where our history, our people migrated through those trails to the rivers…[Now] those trails are all broken, they're lost. Camping areas, traditional areas. With that clear-cut logging… a lot of that history there is kinda disappearing.

On this note, many community members discussed the linked impacts of industrial development in their territories, such as tar sands and other oil and gas development (extraction, through open-pit mining and fracking, as well as transportation), logging, industrial agriculture, and mineral mining. For example, Eriel Tchekwie Deranger talked about the impacts of uranium mining on her family's traditional trapline in northern Saskatchewan, Chief Delorme discussed the contamination of water sources through fossil fuel extraction, Chief Laboucan talked about the impacts of logging on moose and other wildlife habitat, and Melina Laboucan-Massimo talked about the health effects of tar sands industry on her community.

Some people expressed concern that because of these changes, future generations will not have the same opportunities and experiences out on the land as they had growing up. As Vickie Wetchie described: "There is a lot of things that have changed, and a lot of experiences that I had as a kid that our grandkids are probably not going to have." Eriel Tchekwie Deranger shared a similar sentiment:

There's a huge risk that the amount of damage that is happening, and climate [change] that's happening, is going to disconnect this new generation from being able to experience the things that I experienced as a child: hauling water to drink every day. building a fire in the morning. going out and checking the fish nets.

In general, there was an understanding shared by many community members that climate and environmental changes are interacting with and compounding other threats to their cultures, identities, livelihoods, and security, particularly the legacies and ongoing impacts of colonialism. Communities are concerned not only with environmental integrity, but with their economic security, cultural survival, health and safety.

4.3.2. Problems: Disrespect and disconnection from Mother Earth

Understanding climate change from an Indigenous perspective, Leroy Little Bear explained, begins with an understanding of the Indigenous paradigm that "everything is animate… everything has a spirit." Participants contrasted their worldviews and embodied connections with the land to that of a western worldview, which views the land as inanimate and humans as separate from, and superior to, nature. Some participants shared beliefs that these western ideologies and separation are at the root of the ecological imbalance that humanity faces today, treating lands and resources as commodities without considering the costs to the environment and social impacts to Indigenous peoples. This separation has distanced people from the land, and some said has also created divisions and competition among people. Dave Courchene described the root of the problem as disrespect, for the earth and for each other, saying humanity has "become obsessed in our minds with power, and having these values of greed that are destroying us." Eriel Tchekwie Deranger linked this mindset of human control over the environment to patriarchy: "climate change is an imbalance… and I think patriarchy is part of that… Man's domination over nature is sort of the foundations of capitalism; it's like everything can be exploited and commodified. And I think a lot of that has happened because of the imbalance of the powers between men and women."

The ways in which these western ideologies have been perpetuated through historic and ongoing instruments of colonialism – such as residential schools and public education systems, the reserve system, and government legislation – were also discussed by many. As Melina Laboucan-Massimo described: "The reserve system and the Indian Act have really separated people into these little confined spaces… [and] have really severed our connection in that way to our cultures and traditions…" Chief Laboucan, Eriel Tchekwie Deranger, Dave Courchene, and others discussed how the tools of colonization which aim to disconnect Indigenous people from their cultures and lands, are directly linked to the environmental and climate changes they are

witnessing. For example, Chief Laboucan described how colonial government legislation has been designed to appropriate Indigenous resources and accommodate industry: "With a lot of the different laws like the Natural Resources Transfer Act, 1930, they just more or less took over our lands and resources…" At the same time, some community members expressed more understanding or gratitude towards state governments. Leroy Little Bear shared a belief that governments are in a difficult position: "[The Alberta Government is] caught between a rock and a hard place… On the one hand, yes, our government really wants to do something about the environment… But then, on the other hand, we depend on royalties from oil and gas." Others such as Vickie Wetchie, Cadmus Delorme, and Lionel Sparvier applauded the support of the provincial and federal governments for community-based solutions, as discussed below.

4.3.3. Solutions: Reconnecting and relating

While some community members discussed mitigating greenhouse gas emissions and shifting energy systems, others discussed more holistic solutions to climate change and the broader, related problems based on reconnecting with the land and rebuilding relationships between Indigenous communities and among all of humanity. Some participants explained that taking action to reconnect explicitly aims to repair and heal the disruptions and disconnections caused by colonialism. Solutions were described as acts of resurgence, re-empowerment, revitalization, reconnection, and decolonization. Eriel Tchekwie Deranger said, "I think that real climate solutions are not caught up in maintaining the status quo of capitalism, of colonialism… that real climate solutions are rooted in a return to the land, a return to and of the land, and are rooted in decolonization." Across communities it was clear that people were bringing forward solutions not only to address climate change, but to work to better the broader social and environmental circumstances for their communities. As most people discussed, their communities are facing many existing and more immediate issues than climate change, and therefore are pursing solutions that offer other benefits – from providing employment and economic development, to inspiring education, to strengthening community culture and pride. In this sense, for many it is not just about mitigating environmental impacts, but is about re-establishing Indigenous peoples' identities and working for justice for their communities. In discussions of solutions, community members drew on their experiences in five areas of action: (1) land-based and cultural education, (2) community-owned renewable energy projects, (3) grassroots action and activism; (4) cross-cultural dialogues;

and (5) ecological restoration initiatives. Case studies and results for each area are discussed in the below, followed by a discussion of themes across participants

4.3.3.1 Land-based and cultural education

The research team was invited to participate in and learn about Lubicon Lake First Nation's land-based culture camp (**Fig. 18**). Chief Billy-Joe Laboucan, community member Melina Laboucan-Massimo, and Knowledge Keeper Leonard Cardinal explained that the camp was about reconnecting to the land and to their identity, through teaching traditional skills, activities, and protocols (e.g. drying and smoking meat and fish; beading and dress making; drumming and drum-making; canoeing; storytelling; conducting and participating in sweat lodge ceremonies). It was also about teaching leadership, transferring knowledge from Elders to youth, and creating a positive healing space for the community. It was the fourth year of the camp, and was a memorial camp for Bella Laboucan-McLean, a community member who passed away in 2013. Melina described the significance of the camp to her:

> *This type of Culture Camp and being out on the land is a type of resurgence. It's a type of re-empowerment and reconnection to who we are as indigenous people... Because the colonial imposition and the colonial laws have really severed our connection in that way to our cultures and traditions, because they haven't been passed down. That's why it's so important to have Culture Camps like this.*

Leonard Cardinal, founder of Thunderbird Traditional Land-based Teachings Inc., was there helping at the camp and explained how land-based learning is important for young people especially, to connect with their identity of who they are, to bring out their strengths, to find their gifts, and to understand that they have a purpose. It can also prepare them for the future, to be more self-sufficient and less dependent on systems that are harming the earth. This learning has benefits for people from all walks of life, he explained:

> *Land-based learning teaches you how to connect to your environment, how to respect the plants, the animals and your surroundings, because you need your surroundings to exist… It helps you to reconnect to who you should be, not who somebody wants you to be…. Land-based teachings teaches you to be more of a community to help one another out for the betterment of your environment.*

For Chief Laboucan this camp was a step towards returning to their Indigenous knowledge through traditional ways of learning, thereby regaining control over their own education.

Figure 18. *Video stills from the Lubicon Lake's land-based culture camp video*
https://bit.ly/2xJywqd

4.3.3.2. *Community-owned renewable energy projects*

The researchers also spoke with several communities that have pursued community-owned renewable energy development: Montana First Nation, Lubicon Lake First Nation, Northern Village of Green Lake, and Cowessess First Nation (**Fig. 19**). All four communities expressed an understanding that renewable energy development aligns with Indigenous philosophies, principles, values, and responsibilities. As Mayor Ric Richardson explained:

> *Our people, the Métis and the First Nations, have used the opportunities presented by nature for time immemorial. Whether it's drying berries using the sun, drying meat, drying fish. Many different things have been a product of recognizing the opportunities in the environment and taking advantage of them. So it wasn't a stretch at all when we started talking about renewable energy to the community.*

Discussing their community-owned and operated solar energy company in Montana First Nation, Green Arrow Corp., General Manager Vickie Wetchie described the process as "going back to renewables, going back to low impacts. And thinking that way, "scientifically" but not really, because that's just how we were already. It aligns with our values, it aligns with things that we already believe in, and protocols and traditions, they match."

Other motivations and benefits of the projects discussed by community members included: providing local training and employment for community members in sustainable industries; contributing to energy sovereignty and lowering reliance on the grid; lowering dependence on boom-and-bust economies and industries; providing a more reliable energy source for remote communities; providing a demonstration of alternatives, serving to inspire community members and others; economic profit and/or savings for the community from energy production; providing an avenue for communities to participate in the economy; instilling pride in the community; and lessening their impact on the land and water. The importance of partnerships – with governments, research institutes, business consultants, non-profits, and other organizations – were emphasized across communities as well. At the same time, there were different comments on the role and support of government, with some applauding government support for community renewables projects, and others expressing a desire for better government policies to support decentralized energy systems. For example, Ric Richardson expressed a desire for the Crown corporation SaskPower to raise their limitations on the amount of power that community grid-tied energy systems can sell into the grid. Reported challenges in the projects varied across communities, including: securing the capital for the initial infrastructure investment; issues of land jurisdiction; limitations of power purchasing agreements; securing buy-in from Band councils and community members; and delayed timelines. Several participants also mentioned the negative environmental impacts of renewables, though less than non-renewable sources. Nonetheless, all four communities reported positive experiences and are each undertaking or are interested in pursuing more renewable energy development in future.

Figure 19. *Still images from videos highlighting community renewable energy projects:*
(1) Montana First Nation's community-owned solar company. https://youtu.be/Q2g6MdOFfR8
(2) Lubicon Lake First Nation's Pitipan solar project. https://youtu.be/1zocSLaQl64
(3) Community solar in the Métis village of Green Lake https://youtu.be/ZRpAncrfMbE
(4) Cowessess First Nation's wind battery project. https://youtu.be/kkZwh4o6ehU

4.3.3.3. Grassroots action and activism

While these land-based cultural education and renewable energy projects are examples of community-led initiatives, Eriel Tchekwie Deranger spoke more broadly about the importance of community-led and grassroots action for decolonial climate solutions (**Fig. 20**). Changes in discourse and policy – from the international to the local level – do not happen automatically; they are the result of people standing up for their rights and making their voices heard, Eriel said. She explained why this type of action is particularly important for Indigenous peoples:

> *Grassroots activism here on the local level is going to be super critical because, we have to stand up against the injustices that we see on the land. Because as Indigenous people, the injustices that we see for our people, are injustices against the land, because it's one and the same... So, I think that grassroots resistance, struggles - whether that's intervening,*

protesting, challenging, petitioning, letter writing, hosting ceremony and having ceremony, continuing language revitalization, land-based learning, community-based monitoring, sovereignty over their lands and territory… are things that we have to maintain in order to have that connection to the land. And when we are doing language preservation and cultural preservation, it becomes just as critical as putting up solar panels, and changing our energy efficiency. Because it's reconnecting and maintaining those connections to land that become so critical.

One example of an Indigenous grassroots organization is Indigenous Climate Action – a network of Indigenous people across Canada to create and share resources on climate change rooted in Indigenous perspectives and traditional knowledge (indigenousclimateaction.com). Eriel helped create the network to address the fact that, though Indigenous peoples have deep understandings and knowledge of the land, they were not being included in conversations on climate change and did not have the information or resources to make informed decisions. As Eriel explained, "the colonial machine was somewhat successful in the divide and conquer tactic… I want those walls to come down, and I want those networks to start talking again, so that … we can share ways to move forward to address climate change."
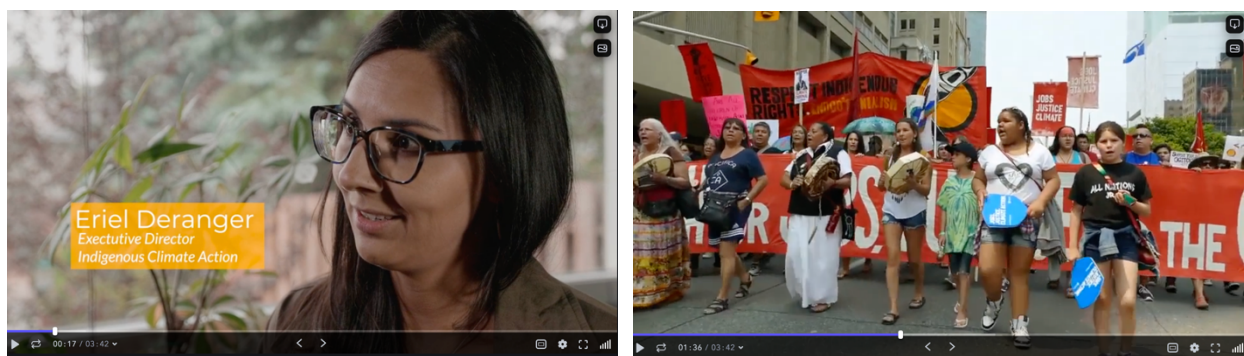
Figure 20. *Eriel Tchekwie Deranger, Executive Director of Indigenous Climate Action, speaking on the importance of grassroots activism for decolonial climate solutions.*
https://bit.ly/2xITzJA

4.3.3.4. Cross-cultural dialogues

Elder Dave Courchene spoke about his vision to convene the Onjisay Aki International Climate Summit, which brought together Indigenous Knowledge Keepers, scientists, and other climate leaders in a cross-cultural dialogue on Indigenous-led climate solutions in June 2017 (**Fig. 21**). Courchene shared his understanding that prophecy foretold of the current time of *onjisay aki* ("our changing earth" in the Anishinaabe language) in which Indigenous peoples of Turtle Island would once again be recognized as leaders and bring forward knowledge to help all of humanity

reconcile our relationships with the earth. For Courchene, the Summit was about bringing together the diversity of the human family to share a way of life of Indigenous peoples – particularly their relationships with the spirit and with the land – which could provide a foundation for collaborative actions to address the environmental challenges at hand.

Figure 21. Overhead view of Turtle Lodge from a video of Elder Dave Courchene discussing Indigenous leadership on climate change and the Onjisay Aki Climate Summit.
https://bit.ly/2zDwUzL

4.3.3.5. Ecological restoration initiatives

From the University of Lethbridge, renowned Blackfoot scholar Dr. Leroy Little Bear explained the importance of initiatives for buffalo restoration that he is involved in (**Fig. 22**). He described the deep cultural, spiritual, and sustenance relationships that the Blackfoot people have with the buffalo: "The Buffalo embodied us and we embodied the Buffalo. And when it was gone, we still have the beliefs, but I'm a whole lot less Blackfoot because the Buffalo is not [there] on a daily basis." Buffalo restoration is not only important for Blackfoot culture and identity, but also for addressing the imbalance in the environment that climate change represents, as he described:

> *The Buffalo is the best environmentalist you can have. In fact, wherever the Buffalo is, birds that you've never seen before all come back. Plants that you don't see any more end up coming back and so on. The Buffalo is… a keystone species with regard to environmental issues. It's not just about trying to bring that Buffalo back just to see it out there. It also brings about environmental changes and brings about that ecological balance.*

Little Bear spoke about buffalo restoration in relation to the paradigm of constant flux in native science; understanding that things are changing all the time – forming, reforming,

transforming – "if we added something new to the pot, it may just be what's going to bring about balance."

Figure 22. Dr. Leroy Little Bear discussing the role of buffalo restoration in addressing climate change from a native science perspective.
https://bit.ly/2PvYseT

4.3.4 Themes across case studies and solutions

Across participants and case studies, several interconnected themes emerged in discussions of solutions: Indigenous leadership; building capacity and self-sufficiency; generating sustainable economic development; connecting with and sharing Indigenous knowledge; connecting with and learning from the land; building relationships and bridging Indigenous knowledge and western science.

Indigenous leadership. Almost all participants emphasized that Indigenous peoples have a critical role to play as leaders in addressing climate change, in light of their unique knowledges, worldviews, and ancestral connections to their homelands. Melina Laboucan-Massimo and others underscored the ways in which Indigenous communities are already leading climate action and mitigation – with projects such as community-owned renewable energy – despite the high levels of poverty and crises in their communities, from housing to youth suicide to addiction. Eriel Tchekwie Deranger, Dave Courchene, and Leroy Little Bear all discussed prophecies of their peoples that foretold of this time of change, and highlight the importance of Indigenous unity and leadership. At the same time, some participants noted barriers or challenges to recognition of Indigenous communities as leaders, including: exclusion of Indigenous peoples from governmental conversations on climate change; the gap in accessible information, tools, and resources on climate science and policy available to Indigenous communities; the difficulty in

securing capital for infrastructure investments in small communities; the lack of relationships and knowledge sharing on solutions between Indigenous communities; and the positivistic western framing of climate change in the mainstream discourse.

Building capacity and self-sufficiency. Across the case studies of climate solutions discussed by participants, there was widespread recognition of the importance of building capacity, increasing self-sufficiency and self-determination, and decreasing dependencies of communities. Chief Billy-Joe Laboucan and Leonard Cardinal remarked on the importance of culture camps and land-based learning for increasing independence and self-sufficiency to survive off the land. Others described the increased sovereignty gained through energy projects, by bringing local training and employment and decreasing reliance on public utilities. For the Northern Village of Green Lake, their solar project provides greater independence by mitigating against problems of high voltage drop and frequent power outages of grid power to their rural community. At the same time, Mayor Ric Richardson views their community-owned solar development as an opportunity for social change: "we're looking at this as an opportunity…there's a larger picture that we're looking at other than just power." Many participants commented specifically on the opportunities for young people, as Lionel Sparvier described of Cowessess' wind project: "it's good for our community. It gets our younger people interested…there's other opportunities now." In the example of Montana First Nation's solar company, Vickie Wetchie explained that "you hire your own people, by your people, for your people" to provide sustainable, self-sufficient employment opportunities for community members and upcoming youth.

Generating economic development. Related to increasing capacity and independence were many comments on the economic benefits of climate solutions, particularly in communities with renewable energy projects. Chief Cadmus Delorme and Lionel Sparvier discussed the importance of the Cowessess wind turbine and battery project as an asset of the community, that can allow them to generate profits and participate in the economy. Vickie Wetchie emphasized the savings from their Montana First Nation's solar and retrofit – around 60% of the band office power bills – which they have invested into clean water infrastructure for the community. She described it as a "win-win" for the community, lessening their bills and environmental impact.

Connecting with and learning from the land. Many participants talked about reconnecting and strengthening their ancestral relationships with the land as part of the solution to climate change. Understanding the land as a source of knowledge, Leroy Little Bear said spending time on the land "is where the real learning will take place." Leonard Cardinal emphasized the value of land-based learning for people from all walks of life. Similarly, Dave Courchene described that it is their ancestral connection to land and to spirit that has allowed Anishinaabe people to survive, and that will be key for their survival into the future. He said "if there's anything we can do to inspire our fellow human beings when it comes to climate change I would say go to the land, go and sit on the land, go and be with the land. Open yourself to hear the voice of the land. Open yourself to feel the land."

Connecting with and sharing Indigenous knowledge. Another common theme was the importance of reconnecting with Indigenous knowledge, transferring these knowledges to younger generations, and pursuing actions that align with the values and philosophies of these knowledge systems. Connecting with this knowledge can not only bring people closer to the land, but to elements central to their cultures and identities, histories, and spiritualities. Vickie Wetchie emphasized that documenting this knowledge will be important, but also understanding that it will and must change, because "to survive is to change." For Eriel Tchekwie Deranger, connecting with Indigenous knowledge in the context of climate change is an opportunity "to not just leverage our knowledge to help climate stabilization, but to really help ensure that our cultures, our identities, and our people's cultural survival is upheld." Five participants commented on the importance of languages for holding and accessing traditional knowledge. Leonard Cardinal explained the importance of language from his perspective: "The language is the story. The language is the teachings. The language is a spirituality. The language is everything." Similarly, Leroy Little Bear described language as "a repository… where all this knowledge and experience that you have with the land [is]… Consequently, if you speak the language you can draw on that repository." Chief Laboucan emphasized the role of education systems in maintaining Indigenous knowledge and languages: "We wanna take over our own education, we don't want education to be used as a weapon against us anymore. We wanna be able to access the Indigenous knowledge from Elders." Dave Courchene echoed this understanding that education grounded in Indigenous knowledge is central, and also emphasized the importance of sharing this knowledge with others: "I believe that

is where Indigenous peoples can have a very important role in sharing this knowledge, these protocols, that we all need to have in terms of having a relationship with the land itself."

Building relationships and bridging Indigenous Knowledge and science. At the same time, most participants also talked about the role of western science and technology in addressing climate change, and the need for building relationships and partnerships to bring together IK and science. Leroy Little Bear asserted that we must move beyond the either/or mentality of western thought: "we're not talking about either Western science or native science. What we're talking about is a marriage of the two because that'll bring about enrichment. That's what we refer to as a holistic approach." Little Bear shared about his experience on the Indigenous Wisdom Advisory Panel with the Government of Alberta, which he views as a successful example of working with both knowledge systems on equal level to offer new perspectives on addressing environmental change. At the same time, several participants emphasized that traditional knowledge must be recognized as equal and "uplifted just as much as western science" in order for these partnerships to be respectful and successful. Community members from Cowessess First Nation also emphasized the importance of bringing together Indigenous and non-Indigenous knowledges through trust-based partnerships. As Chief Delorme said, "you have to be open-minded, you have to trust, you have to gain relationship… When you deal with First Nations bands, First Nations in general, it's always about relationship."
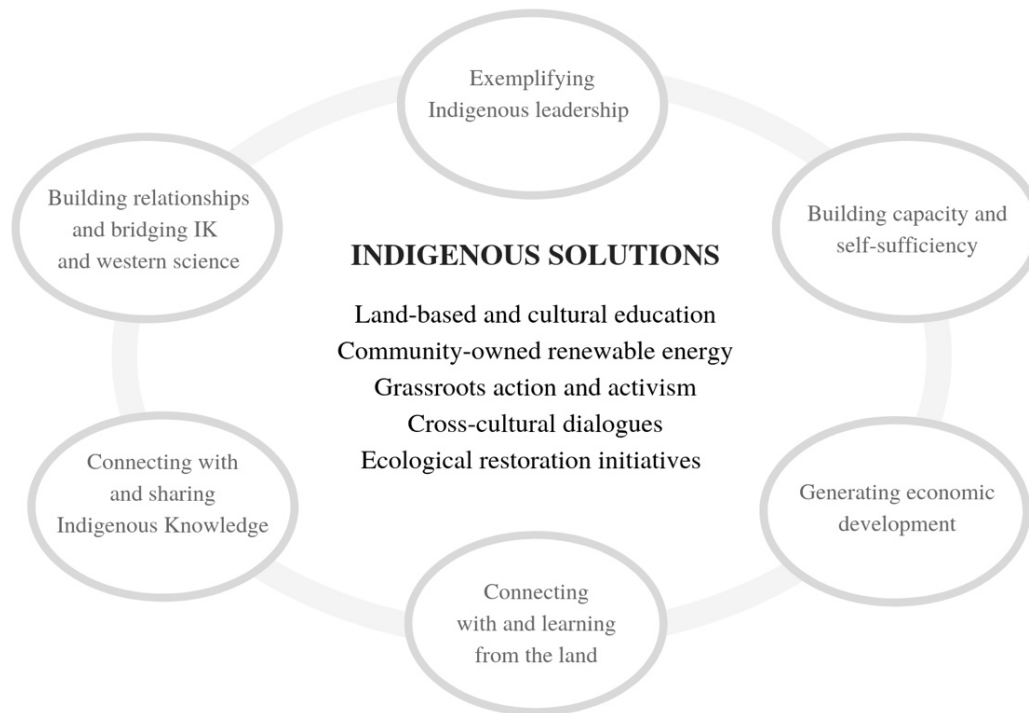
Figure 23. *Examples of Indigenous solutions (inside) and common themes (outside) from interviews with 10 participants in the Canadian Prairies.*

Overall, there was a sense that Indigenous-led solutions – through restoring their traditions and knowledge, and working towards self-sufficiency as communities and Nations – must involve a shift away from ideologies of separation, superiority, and competition. While some participants shared their beliefs that commitment to action must start at an individual level, all participants talked about the need for collaboration. People discussed the different information and gifts that people from all walks of life can bring to enrich solutions, and the need to move from competition to cooperation and open-mindedness. This need for an ideological and social shift was seen by some as the solution, not only to address climate change, but to decolonize society and reconcile human relationships with the earth more broadly. An overview of the examples and themes across communities is shown in **Figure 23**.

4.4. Discussion

4.4.1. Climate change challenges and opportunities

Perspectives from Indigenous communities across the Prairies reflect diverse experiences, understandings, and responses to climate change. In many cases, community members shared

understandings of climate change as related to broader environmental and societal issues, and in some cases as directly connected to colonialism. Often the environmental impacts of climate change and those of industrial development were inseparable for participants, such as community members from Lubicon Lake who discussed compounding impacts of extraction and climate change in tar sands region of their homelands. Canada is the fifth largest fossil fuel producing country in the world; the industry has seen massive growth in recent decades, with bitumen extraction from the tar sands increasing tenfold between 1990 and 2014 (CAPP, 2016). The disproportionate impact of extractive industries, particularly the fossil fuel industry, on Indigenous peoples in Canada has been documented in the literature (Booth & Skelton, 2011; Laboucan-Massimo, 2017), and parallels injustices of environmental racism from extraction in petrostates around the world (Perkins, 2017).

While numerous participants drew connections between climate change, fossil fuel industries, and colonialism (and its associated values), this stands in contrast with the literature, in which the colonial context and extractive dimensions of climate change are often overlooked (Cameron, 2012b; Ford et al., 2016). Many Indigenous and allied scholars are working to draw these connections and bring colonial dimensions into the climate discourse, with some contending that climate change is a continuation of the anthropogenic environmental change that Indigenous peoples in Canada have been experiencing since first contact with settlers (Whyte, 2017a; Wildcat, 2009). Whyte (2017a) and Wildcat (2009) argue that distancing and displacement of Indigenous peoples due to climate change today is just a new form of removal by colonial governments, following the geographic removal from their homelands through settlement, social removal of children through residential schools, and ongoing psycho-cultural removal through colonial institutions. As Whyte (2017a) asserts, "anthropogenic climate change makes Indigenous territories more accessible and Indigenous peoples more vulnerable to harm, just as did laws, policies, boarding schools, and the like in previous episodes of colonization" (p. 157). The understanding shared by many participants – but not all – of colonialism as both a driver of climate change as well as a major influence on Indigenous communities' vulnerabilities and adaptive capacities begs further exploration of these connections and attention to colonial contexts in climate research. Since this is an exploratory study, more research is likely required to fully appreciate the extent to which Indigenous people's experience with colonialism is directly or indirectly linked with their understandings and experiences with climate change in the region.

However, based on these findings, it is recommended that climate change research consider the broader social, political and economic processes and contexts that surround Indigenous peoples, their lifeways and knowledges. It is no longer – and never was – appropriate to simply view Indigenous knowledge as a data point to confirm western perspectives regarding climate change.

While participants discussed communities' vulnerabilities to the impacts of displacement, extraction, and environmental change, they also highlighted communities' perseverance in pursuing action. As Wildcat notes, for Indigenous peoples who have survived the continued removals and dispossession there is trauma, but also "tenacious resilience" (Wildcat, 2009, p. 3). This resilience is clear in the solutions brought forward by the community members interviewed. While there was variation in the motivations and priorities of each participant and community – from environmental protection and climate mitigation, to economic development and employment, to sovereignty and control over resources, to education and relationships – across projects it was clear that most people envisioned solutions through a holistic lens that drew on their cultural values and ancestral experiences to work for both human and ecological benefits.

Several areas of action were highlighted from the experiences shared by participants: renewable energy, land-based education, grassroots action, cross-cultural dialogue, and ecological restoration. While there exists literature in some of these areas – such as Indigenous community-based renewables (Henderson, 2013; Hunter-Loubert, 2016; Krupa, 2012a; Lowan-Trudeau, 2017a), cultural revitalization and land-based education (Lowan 2007, 2009; Wildcat et al., 2014), and grassroots action and activism (Lowan-Trudeau, 2017b; Perkins, 2017; Whyte, 2017a) - the present research presents a unique opportunity to look at the ways in which each of these actions can be understood as contributing to a holistic response to climate change. Though, it is important to note that drawing these perspectives and projects together in a discussion of climate change is not to overlook or sideline communities' goals of sovereignty, cultural revitalization, and so on; as Jaffar (2015) illustrates, it is critical not to counter or co-opt indigenous narratives and pursuits in the name of sustainability. Rather, the aim is to show how interlinked these goals may be, and how addressing an issue as monumental as climate change can provide opportunities for simultaneously better understanding and further supporting Indigenous initiatives and processes of self-determination.

On the whole, the solutions show that Indigenous communities are taking actions in diverse ways – in some cases working to shift away from western ideologies and reconnect with their

ancestral knowledges, skills, cultures, languages, and lands; while in other cases embracing western knowledges and technologies such as wind and solar when they align with their Indigenous values and benefit their communities. These different pathways for climate action may be considered to share principles with the multiple pathways to Indigenous freedoms advocated by Anishinaabe scholar John Borrows (2016). By both engaging western technologies and systems and moving outside and beyond them, communities are responding to Borrows' (2016) call to challenge colonial constructions of Indigenous societies as "past-tense peoples" and pursue a plurality of approaches to freedom in relation to western systems (p. 33). Taken together, the interviews indicate that these communities are doing just this, engaging with governments and policies, industry partners, and western institutions in some cases, while also working among themselves to convene conversations, build alternatives, and return to knowledges and relationships that predate the settler state.

4.4.2. Sharing stories: Video methods in Indigenous climate research

While this research sought to document and connect Indigenous knowledge and responses to climate change in the Prairies, it also explored the opportunities and limitations of using visual methods to do so. Participatory video was used to address some of the critiques and considerations regarding representation of Indigenous communities in conventional research, with particular attention to the embodied and place-based aspects of Indigenous knowledge. Video methods were proposed by the researchers, and participants were receptive of, and generally excited by, the video component of the project. The short videos created to support participants and communities in sharing their stories with wider audiences ensure that they are centered as the storytellers, which Branch (2011) argues is a way of empowering participants in research. The videos represent research products that are accessible to communities, and which they own, control, and can use for their own purposes – may that be in grant applications to pursue funding for further initiatives, to share when they go to talk about their work with other communities, or otherwise. This responds to Evans and Fosters' (2009) assertion that despite increasing use of videography in CBR, there remains a need for more research products that are accessible and relevant to communities.

The accessibility and mobilization of this knowledge through the videos made is further enhanced through sharing them in the Prairie Climate Centre's (PCC) Climate Atlas of Canada – an interactive online platform that aims to combine science and storytelling on climate change to

support communities, policy-makers, and researchers in understanding and responding to the challenges we face (www.climateatlas.ca). An Indigenous-focused version of the Atlas is being developed in consultation with Indigenous advisors to highlight the videos overlaid on an interactive map of Indigenous communities and territories in Canada. This allows the local, specific, individual narratives of each video to be connected across communities and geographies, letting broader narratives emerge that can inform policy, research, and learnings at a larger scale. This mirrors both the place-based nature and the commonalities of Indigenous paradigms (Little Bear, 2009). It also increases visibility and accessibility of the videos for a wider audience. This is not to say that all of the participants' stories fit perfectly into one broad narrative; each participant and community has their own experiences, and the differences and heterogeneity therein may be equally as important as the commonalities. Nonetheless, sharing the videos through the Atlas extends the participatory nature of the research to the audience, allowing users to move between the individual and collective narratives and draw their own insights and conclusions.

While the visual methods used herein, combined with the PCC's interactive platform, aim to innovate and address some of the criticisms with conventional research processes, they are not without their own considerations and limitations. In this case, videos were shaped collaboratively through conversations with communities and feedback on video drafts, however the researchers still maintain a significant amount of power and control over the narrative, particularly through the editing process. The power imbalances in participatory video are well-documented in the literature (e.g. Bali & Kofinas, 2014; Ball & Janyst, 2008; Evans & Foster, 2009). Through the editing process researchers "make aesthetic, technical, contextual and structural choices which we feel make the film accessible to western [audiences]" and risk deconstructing and reconstructing another's knowledge (Elder, 1995, p. 94). These considerations were addressed in part in this project by sending full transcripts and videos to participants ahead of sending the first video draft, to ensure that there were no critical parts of their message omitted or misrepresented in the edited cut, and then seeking input and feedback on the video drafts. Nonetheless, editing involved the researchers choosing points that were considered most powerful, salient, and relevant to the research questions, which is inherently a power-laden process (Gubrium & Harper, 2013) and deserves particular scrutiny given the colonial context. Further power imbalances in videography existed in terms of access to resources, equipment, and technical expertise that the researchers were afforded through their positions within the western institution of the University.

An additional consideration in the PV process includes the quality and length of the videos produced. In this research, videos were intentionally limited to 3-5 minutes to suit modern patterns of online media consumption, with the ability to reach a wider audience with shorter, more 'concise' messages. Evans and Foster (2009) discuss the balance between the participatory nature of the process on the one hand, and the quality and appeal of the video product enhanced by technical expertise of the researchers on the other hand, arguing that more attention should be paid to audience/viewer engagement. Johansson (2006) also suggests that the question of who is operating the camera equipment in PV is less important than whose perspectives are being shared. While this approach of creating short, high impact videos may reach a larger audience online, we recognize that it plays a role in shaping the knowledge and message shared to an extent. While we sought to find a balance between participation and guidance from the communities, and quality and reach of the videos produced, how successful we were in this aim can only be determined by the participants.

It is worth noting two other areas of opportunities and limitations in the research process, namely scale and language. While the majority of studies in the literature document IK at the community level, looking at this knowledge across communities and wider geographic areas could: provide a better understanding of the common aspects across Indigenous knowledge systems in relation to climate change, facilitate knowledge sharing between communities, and address power imbalances embedded in the localized framing of IK. The results of this research show that it is not only elements of philosophies and worldviews with respect to the environment that are shared among many Indigenous Nations, but there are also commonalities in understandings, experiences, and responses in the face of climate change that are revealed through storytelling across the landscape. Many participants expressed the importance of knowledge sharing between communities for learning and collaborations, which regional research such as this can aid.

However, while there are benefits of working across scales, there are also limitations in that the research design and analysis do not find an epistemological foundation in any one particular Indigenous knowledge system when participants come from many different Nations. In this case the research framework drew on common principles of IK (Battiste & Henderson, 2000; Cajete, 2000), rather than focused on one specific knowledge system. The larger geographic scale of research also presents challenges for the degree of participation of community members and the ability to develop meaningful relationships with limited face-to-face interaction. These challenges

were addressed in part in this research through communication (mail, email, and phone conversations) before and after in-person meetings and interviews. Further, in this case, research at a broader scale raises important consideration of language in documenting IK. While video methods have the potential to increase inclusion of Indigenous languages in academic research through speaking and subtitling, we did not have the capacity to edit and translate in the numerous different languages of participants in this project and thus did not include participants speaking extensively in their native languages. These methodological challenges and opportunities are further discussed in Chapter 5.

Finally, while it is clear that methods and modes of documenting and sharing IK on climate change should be selected according to the community and context, exploring diverse and alternative pathways for knowledge sharing may support the mobilization of knowledge from the academic into the public sphere. Pushing the boundaries of communication in research in this way is particularly important considering the role that the academy has had and continues to have in the colonization of Indigenous peoples in Canada and the marginalization of non-Western knowledges.

4.5 Conclusion

Through a process of community-based research employing collaborative participatory video methods, we examined some of the ways in which Indigenous communities in the Prairies are experiencing, understanding, and responding to climate change. The results indicate that participants across diverse Nations and territories are witnessing changes in the environment and being impacted by them, resulting from combined and compounding impacts of industrial development, climate change, and other colonial influences. These environmental changes have serious social implications for communities, challenging their identities, health, security, and cultural survival. Many participants expressed an understanding of climate change as a result of broader issues brought by western systems and ideologies, causing disconnection among humankind and between humans and their environments. At the same time, communities are undertaking diverse, Indigenous-led solutions to climate change through land-based and cultural education initiatives, community-based renewable energy projects, grassroots action and activism, cross-cultural dialogues, and ecological restoration initiatives. Communities are pursuing action through many pathways, not only to ameliorate 'environmental' problems, but to strengthen their

own cultures and knowledge systems, economies, and self-determination. Across these solutions, six common themes emerged: exemplifying Indigenous leadership; building capacity and self-sufficiency; generating sustainable economic development; connecting with and sharing Indigenous knowledge; connecting with and learning from the land; building relationships and bridging Indigenous knowledge and western science.

In the process of exploring the research questions, we used video methods to look at new opportunities for mobilizing IK on climate change within and beyond the academy. In consideration of the distinct characteristics of Indigenous knowledge and epistemologies, and methods of engaging with them through academic research, we suggest that video can be a useful tool to address concerns of power and voice and create an accessible research output that can mobilize IK beyond the academy. Herein we created eight short videos which are owned and controlled by communities, and will be shared with their permission through the Climate Atlas. These videos can help bring visibility to communities' perspectives and initiatives, and facilitate broader learning across the landscape. At the same time, we find these methods come with their own considerations and obstacles with respect to narrative construction through the video editing process, technical skills and resources required in film-making, capacity-building, and balancing participatory process and audience engagement through the quality and length of videos.

We also discussed the scale of research undertaken, and how scale interfaces with the community-based and participatory nature of the methods employed. We have argued that, while many community-based studies focus on localized and individual stories, research extended to the regional scale as undertaken here is valuable and can bring to light unique learnings, parallels, and variation across communities and geographies. Visual methods and outputs such as the videos shared here can be useful in bridging research across scales, maintaining individual voices and stories while allowing broader narratives to emerge.

While there has been very little documentation of IK on climate change in the Prairies of Canada in the academic literature to date, this research marks a significant contribution in this area, showing that communities in this region are both experiencing and responding to changes in their environments in powerful ways. The participants and initiatives surveyed here are only a few examples among the actions being led by Indigenous communities across the Prairies. Echoing many Indigenous scholars, we assert that respectfully engaging with Indigenous peoples and their knowledges on climate change can not only help inform more holistic approaches to the problems

and solutions, but can simultaneously illuminate and support better understandings of Indigenous pathways to self-determination. This is not to dismiss Indigenous communities' vulnerabilities to climate change – due to existing socio-economic challenges such as health, housing, and unemployment resulting from ongoing colonization – but to draw attention to their often-overlooked strengths and resiliencies. There remains a need for further collaborative and creative research in this field, to highlight the diverse knowledges and initiatives being undertaken in a region which will be one of the most severely affected by climate change in Canada. To ensure mutual benefits, researchers and academic institutions, funding bodies, and policy-makers must broaden their understandings of climate change and seek to better appreciate how it intersects with and influences Indigenous cultures, identities, and knowledge systems. In the process, we must continuously foreground the colonial origins and contexts of climate change, and seek to subvert these power dynamics through systemic, decolonial research and solutions.

CHAPTER 5: CONCLUSION

CONCLUSION

This thesis documented and connected Indigenous perspectives on climate change in the Canadian Prairies, and explored the use of participatory video (PV) methods in mobilizing these perspectives beyond the academy. While the literature on IK and climate change in other regions in Canada has grown rapidly in recent decades (e.g. Krupnik & Jolly, 2006; Sanderson et al., 2015; Turner & Clifton, 2009), there has been very little published research undertaken in the Prairies to date (e.g. Pittman, 2009; 2010), and none known to use PV methods. Through an Indigenous community-based research approach employing interviews, talking circles, participant observation, and PV, we explored some of the ways in which leaders and community members from various Indigenous Nations are experiencing and responding to a changing climate.

This research project began with and evolved from the Turtle Lodge's vision of convening an Indigenous-led, cross-cultural dialogue on climate solutions. The Elders, Knowledge Keepers, and community at Turtle Lodge have played an invaluable role in inspiring and informing the project over the past two years. In particular, Elder Dave Courchene (Nii Gaani Aki Inini), Anishinaabe Knowledge Keeper and founder of Turtle Lodge, has been central in guiding the researchers and providing leadership throughout the collaboration to ensure it was carried out in a meaningful and respectful way. Through many meetings, gatherings, ceremonies, and conversations with Elder Courchene and Turtle Lodge, the research team received direction and gained better understandings of different ways of knowing which guided the project.

From supporting and documenting the Onjisay Aki Climate Summit at Turtle Lodge, to travelling to communities across the region to document and help share diverse perspectives on climate, this thesis captures a wealth of knowledge and solutions for climate change that stand to benefit Indigenous communities and broader society. We sought to explore not only how people are experiencing, observing, and responding to environmental changes, but also better processes of carrying out research to understand and document these perspectives in a powerful and collaborative manner. Importantly, the project placed emphasis on Indigenous-led solutions, in contrast to the majority of the literature on Indigenous perspectives on climate change in Canada which focuses on observed change, vulnerability, and adaptive capacity (e.g. Bravo, 2009; Ermine et al., 2007; Furgal & Seguin, 2006; Pittman, 2009). In this way, the research counters the narrative of Indigenous peoples as exclusively victims on the frontlines of climate change, by foregrounding the ways in which communities are taking action and leading conversations. As this project was

exploratory in nature, our findings only scratch the surface of the depth and diversity of Indigenous perspectives and initiatives on climate change in the region. In this chapter, I will discuss the major findings and contributions to theory; my own personal reflections on this research journey; recommendations for future research; and conclusions.

5.1 Findings and contributions to theory

The research sought to address three broad, exploratory questions. An overview of the main findings and observations for each question are outlined in **Table 3**.

Table 3. *Overview of major findings and observations by research question*

Research questions	Findings and observations
What are some of the ways in which Indigenous peoples in the Prairies are observing, understanding, and responding to climate change? (Chapters 2, 3, 4)	- Indigenous peoples in the Prairies are experiencing changes in their environments, due to combined direct and indirect impacts of climate change and industrial development. Areas of great concern are water; culturally-significant animal and plant species; erratic weather; contamination and destruction of land. The changes are impacting peoples' culture, identity, knowledges, health, safety and security. - Many people understand and experience climate change in the context of colonialism - the impacts that it has on themselves, their communities, and their lands, as well as the role that it plays in driving environmental and climatic change. In particular many people discussed the broader human condition and set of western values that colonialism has imposed, which has disconnected people from the land and each other. - Communities are pursuing action in diverse ways - in partnership with and independently from colonial governments and institutions - to reconnect with the earth while furthering their nationhood and self-determination. They are doing so through actions such as land-based education and guardianship programs; ceremony; cross-cultural conversations on climate change; articulations of Indigenous nationhood; Indigenous language camps; community-owned renewable energy development; and other avenues of grassroots action and activism.
What is the role of IK in addressing climate change, according to Indigenous peoples in the Prairies? (Chapters 3 and 4)	- Most participants agree that IK can play a valuable role in the context of climate change, but it cannot be separated from the ways of life and relational worldviews from which it emerges and is embedded within. In particular, the spiritual and philosophical dimensions of IK must be engaged. In this light, IK can provide not only observations, but a foundation of values to guide the development of western technologies and science and support a societal shift in the cultural attitudes and relationships. - IK must be brought forward and held by Indigenous Knowledge Keepers and communities, and shared through experience according to the context and protocols of each Nation. - At the same time, IK is being threatened/impacted by climate change and colonialism, due in part to peoples' disconnection from land.
How can participatory documentary video be used to highlight and support Indigenous perspectives and leadership on climate change? (Chapter 4)	- From the nine videos collaboratively produced herein, we suggest that combining participatory and visual research methods through participatory video can support the mobilization of IK on climate change beyond the academy. Combining these methods with online interactive platforms such as the Climate Atlas can aid in storytelling across scales and extend the participatory aspect to the audience. - These methods can address some of the challenges around power, voice, and representation in conventional research, of particular importance given the colonial contexts of research with Indigenous communities. At the same time, these methods bring their own considerations around technical knowledges, editing power, capacity building, resource-intensity, and accessibility.

In identifying and exploring several gaps in the literature – both geographical and methodological – this thesis has made contributions to the literature in the areas of: Indigenous perspectives on climate change in Canada; sustainable self-determination; Indigenous community-based research across scales; and PV methods. The findings and contributions are discussed in the context of the literature and theory in the sections below.

5.1.1 Holistic understandings of climate change

Taken together, the results illustrate holistic views of climate change from Indigenous Knowledge Keepers and community members, of both the impacts (e.g. environmental changes have direct social impacts such as human health, employment, and lifeways) and the underlying problems (e.g. the human condition and values brought about by colonialism). The connections between colonialism and climate change were central to many of the conversations – whether through direct recognition of colonial forces driving emissions and consumption, or indirectly through discussion of other issues caused by colonial governments and ideologies which impact communities' capacities or circumstances in the context of climate change. In another study that engaged with Indigenous communities in the Canadian Prairies, researchers found that while in conversation about climate change, participants often raised other concerns, such as sustained impacts of residential schools, poverty, and other social stressors – raising what the authors call "the issue of other issues" (CIER, 2011). Similar matters were raised herein – such as industrialization of territory, declining health of community members, colonial legislation, the housing crisis, and rising violence and addition – which at first seemed in some ways 'beyond the scope' of the research questions. However, through conversations with community collaborators, it became clear that these problems were being brought forward because climate change cannot be addressed in isolation, but must be understood as interconnected with these "other issues." In a broad sense, the systems that adversely affect Indigenous communities are also driving climate change, while at the same time climate change threatens to exacerbate existing stressors. In this respect, many participants described climate change as both an immense challenge and a great opportunity, to develop solutions that better their broader social and environmental conditions (Chapter 3 and 4). Some described a growing understanding in their communities that these existing issues were connected to climate change as "part of the bigger picture" (Chapter 4). This research indicates that, despite the existing challenges communities are facing, through this holistic

understanding people are highly engaged and already taking leadership on climate. In this light, the results illustrate the limited definition of climate change in the literature that is not reflective of Indigenous worldviews, as explored elsewhere in the literature (Cameron, Mearns, & McGrath 2015). The results underscore the importance of understanding the colonial roots of climate change – one of the threads that connects these "other" issues – in informing research and governance (Chapters 3 and 4), as argued previously by Cameron (2012b) and Ford et al. (2016). Furthermore, this illustrates the importance of challenging western notions and conceptions of climate change and allowing the scope and problem to be defined by communities.

5.1.2 Sustainable self-determination and climate solutions

From this broad understanding of the problems of and related to climate change, participants shared the solutions that their communities are bringing forward that aim to strengthen their self-sufficiency and self-determination, in addition to their cultural and social well-being. For many communities, addressing the issues within the larger social and colonial contexts go hand in hand with working to restore ecological balance and relationships with the earth (Chapters 2, 3, and 4). Cherokee scholar Corntassel's (2008) concept of *sustainable self-determination* is useful in this respect, which is described as a process of "Indigenous livelihoods, food security, community governance, and relationships to the natural world and ceremonial life that enables the transmission of these cultural practices to future generations" (p. 124). Whereas in western understandings sustainability is often associated with environmental protection and conservation, for Indigenous peoples' sustainability is linked to the transmission of knowledge and culture (Corntassel, 2008; Garibaldi & Turner, 2004). According to Anishinaabe scholar McGregor (2004), from an Indigenous point of view "to be sustainable means to take responsibility and be spiritually connected to all of Creation, all of the time" (p. 76). From this understanding, there is considerable overlap between Indigenous concepts of sustainability (McGregor, 2004) and sustainable self-determination (Corntassel, 2008) in the literature and the climate perspectives and solutions documented here (Chapters 2, 3, and 4). Themes related to connection to the land; culture and community well-being; Indigenous leadership, traditional governance, and nationhood; and Indigenous knowledge were brought forward by Turtle Lodge (Chapter 2), at the Onjisay Aki Summit (Chapter 3), and across the Prairies (Chapters 4), and are also elements of sustainable self-determination (Corntassel, 2008; **Table 4.**).

Table 4. *Overview of themes from communities' solutions across chapters in relation to Corntassel's (2008) principles of sustainable self-determination*

Principles of sustainable self-determination (Corntassel 2008)	Turtle Lodge model of sustainable self-determination (Chapter 2)	Onjisay Aki directions for climate action (Chapter 3)	Themes from community solutions across the Prairies Chapter 4)
Relationships to the natural world	Earth stewardship	Connecting with the land	Connecting with and learning from the land
Community health/well-being	Culture and community well-being	Connecting with tradition	Building capacity and self-sufficiency
Cultural transmission			Connecting with and sharing IK
Livelihoods and food security			
Community governance	Traditional governance and law	Connecting with Indigenous nationhood	Exemplifying Indigenous leadership
Ceremonial life		Connecting with spirit	
Economic viability			Generating economic development
Sustainability, future generations			
	Respectful relationships	Connecting with each other	Building relationships, bridging IK and western science

This suggests that many of the pathways that communities are pursuing in relation to climate change are contributing to processes of sustainable self-determination. For example, community members explained that Montana First Nation's community-owned solar company in Alberta, Green Arrow Corp. Akamihk, increases their energy sovereignty and self-sufficiency through local employment, provides savings on power which are reinvested in to social programs and infrastructure, and lessen their environmental impacts simultaneously (Chapter 4). Another example is the Turtle Lodge's Onjisay Aki Summit in Manitoba, which is one initiative that illustrates their process of sustainable self-determination, among many others – such as hosting full moon ceremonies, land-based language camps, and national gatherings of Knowledge Keepers and scientists (Chapters 2 and 3). Results across chapters demonstrate that communities are undertaking actions to address climate change and further self-determination both within and outside of state systems and processes. While some scholars and community members believe that true self-determination is only possible beyond the state (Chapter 3; Coulthard, 2014; Daigle,

2016), the realities on the grounds in communities show that in some cases they are remaining flexible and welcoming support and/or partnerships with state governments, industry, and other partners when it suits the needs of their communities. For instance, participants from the communities of Cowessess First Nation and the Northern Village of Green Lake in Saskatchewan emphasized the importance of their collaborations with partners such as business consulting companies, public research institutions, and Crown corporations in the implementation of their renewable energy projects. Whatever their position relative to the state, the majority of community members discussed the importance of relationships – between Indigenous communities and Nations, as well as with allied communities, organizations, researchers, governments, and others. This suggests that both Indigenous and non-Indigenous relationships can be important for sustainable self-determination in practice, and that perhaps theory should make more space to reflect the diverse connections communities are pursuing (Table 4).

Though not all pursuits of self-determination will align with environmental sustainability and climate solutions (Tsosie, 2010), and not all actions on climate change will further sustainable self-determination, in some cases they may be pieces of the same puzzle. This suggests that sustainable self-determination may be a useful concept to develop and draw on in climate research with Indigenous communities in some cases. It is critical that the scientific community focus on engaging and strengthening IK in climate research with specific aims to support communities' self-determined climate action and planning (Whyte, 2017a; 2017b). Without a foundational understanding of colonialism and communities' goals of self-determination, the scientific community risks continued assimilation of IK within western environmental worldviews and governance structures, which in some cases may further marginalize Indigenous peoples (Mistry & Berardi, 2016).

In addition to understanding Indigenous concepts of self-determination, an important part of respectfully engaging with IK emphasized by the results is engaging with the spiritual and philosophical dimensions of IK. These aspects have been under-represented in climate research to date (Watson & Huntington, 2014; Burkett, 2013) though many understand them as vital and inseparable elements of Indigenous ways of knowing (Little Bear, 2009; Smith, 1999). Many participants at the Onjisay Aki Summit highlighted the importance of the spiritual basis of their knowledge and the ceremonial context for knowledge exchange, and suggested that IK must be seen not only as sources of observations, but as inherently linked to a spiritual way of life (Chapter

3). They emphasized their systems of values that can provide a compass to guide societal responses and associated technological development to living life in a manner that respects the earth and its land, water, and atmosphere (Chapter 3).

In this light, many participants contend that these Indigenous-led solutions can not only further communities' self-determination, but simultaneously inspire a broader societal shift which is needed to address climate change. Across the landscape, many people echoed a similar sentiment: it is not only a technological shift that is necessary to address the magnitude of the challenges we face, but a deep shift of humanity's social and ecological priorities – as Dave Courchene says, "a change of heart" (Chapters 3 and 4). This requires a movement led by those with long-standing understandings of humanity as part of the ecosystem, with relationships and responsibilities therein. This "cultural climate change" called for by participants is echoed by Indigenous scholars in the literature (Wildcat, 2009). As Wildcat (2009) asserts, "the most difficult changes required are not those of a physical, material, or technological character, but changes in worldviews and the generally taken-for-granted values and beliefs that are embedded in modern, Western-influenced societies" (p. 5).

Overall, communities are undertaking diverse actions to address climate change – from land-based education, to language revitalization, to renewable energy projects – which may be considered practices of sustainable self-determination. Though Indigenous knowledge, cultures, spiritualities, and identities continue to be greatly impacted by western systems and development – and related climatic and environmental changes – communities are drawing on these aspects to inform their solutions. This in turn reconnects with and strengthens their knowledges, cultures, spiritualities, and identities through processes of self-determination, which also mitigate environmental impacts. These solutions stand to benefit not only the communities themselves but broader society by inspiring a shift in values and behaviours. Specifically, they can and are leading a movement away from western attitudes of human separation from and dominance over nature, and towards ways of connecting and relating as part of the natural world (**Fig. 24**).
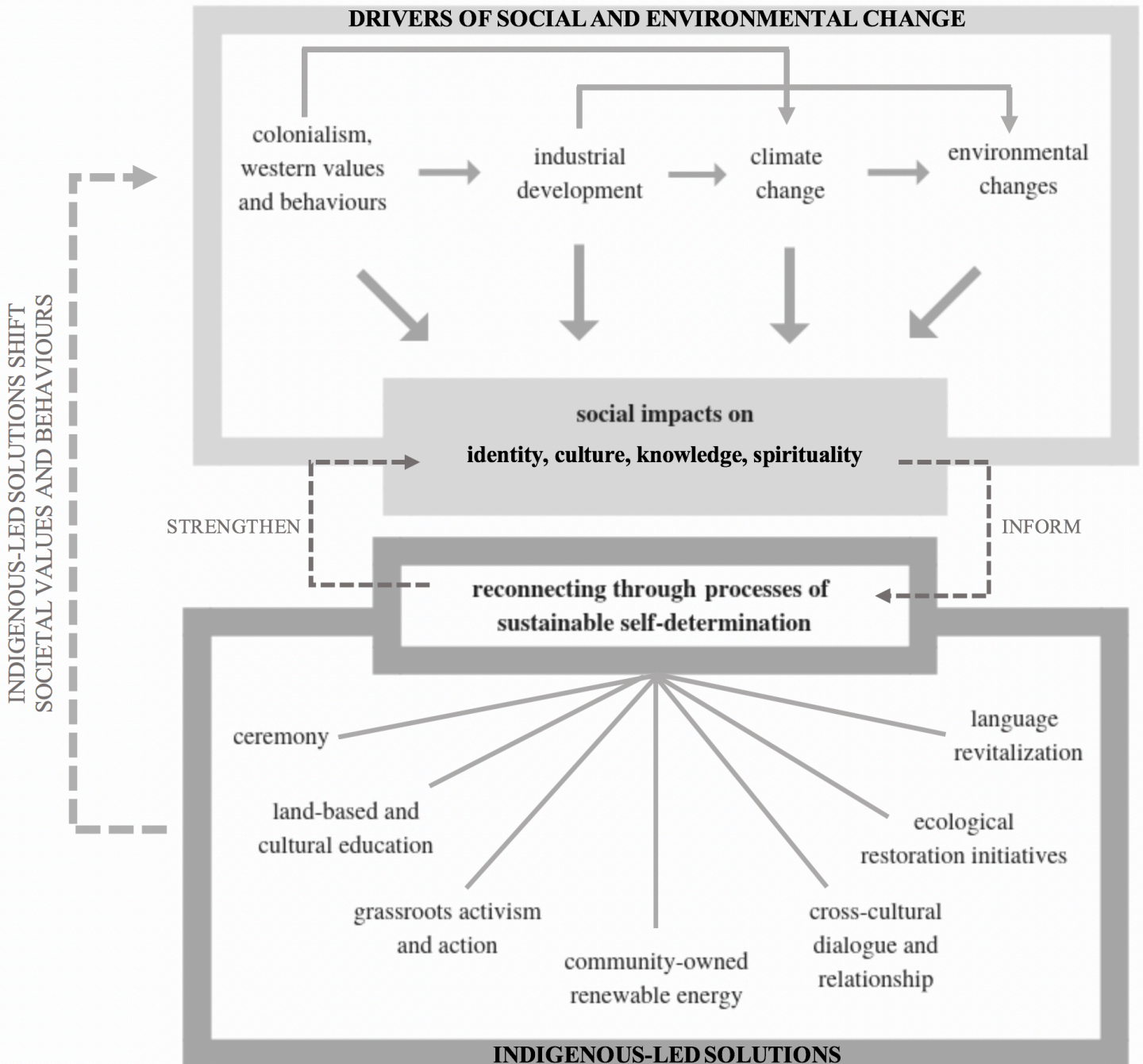
Figure 24. *Overview of the drivers of climate and environmental changes, the resulting social impacts, and the solutions brought forward by communities across the Prairies. Indigenous solutions were found to contribute to communities' sustainable self-determination through reconnecting with identity, culture, knowledge, and spirituality, while also benefiting broader society by inspiring a shift in values and behaviours. While there are undoubtedly other drivers and factors at play, this summarizes the main topics raised by participants.*

5.1.3 Participatory video in Indigenous community-based research

This project employed Indigenous CBR methodologies and participatory video methods to document and share participants perspectives and stories on climate, and it is important to reflect on how the research principles were operationalized and where challenges and limitations arose in this process (Ninomiya & Pollock, 2017). It is argued herein that videos are powerful storytelling tools that personalize climate impacts and solutions, bringing a 'global' problem to the local level and inspiring people into action. The videos produced in this project are already having impacts, both for participants and viewers. Two of the videos - featuring the Turtle Lodge's Onjisay Aki Initiative and Montana First Nation's community-owned solar company - were featured at the Manitoba Eco Network's *Reel Green* film festival in 2018, where the Turtle Lodge received the "Anne Lindsay - Protecting Our Earth" award. Additionally, the Social Sciences and Humanities Research Council (SSHRC) of the federal government has sought permission to use on of the Turtle Lodge's videos in their communications material for initiatives on reconciliation in research. The videos also provide a valuable and potentially more accessible way of verifying the analysis and sharing results back to communities in a way that is beneficial to them. For example, Montana First Nation's video has been shared over 1500 times on Facebook since it was released five months ago, and the collaborators gave feedback that their Chief and Council and community "are inspired and proud." We find that these video methods address some of the challenges around power, voice, and representation in conventional research by enabling stories to be shared by the knowledge holders in their own words and contexts, which is critical given the embodied and place-based nature of IK. While watching videos cannot replace this process of experiential learning central to many Indigenous ways of knowing, it has the potential to bring the viewer closer to those experiences than written word, and may inspire them to seek out further in-person learning opportunities. Arguably, a key strength of our community-centered approach to video making is that participants had an opportunity to share their story in a high impact manner while also retaining ownership and control over the message. For many of these communities, this was a unique opportunity that they had not been afforded until participating in this project, and something that was generally viewed as valuable.

At the same time, we faced challenges and limitations with these methods in relation to technical expertise and access to resources and equipment. In this project, the shooting and editing was done by the research team due to the requirement of specialized skills and resources and time

available by the researchers to work on this project. Importantly, community members collaborated on shaping the stories told in the videos before, during, and following the interviews, and they were generally grateful to the researchers for developing these video-based results. However, getting feedback on video drafts from community members required a significant amount of back-and-forth communication, and this may have been challenging and/or onerous for some community collaborators given the imbalance between the time researchers have to dedicate to the work relative to participants. We also recognize that capacity building is an important part of participatory research (Castleden et al., 2008; Koster et al., 2012) – requiring particular attention in film research due to the technical skills – and is an area for exploration in future projects and collaborations. In this light, the research team is currently collaborating on plans to support film training for youth in Sagkeeng First Nation in collaboration with Turtle Lodge in coming months. Overall, there is a wide range of avenues and extents of involvement of participants in PV processes, and the methods herein sought to find a balance between participant guidance and engagement and producing high quality videos which can draw a larger audience (Evans & Foster, 2009; Yang, 2012).

5.1.4. Indigenous community-based research across scales

Geographic scale has also been an important dimension of this project, and our methods offer valuable insight into the opportunities, feasibility, and trade-offs of carrying out Indigenous and community-based approaches from the local to regional scale. Attention to scale is particularly important in climate research because, though the problem has been largely framed as a global issue (Smith, 2007) – and will inevitably impact people all over the world – its impacts play out on the local level. Additionally, scale is particularly important in this context as comparisons of 'universal' versus 'localized' knowledges in the discourse on western and Indigenous knowledge are common and power-laden. The partnership with the Turtle Lodge in some regards reflected more characteristic community-based research (CBR), giving an in-depth portrait of perspectives from one community (Chapter 2). The Onjisay Aki Summit at Turtle Lodge, on the other hand, brought Knowledge Keepers together from around across Turtle Island and internationally, bridging the local to the global (Chapter 3). This was not only a unique opportunity for hearing perspectives from Indigenous Nations around the world, but also in bringing them into conversation; talking circles as such allow themes and ideas to be picked up and built upon through

repeated discussion, yielding a different, perhaps in some respects richer, outcome. Bringing people together may be a more natural way to bridge knowledges from different Indigenous cultures in some ways, but also requires greater effort of participants and distances them from the places where their knowledges are derived. In this light, travelling across the Prairies to interview community members in their own territories provided a different opportunity to document their stories within the context of their localities (Chapter 4). This allowed the research team and communities to share experiences – from climbing on the roof next to communities' solar projects; to going out on the land together to look at the changing rivers; to sitting around the fire in a storytelling lodge; to sharing traditional foods from their territories. While it does not give an in-depth portrayal of any one community, this approach brings a different strength in its ability to connect and visualize perspectives across the landscape. This allows complimentary and diverse voices to be shared and compared across cultures and territories, and can facilitate community-to-community learning without asking participants to travel to come together. It can also allow collective narratives to emerge which can inform policy on a broader regional scale. While recent years have seen the focus of geographic research turn towards the small, local, and specific stories of individuals (Cameron, 2012a), bridging these local stories at a regional scale can allow the influence of the larger socio-political-economic contexts to be illuminated. Moving across geographic scales also combats the common framings of IK as either universal and pan-Indigenous, or exclusively place-based and localized, challenging this dichotomy by capturing personal stories as well as common narrative elements across regions and landscapes.

While there are many potential strengths and insights from this local-regional research approach, we recognize the limitations as well. In particular, there is a trade-off between the depth of relationships and community participation on the one hand, and geographic spread between communities on the other. Measures were taken to initiate and continue relationships and collaboration through communication across distances, though having more time together would have undoubtedly enriched the process. These methods also raise considerations about the validity of drawing conclusions across diverse Indigenous Nations with distinct cultures and geographies. Considering that IK is developed through and embedded within specific relationships (Williams & Hardison, 2013), and given the historical and ongoing prevalence of colonial pan-indigenous constructs and erasure of Indigenous diversity, this point deserves particular scrutiny. This research does not aim to reproduce constructs of a single "Indigenous" voice on climate, but to

document many perspectives and connect the common themes as they emerge through conversations across diverse Indigenous cultures. To ensure participants' voices were grounded, each community member's Nation was given and verbatim quotes were often included, along with visuals and information about their identity where possible. At the same time, the results illustrated that there are common elements across knowledge systems from different Indigenous Nations, as echoed in the literature (Cajete, 2000; Little Bear, 2009). The analyses drew on these common principles to support the use of an Indigenous CBR methodological framework in research involving numerous communities. Importantly, these methods also parallel the efforts of many of the participants and communities themselves – such as Turtle Lodge (Chapter 2 and 3) – who are organizing and collaborating with others across the country. This suggests that, while there is a spatial-temporal-relational trade-off which has limited time spent together in this regional phase of the research, it is valuable and necessary to do this type of research in order to continue to illuminate the common ground between Nations and knowledge systems in the context of new challenges and common solutions. Overall, we do not wish to proclaim these participatory and visual methods as "best practices" (de Leeuw, Cameron, & Greenwood, 2012) - as they certainly are not free of practical, ethical, or political concerns – but believe that they offer important and practical insights for creative adaptation and further development in this area.

5.2 Personal reflections

In Chapter 1, I attempted to position myself within this research by explaining where I am coming from and how I have approached the project, and I feel it is important now to reflect on my personal experience and learning journey. As a non-Indigenous student this research is not about my knowledge, identity, or community, but my experiences may offer lessons which could be valuable to future researchers in this field.

When I moved to Winnipeg almost two years ago to begin this program and partnership with Turtle Lodge, I had never been to an Indigenous ceremony. I had never smudged, I had never participated in a talking circle, I had never seen a sweat lodge. My depth of understanding of Indigenous knowledge extended only as far as the literature (which, as discussed, positions IK primarily as a source of observations), and I had no experience and very little understanding of the spiritual basis of the knowledge and associated protocols. Over the past two years my understanding has grown dramatically, not only of Indigenous knowledge of the environment but

of the worldviews and philosophies it is embedded in, which has shifted the way I see and walk in the world. While I had a relatively interdisciplinary background in biology and anthropology coming into this Indigenous governance program, partnerships with communities and experiences outside of the University – in lodges and on the land – have at times taken me outside of my academic disciplines and introduced me to new knowledges and ways of knowing. Obviously, I am no expert – and I often wonder how much I can ever really 'know' these knowledges given my background – but nonetheless the learning has been transformative.

This research and my experience have been partially motivated and shaped by living as a young person in a time of 'reconciliation' and 'indigenization.' After centuries of oppression and genocidal attacks, an increasing number of Canadian governments, institutions, and citizens are awakening to their complicity, and moving (however glacially slow, insufficiently, and arguably disingenuously) to do something about it. While government action has been largely focused on 'making amends' for the atrocities of residential schools through the Truth and Reconciliation Commission (TRC), many Indigenous people argue that we must broaden our interpretations of reconciliation to look at the systems driving ongoing marginalization. As Simpson (2011) explains, "how we reconcile is critically important" (p. 24), which she explains through the lens of Anishinaabeg law must be a process determined by the survivors. From my learning through this community-based research over the last two years, I believe central steps in this process are forming genuine relationships and respecting Indigenous leadership. It is not only the relationships themselves, but understanding how relations are held and honoured in the cultures of the peoples you are engaging with and the responsibility that comes with relationship. The relationships I have formed with community members over the course of this project are some that I hope to continue to be part of and honour into the future. I understand them, in part, as part of my role and responsibilities engrained in the numbered Treaties. Understood from an Indigenous perspective, the Treaties are agreements to share the land in "a relationship of mutual assistance and care" (Craft, 2014, p. 6). One of the things that I have been most amazed by through this process is the willingness of community members to engage in these relationships and partnerships, despite everything they, their communities, and their ancestors have gone through as a result of my ancestors and communities. The incredible spirit of kindness and sharing among the people we met, as many Elders told me, reflects the intent of reciprocity with which they have approached their relationships with newcomers on Turtle Island since the beginning. I have learned so much

from this seemingly simple principle of reciprocity, and have tried to bring it into my research. I try to honour this reciprocity, in part, by entering relationships with a genuine heart, an open mind, generosity, and true respect for the leadership of Indigenous peoples in determining what those relationships might look like and where they may lead.

Another important teaching in this research journey, shared particularly by Elder Courchene, has been humility. This research does not aim to 'validate' the knowledge and work of communities through the academy, but rather to support it through knowledge translation and mobilization. As Yuchi scholar Daniel Wildcat (2013) says, research and writing such as this only "confirms what those of us who have been paying attention to our homelands already know" (p.1). Throughout the project, I have tried to challenge institutional biases and my own academic training that often suggests superiority of western knowledges, and to be cognizant that as much as non-Indigenous scholars may be committed to decolonizing principles, we still risk reproducing (neo)colonial ways of knowing due in part to our positions within western institutions (Cameron, de Leeuw, & Desbiens, 2014). I tried to address this in part by prioritizing the written and video outputs that I have produced for the communities above the writing of this thesis. For example, I am working on a book project with Turtle Lodge as another medium to share the knowledge gathered at Onjisay Aki, which has been a major focus and will continue to be after this thesis is completed. This is a step in shifting away from the conventional dynamic of the University as the sole knowledge producer. I have continuously tried to find the balance between understanding myself as a novice and grateful learner of these different ways of knowing, while also bringing my skills and knowledge when appropriate in ways that can benefit the community. At the same time, while I can listen to their guidance and try to work to support communities in their acts of resurgence – hopefully contributing in a small way to true, decolonizing reconciliation – only the participants and communities themselves can say whether I was successful in doing so. Further, I know that participatory and community-based research is no heroic or altruistic act (Coombes, Johnson, & Howitt, 2014), and have been reflecting on how I have benefited from this research, the role that it has played in advancing my work and future opportunities, and how this plays into the colonial systems I aim to work against. The question now is whether/how I can use these benefits to continue working with communities to challenge these power structures going forward.

On the note of benefits, an interesting question has arisen around the degree that I will likely receive from the University, signaling that I have fulfilled their requirements. If the aim of

CBR is to serve the goals of the community, how it is that the University alone would decide whether I have been successful in this aim? As I am finishing this thesis and preparing for my defense, this question has been raised in conversations with our community partners from Turtle Lodge, who have suggested that they may devise their own systems of accreditation for myself and future students and collaborators. It seems only reasonable that community would play a role in evaluating my work as a student, and receive support in doing so. As we seek to collaboratively push the boundaries of western institutions – and perhaps step outside them – new, interesting, and challenging questions will continue to arise, and should be addressed with guidance from community partners.

Reflecting on this work in a broader sense, I have thought a lot about what it means for newcomers on this land to learn how to develop a reciprocal relationship with the land such as that which Indigenous peoples have developed over millennia. Potawatomi scholar Robin Kimmerer (2013) writes about Indigenous wisdom of place, its importance in our current times, and how settlers/immigrants might learn to "become Indigenous to place." Recognizing that Indigeneity is a birth-right and cannot just be assumed through relationships, she suggests that perhaps newcomers or "Second People" can become "naturalized," just as some introduced plant species have found their place within native ecosystems on Turtle Island. She explains:

> *To become naturalized to place means to live as if this is the land that feeds you, as if these are the streams from which you drink, that build your body and fill your spirit. To become naturalized is to know that your ancestors lie in this ground. Here you will give your gifts and meet your responsibilities. To become naturalized is to live as if your children's future matters, to take care of the land as if our lives and the lives of all our relatives depend on it. Because they do.* (Kimmerer, 2013, p. 214-215)

These are words that guide me, and responsibilities that I feel deeply. But I also recognize, as Kimmerer (2013) warns, that newcomers must not seek to adopt and appropriate Indigenous wisdom, but to learn from it to inform the writing of our own stories of relationship to place. I think the first step is learning to listen. In this sense, I hope this research has played a role in sharing this wisdom in a way that can help all people, both Indigenous and non-Indigenous, as we struggle to understand, grapple with, and respond to the interconnected stories of colonization and climate change in Canada.

5.3 Recommendations

With these results and contributions, this research has identified many areas for further investigation. Given the lack of literature on IK on climate change in the Canadian Prairies, and on creative collaborative ways of sharing Indigenous perspectives, there is a need for more work in this area. In particular, we suggest that future research on IK and climate change should seek to: meaningfully engage with spiritual sources of knowledge and ceremonial contexts; explore the underlying values, philosophies, and worldviews in which IK is embedded; include a focus on Indigenous-led action and solutions; further develop and explore theory and praxis at the intersection of sustainable self-determination and climate solutions; and continue to develop innovative, creative, and collaborative ways to mobilize knowledge which decolonize research processes. Lessons from this research indicate that use of PV methods in this context should pay particular attention to capacity building and technical skill-sharing, audience engagement, inclusion of Indigenous languages, and the relationship between participation and video quality.

This research also offers direction for future climate research and solutions more broadly. With the guidance from Elder Courchene and many participants across the region that "climate change is about a change of heart" (Chapter 3), there is a need to further collaboratively explore what that might look like in practice across cultures. Participants' call for a paradigm shift informed by Indigenous knowledge systems requires a stronger bridge be built and traversed between western and Indigenous worldviews that allows broader audiences to connect with and continue to implement this teaching. Further inter-epistemological research can help to shed light on this area but it requires trust, mutual respect, and a commitment by researchers to explore ways to centre and engage Indigenous values and philosophies in this context without misinterpreting or appropriating them. In continuing to move forward honouring these different ways of knowing, researchers must resist conventional approaches and reimagine and redefine how we view climate change impacts and associated solutions. We, as academics, must continue to seek guidance from communities to better understand how research can support Indigenous leadership and knowledge in a manner that challenges the often hierarchical and hegemonic way in which Universities and University-trained professionals interact with Indigenous peoples and communities. This research has in many ways been a living example of the inter-epistemological research that needs to be expanded upon, explicitly acknowledging and engaging with different ways of knowing such as through ceremony and from the land. However, as a non-Indigenous western-trained scholar this

was only possible with the direct feedback, guidance, and involvement of Indigenous community partners rooted in their distinct ways of knowing. A move towards inter-epistemological research "downscal[es] western science to a position of equal partnership" (Murphy, 2011, p. 493) and therefore must provide equal support for the leadership and contributions of community partners. As academics we must be aware of the power relationships that clearly exist but often go unsaid. For example, university professors and their graduate students get paid to do their research, but communities are often left to participate without being compensated for their time. In these collaborations, it is important to develop mechanisms for reflecting on and evaluating how benefits are accruing and to whom, and have meaningful ways for projects to collect feedback throughout the process so that this can be discussed and equity be maintained throughout the lifecycle of a project. Within this project, to the best of our ability, we have tried to have honest conversations with our partners, and ensure that imbalances in support, resources, and advisory roles between communities and the University in CBR have been addressed. As this research shows, despite differences in beliefs and priorities within and across communities and cultures, there is significant common ground which we must find to continue build effective and collective solutions.

5.4 Conclusions

The Anishinaabeg Seven Fires Prophecy foretold of the current time of the Seventh Fire, when amidst great turmoil and changes in the world, the Oshkimaadiziig ("new people") would emerge to revive the languages, philosophies, traditions, and ways of being and knowing that colonial systems sought to obliterate (Simpson, 2008a; 2011). They would bring about a process of decolonization, and forge relationships with other Nations and nation-states based on Indigenous principles of peace and justice (Simpson, 2008a). Winona LaDuke (2014) describes this time of the Seventh Fire as a crossroads, with a choice between one path well-worn and scorched and the other new and green; choosing the green path is "the work of restoring Indigenous ways of living and land-based economics for the seventh generation" (p. 239). As argued herein, Elder Dave Courchene, the Turtle Lodge, and Indigenous communities across the Prairies are bringing guidance and inspiration for their communities and humanity more broadly to pursue the green path, through actions rooted in their ancestral knowledges and connections to the land.

In light of the intrinsic links between climate change and colonialism, and the disproportionate impacts that Indigenous peoples stand to face, there is both a practical and a moral

imperative to heed the wisdom and leadership of Indigenous peoples in attempts to address environmental problems. The complexity of the problem of climate change requires diverse approaches and multifaceted solutions, in which Indigenous peoples and their knowledges can and are playing a vital role. Indigenous peoples have rich knowledges which are developed through relationship with the natural world, carry valuable observations of environmental change, and, perhaps most importantly, are embedded within distinct worldviews, values, and philosophies which can provide inspiration and guidance in this time of transformation. This invites a departure from the Eurocentric philosophies that have led to this point, and challenges humanity to collectively define a new path forward informed in part by Indigenous ethics of relationality and stewardship and built through synergies between diverse knowledges and cultures. To move as a society from a culture of consumption to one of creation (Simpson, 2011), we must follow and support the cultures who still maintain those relational and regenerative ways of knowing and being.

Appendix A: List of Onjisay Aki Climate Summit Participants

(from Turtle Lodge, 2017a)

*Dave Courchene (Nii Gaani Aki inini – Leading Earth Man), Knowledge Keeper of the Anishinabe Nation, Founder of Turtle Lodge, Convener of the Onjisay Aki International Climate Summit

*Katherine Whitecloud, Knowledge Keeper and Dakota Nation Spokesperson

Paul K. Chappell, Peace Leadership Director, Nuclear Age Peace Foundation

*Deanna Pashe (Taksha' Pu'juta Win), Dakota and Anishinabe Nations, Assembly of First Nations Youth Council Senior Executive

Bill McKibben, Founder of 350.org

*Chief Jack Caesar (Nei Kau Da Zo), Knowledge Keeper and Chief of Ross River Dene Nation

*Alvin Manitopyes, Knowledge Keeper of the Plains Cree and Anishnawbe Nations

*Florence Paynter, Knowledge Keeper of the Anishinabe Nation

*Stephen Kakfwi, Dene Nation, Former President of the Dene Nation and Former Premier of the Northwest Territories

*Chief Arvol Looking Horse, Knowledge Keeper and Spiritual Leader of the Dakota, Lakota and Nakota Nation

*Antaurko, Knowledge Keeper and Spiritual Leader of the Inka Amauta, Peru

*Alexander Kofi, West African, Blackfoot Lakota and Cherokee/Choctaw Nations, Athlete, Reggae Artist, Activist, USA

Scott Vaughan, President and CEO, International Institute for Sustainable Development

*Miles Richardson, Haida Nation, Former President of the Council of the Haida Nation

Jeewan Chanicka, Superintendent of Equity, Anti-Racism and Anti-Oppression, Toronto District School Board

Everton Gordon, Interim CEO of the Jamaican Canadian Association (JCA); Executive Director of Caribbean African Canadian (CAFCAN) Social Services, Canada

*Elmer Courchene, Knowledge Keeper of the Anishinaabe Nation, Lead Elder of the Assembly of First Nations Elders' Council

*Yoshimaru Higa (Kumiko Ahara), Knowledge Keeper, Shaman and Spiritual Leader, Japan

*<u>Lawrence Nayally,</u> Dene Nation, Host of Trails End, CBC News

*<u>Vivian Delgado</u>, Knowledge Keeper of the Tewa Pueblo and Yaqui Pueblo Nation from Taos Territory

*<u>Paqarina Wanka (Sonia Astuhuaman)</u>, Knowledge Keeper of the Inka Nation, Andean Medicine Woman

*<u>T'ito Kuntur-Kanki (Rodolfo Ttito Condori)</u>, Knowledge Keeper of the Inka Nation, Member of the Andean Masters Community

Indigenous participants

Appendix B: Onjisay Aki Climate Calls to Action

Written by the participants of the Onjisay Aki International Climate Summit (Appendix A)
Found at http://onjisay-aki.org/onjisay-aki-international-climate-calls-action

ONJISAY AKI INTERNATIONAL CLIMATE CALLS TO ACTION

Developed by Consensus by the Speakers of the

Onjisay Aki – Our Changing Earth – International Climate Summit

Turtle Lodge | Sagkeeng First Nation | Manitoba, Canada

The Onjisay Aki International Climate Summit was held at the Turtle Lodge in Sagkeeng First Nation, Manitoba, Canada from June 8-10, 2017. The Summit was led by Indigenous Peoples from the center of the continent of Turtle Island (North America) who steered the proceedings by following Indigenous protocols of engaging and sharing ancestral knowledges concerning relationships with the natural world. Twenty-four speakers – Indigenous knowledge keepers and international climate leaders – were invited by the Turtle Lodge to represent the diversity of the human family, highlighting in accordance with Indigenous teachings that everyone has something to contribute. These individuals came together as concerned citizens out of a common concern for the Earth and future generations.

"The Earth is our mother, we need to take care of her. That responsibility belongs to each and every one of us." – Elmer Courchene, Anishinabe Nation

Onjisay Aki means "our changing Earth" in the Anishinabe language. *Onjisay Aki* is a word that offers hope for the future. It acknowledges the leadership of Mother Earth herself, who as a living being carries the true influence to bring birth to new life, to counter imbalances that lead to issues like climate change, and to restore balance in the world. *Onjisay Aki* also means that as Earth changes, so must we as people. This change cannot be forced, but must come from within us and be based on an understanding found through observation of the Earth itself, and ancestral and natural laws.

"Our culture has guided us how to live the right way, how to listen, how to understand the natural law." – Miles Richardson, Haida Nation

To effectively deal with climate change there must be a change of heart. This change is illustrated by the Trail of the Turtle, a body of ancestral knowledge and teachings, introduced at the Summit, that inspire us to walk a path of life that is based on values and laws of conduct.

"We are part of the generation that has created this catastrophe, therefore it is our responsibility, every day, to do something about it." – Katherine Whitecloud, Dakota Nation

The Onjisay Aki International Climate Summit convened speakers over three days who engaged in activities that encouraged the comprehension and appreciation of Indigenous knowledge, and roundtable discussions that focused on action. Especially significant was the lifting of a special Pipe that had been commissioned by the Elders, and the coming together and sharing of knowledge from the North and South Americas, in fulfillment of a prophecy commonly identified among Indigenous Peoples as the prophecy of the Eagle and the Condor. The Summit culminated with an ancient ceremony to build a Thunderbird nest, to acknowledge and reestablish a human alliance with nature.

"There is still so much incredible knowledge that our people have that the world has never heard." - Lawrence Nayally, Dene Nation

The roundtable discussion centered on four major themes: *ancestral knowledge*, *sovereignty*, *relationships*, and *transformation*. The following Calls to Action, developed at the Summit, have been established in accordance with the Trail of the Turtle. They are steps that we must take to return to a balanced way of life, founded on stewardship of the Earth.
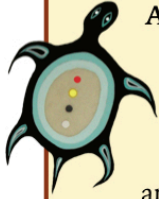
ANCESTRAL KNOWLEDGE is the foundation for living in balance with the Earth. The traditional wisdom of Indigenous Peoples, rooted in laws of peaceful conduct, and a love for and spiritual relationship with the land, air, water, fire, and plant, animal, human and celestial worlds, has allowed them to live sustainably within diverse homelands for millennia. Indigenous Nations were given original instructions of how to live with the land and her elements, here on this continent we call Turtle Island, and around the globe. This wisdom and knowledge of stewardship techniques is a gift from the Creator and is needed to help humanity navigate an uncertain future in an era of climate change.

Call to Action 1. To support numerous forms of education and training disciplines throughout Indigenous homelands based on the wisdom of Elders and Knowledge Keepers. Rites of Passage are an especially important ancestral tradition of educating Youth. The ultimate goal is the training and development of Young People as true leaders who will walk a road of peace and take care of the Earth.

Call to Action 2. To support the development of "Ancestral Schools of Knowledge" overseen by the Elders who facilitate intergenerational knowledge transmission between Youth and Elders. The establishment of these Schools is a foundational step in our shared journey towards reconciliation and sustainability.

Call to Action 3. To support revitalization of Indigenous languages, which are foundational to stewardship. Indigenous languages are connected to our land-based ancestral knowledge. Critical concepts and teachings are embedded in Indigenous language, stories and songs.

Call to Action 4. To support ancestral knowledge being shared around the globe, beginning with North and South America, building on existing relationships and further fulfilling the prophecy of the Eagle and the Condor.
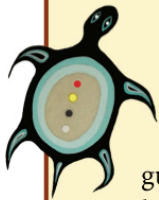
SOVEREIGNTY for Indigenous Peoples – over ecological, cultural, political, and legal environments and communities – is fundamental for fostering stewardship. Sovereign Indigenous Nations will ensure the wisdom of their cultures remains strong and able to guide humanity into the future. We recognize that Sovereignty for Indigenous Nations is defined by Indigenous people and based upon relationships with the Creator and the Earth.

Call to Action 5. To support Indigenous communities in defining their own Nationhood, based on their ancestral laws and understandings of the natural world, as the foundation of governance of their territories.

Call to Action 6. To support the Indigenous Leadership Initiative's Guardianship Network that promotes Nationhood and stewardship over Indigenous homelands. This network supports Indigenous Peoples in taking responsibility for their traditional territories by demonstrating leadership as caretakers of these lands. This network also supports our collective duty to train young people to carry this stewardship into the future.

Call to Action 7. To support the right of Indigenous communities in developing and having Sovereign control over their energy systems.

Glossary

aanikoobijigan – ancestors or decendants in Anishinaabemowin

Anishinaabeg – Indigenous peoples of central North America, including the Odawa, Ojibwe, Potawatomi, Oji-Cree, and Algonquin

Anishinaabemowin – the Anishinaabe (Ojibwe) language

bimiikoomaagewin – Anishinaabe stewardship concepts (as described by Borrows 2006)

binesi – thunderbirds

Canadian Prairies – Herein Prairies refer to the region now encompassed in the Prairie provinces in Canada – Alberta, Saskatchewan, and Manitoba – which include part of traditional territories of Indigenous Nations signatory to Treaties 1, 2, 4, 5, 6, 7, 8, and 10.

climate change– A change in the earth's climate persisting over an extended period of time caused by human activity altering the composition of the atmosphere or land use (IPCC, 2013). We use this definition to engage with the academic discourse, but recognize the term as a construction of western knowledge systems. This is further discussed in Chapter 3.

colonial-capitalist agenda - here refers to "the destruction or dispersal of Indigenous populations from their homelands to ensure access for industrial exploitation enterprises and concomitant non-indigenous settlements" as discussed by Alfred (2009a, p. 44).

Eurocentric/western paradigm – While this is a broad, complex term with many definitions, Smith's (2007) characterization is adopted here, describing "a construction of knowledge that separates us from the environment and also promotes a notion of economic progress that presumes domination over our resources" (p. 197). Other descriptors of Eurocentric sciences include uniformitarianism, reductionism, predictive validity, anthropocentrism, and positivism (see Aikenhead and Ogawa (2007) for a longer discussion).

Indigenous knowledge (IK) – I refrain from offering a singular definition for Indigenous Knowledge, but offer a description in section 1.3.1. Generally, IK is described as diverse knowledges developed by Indigenous peoples through close connection with and observation of local environments passed on through generations (Battiste & Henderson, 2000).

Knowledge Keeper – An individual recognized in their community for carrying specific Indigenous knowledge. Knowledge Keepers may be Elders or community members.

Gizhe-manidoo – the Great Spirit, Creator

Nehiyawewin – the Nêhiyawi (Cree) language

mino-bimaadiziwin – the good way of life

onjisay aki – the earth is changing, giving birth to a new life (Turtle Lodge, 2017c)

Oshkimaadiziig – the people responsible for revitalization of language and culture in the time of the Seventh Fire (as discussed by Simpson 2008a)

renewable energy – non-fossil fuel energy sources including solar, wind, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogases (Krupa, 2012a).

sustainable self-determination - a process of "Indigenous livelihoods, food security, community governance, and relationships to the natural world and ceremonial life that enables the transmission of these cultural practices to future generations" (Corntassel, 2008, p. 124)

List of videos

Chapter 3

Onjisay Aki International Climate Calls to Action
https://www.youtube.com/watch?v=xqPKCQCcjiU&t=12s

Onjisay Aki and the prophecy of the Eagle and the Condor
https://www.youtube.com/watch?v=mmIrp9tA0ss&t=5s

Chapter 4

Lubicon Lake First Nation's land-based culture camp
https://app.frame.io/presentations/31701df1-60d8-4964-87e5-a9dfb65b892b

Montana First Nation's community-owned solar company
https://youtu.be/Q2g6MdOFfR8

Lubicon Lake First Nation's Pitipan solar project
https://youtu.be/1zocSLaQl64

Community solar in the Métis community of the Northern Village of Green Lake
https://youtu.be/ZRpAncrfMbE

Cowessess First Nation's wind battery project.
https://youtu.be/kkZwh4o6ehU

Eriel Tchekwie Deranger on grassroots climate solutions
https://app.frame.io/presentations/57fde7d1-b744-40c6-8991-6be59227a1e0

Dave Courchene on Indigenous climate leadership and the Onjisay Aki Climate Summit
https://app.frame.io/presentations/c0a65542-3c2f-4f2e-8f3d-28b9173e6579

Dr. Leroy Little Bear on Buffalo Restoration and Climate Change
https://app.frame.io/presentation s/edf280dd-df53-49b5-b7ee-76b 3508e044c

Figure Sources

Figure 1. Photograph courtesy of Turtle Lodge, www.turtlelodge.org

Figure 2. Graphic by Laura Cameron

Figure 3. Graphic by Laura Cameron with theory drawn from Chilisa, 2012; Kovach, 2009; Murphy, 2011; Smith, 1999; Wilson, 2008.

Figure 4. Base map of Treaty territories from native-land.ca, modified by Laura Cameron

Figure 5. Photographs by Laura Cameron (top left, bottom right) and Kevin Settee (bottom left, top right)

Figure 6. Photographs by Laura Cameron

Figure 7. Photographs by Steve McCullough (left) and Turtle Lodge (right)

Figure 8. Graphic by Natalie Baird and Laura Cameron

Figure 9. Photographs by Steve McCullough

Figure 10. Photograph by Steve McCullough

Figure 11. Graphic by Laura Cameron

Figure 12. Graphic by Laura Cameron

Figure 13. Video still from Onjisay Aki Climate Calls to Action video

Figure 14. Photograph by Ken Porteous, retrieved from https://www.gov.mb.ca/sd/parks/popular_parks/eastern/whiteshell_petro.html

Figure 15. Photographs by Marcel Kreutzer (top left, bottom right), Kevin Settee (top right) and Laura Cameron (bottom left)

Figure 16. Map screenshot from the Indigenous Renewable Energy initiative, indigenousenergy.ca

Figure 17. Base map of Treaty territories from native-land.ca, modified by Laura Cameron

Figure 18. Video stills shot by Marcel Kreutzer

Figure 19. Video stills and photographs shot by Marcel Kreutzer

Figure 20. Video stills shot by Marcel Kreutzer (left) and Spencer Mann (right)

Figure 21. Video still shot by Marcel Kreutzer

Figure 22. Video still shot by Marcel Kreutzer

Figure 23. Graphic by Laura Cameron

Figure 24. Graphic by Laura Cameron

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