

# **ANALYZING FOREST POLICY TO ADVANCE INDIGENOUS-LED FORESTRY INITIATIVES AND INCREASE ADAPTIVE CAPACITY**

By

Patrick Carty

A Thesis submitted to the Faculty of Graduate Studies in partial fulfillment of the requirements for the Master of Environment Degree.

Department of Environmental Studies and Sciences and Department of Geography  
Master of Environment in Environmental and Social Change  
The University of Winnipeg  
Winnipeg, Manitoba, Canada

Copyright © 2023 Patrick Carty



## ABSTRACT

Indigenous groups across Canada continue to regain sovereignty over their traditional territories and this research focuses on their involvement in Manitoba's forest sector. A large proportion of First Nations communities in Manitoba are forest-based, and there is a revitalized opportunity and vigor for communities to build successful and sustainable forestry initiatives that could address their respective goals while building adaptive capacity towards climate change impacts. The focus of this research was to understand the barriers and opportunities Indigenous groups experience in respect to federal and provincial forest policy and how Indigenous-led forestry initiatives can enhance the adaptive capacity and climate change resilience in First Nation communities.

The first research objective was to describe federal, provincial, and Indigenous policy measures impacting Indigenous-led forestry. This was achieved through a systematic policy scan and interviews with Indigenous forestry experts that uncovered various impactful measures, including enabling legislation and preventative legislation. The second objective was to identify policy provisions that could support or hinder Indigenous-led forestry. The results show that while Indigenous groups are often excluded from forest policies and policy making processes, the provincial and federal governments have increased efforts towards Indigenous inclusion in recent years. A notable example is the progressive timber harvesting agreement that was negotiated between the provincial government and Norway House Cree Nation in 2022. The third objective aimed to identify opportunities for policy learning about Indigenous-led forestry. Indigenous inclusion in policy making could lead to greater learning opportunities and this research demonstrates there are increased opportunities for policy learning to occur in Manitoba's forest sector.

The final objective was to develop recommendations for improving the prospects for Indigenous-led forestry based on accrued evidence and consultation with First Nations communities. While recent strides have been made in Manitoba in advancing Indigenous participation in the forest sector, the wood supply surrounding many First Nations remains underutilized. Moving forward, the success of Indigenous-led forestry initiatives will hinge on increased collaboration with governments and industry, provincial reform of forestry legislation that does not explicitly address Indigenous rights and interests, and funding programs that could address the economic and logistical barriers associated with developing a local forestry initiative. Indigenous-led forestry initiatives that seek to advance the unique goals of individual First Nations remain limited in Manitoba, and this research hopes to help address this gap.

## ACKNOWLEDGEMENTS

I would like to extend my gratitude towards Tom Scott of Cross Lake First Nation, Pat Bayer and Alex Budd of Norway House Cree Nation, and Eric Cameron of Swan Lake First Nation for welcoming me into your communities and making this research possible. Thank you to all of the interview participants who took part in this research. Your expertise, perspectives and worldviews provided for the backbone of this research.

I am extremely grateful to my supervisor, Dr. Alan Diduck, who has been a true mentor and friend over my eight years at the University of Winnipeg. You are as much of an inspiration now as you were when you taught my first university course, and much of what you have taught me extends far beyond academia. I would also like to thank my committee members, Laurel Gardiner, Dr. Ryan Bullock and Dr. Richard Westwood for their wealth of knowledge and for always challenging me with new perspectives. And thanks to my external examiner, Dr. Tom Beckley, for your encouragement and fresh perspective regarding this research.

Thank you to Dr. Bullock and all of my colleagues at the Environment and Society Research Group for your friendship and research support over the past two years. And thanks to my MESC colleagues for your camaraderie, my friends and family, who never (admittedly) tired of hearing me talk about my masters, and my fiancé, Kati, for being my personal tech support and sounding board.

Finally, I would like to acknowledge the Social Sciences and Humanities Research Council, Polar Knowledge Canada, Research Manitoba, and The University of Winnipeg for the research funding provided to help support my efforts.

## LIST OF ACRONYMS AND ABBREVIATIONS

<b>Acronym</b>	<b>Agency, Program, or Term</b>
CCAB	Canadian Council for Aboriginal Business
CIR and NA	Crown-Indigenous Relations and Northern Affairs
CKPI	Canadian Kraft Paper Industries
C-LAND	Climate Learning and Adaptation for Northern Development
CSA	Canadian Standards Association
EMAP	Emergency Management Assistance Program
ESRG	Environment and Society Research Group
FCPP	Frontier Centre for Public Policy
FEAs	Forest Experimental Areas
FML	Forest Management License
FMLA	Forest Management License Agreements
FNIGC	The First Nations Information Governance Centre
FNLMA	First Nations Land Management Act
FPAC	Forest Products Association of Canada
FSC	Forest Stewardship Council
HPCF	Harrop-Procter Community Forest
IDSS	Indigenous Development and Support Services
IFI	Indigenous Forestry Initiative
IPCC	Intergovernmental Panel on Climate Change
ISC	Indigenous Services Canada
LP	Louisiana Pacific Canada LTD
MFLNRO	Ministry of Forests Lands and Natural Resource Operations
NAFA	National Aboriginal Forestry Association
NBCC	National Building Code of Canada
NCTP	National Centre for Truth and Reconciliation
NFMC	Nisokapawino Forestry Management Corporation
NHCN	Norway House Cree Nation
NRCan	Natural Resources Canada
OYEP	Outland Youth Employment Program
PCFN	Pine Creek First Nation
SFI	Sustainable Forestry Initiative
SFM	Sustainable Forest Management
SHL	Sustainable Harvest Levels
SPI	Strategic Partnership Initiative
TCPS2	Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans
TSA	Timber Sale Agreements
UHREB	The University Human Ethics Research Ethics Board

UNDRIP  
WSA

United Nations Declaration on the Rights of Indigenous Peoples  
Wendaban Stewardship Authority

## LIST OF TABLES

<b>Table 1:</b> NVivo design framework.....	44
<b>Table 2:</b> Specific sections of provincial reports, guidelines and frameworks that could impact Indigenous participation in forestry.....	57
<b>Table 3:</b> Barriers to Indigenous forestry prospects.....	61
<b>Table 4:</b> Enablers of Indigenous forestry prospects.....	70



## TABLE OF CONTENTS

<b>ABSTRACT</b> .....	<b>iii</b>
<b>ACKNOWLEDGEMENTS</b> .....	<b>v</b>
<b>LIST OF ACRONYMS AND ABBREVIATIONS</b> .....	<b>vi</b>
<b>LIST OF TABLES</b> .....	<b>viii</b>
<b>CHAPTER 1: INTRODUCTION</b> .....	<b>1</b>
<b>1.1. Background</b> .....	<b>1</b>
<b>1.2. Research Objectives</b> .....	<b>2</b>
<b>1.3. Research Design</b> .....	<b>3</b>
1.3.1. Organization of the Thesis .....	<b>3</b>
<b>CHAPTER 2: LITERATURE REVIEW</b> .....	<b>5</b>
<b>2.1. Chapter overview</b> .....	<b>5</b>
<b>2.2. Sustainable forest management in Canada</b> .....	<b>5</b>
2.2.1. Manitoba’s timber industry .....	<b>6</b>
2.2.2. Co-management in the forestry sector .....	<b>7</b>
2.2.3. Meaningful Indigenous participation .....	<b>10</b>
2.2.4. Successful examples of First Nations co-managing forest resources.....	<b>11</b>
<b>2.3. Impacts of climate change on forest management</b> .....	<b>13</b>
2.3.1. Climate risks and vulnerabilities in the forest sector .....	<b>14</b>
2.3.2. Range expansion and species migration.....	<b>16</b>
2.3.3. Wildfire intensity and frequency .....	<b>17</b>
<b>2.4. Forest-based communities</b> .....	<b>20</b>
2.4.1. Forest-based Indigenous communities in Manitoba.....	<b>20</b>
2.4.2. Forest tenures and agreements in Manitoba .....	<b>21</b>
<b>2.5. Policy learning as a tool for change</b> .....	<b>24</b>
2.5.1. The roots of policy learning and how policies are impacted by learning opportunities .....	<b>25</b>
2.5.2. Policy learning in the forestry sector.....	<b>27</b>
2.5.3. How policy learning can influence policy users.....	<b>28</b>
<b>2.6. Forest policy and opportunities for the future</b> .....	<b>29</b>
2.6.1. Forest policy in Canada and Manitoba.....	<b>29</b>
2.6.2. Opportunities for policy reform and First Nations involvement in the forest sector	<b>31</b>
<b>2.7. Chapter Summary</b> .....	<b>33</b>
<b>CHAPTER 3: METHODS</b> .....	<b>35</b>
<b>3.1. Research design</b> .....	<b>35</b>

<b>3.2. Philosophical approach</b> .....	<b>35</b>
3.2.1. Transformative worldview .....	35
3.2.2. Decolonized research approach.....	36
3.2.3. Research ethics protocol and community engagement .....	37
<b>3.3. Data collection</b> .....	<b>39</b>
3.3.1. Policy scan.....	39
3.3.2. First Nation community visits.....	40
3.3.3. Semi-structured interviews .....	40
3.3.4. Interview procedures and protocol.....	42
<b>3.4. Qualitative data analysis</b> .....	<b>42</b>
3.4.1. Analytic framework .....	43
3.4.2. Coding.....	46
<b>3.5. Qualitative validity</b> .....	<b>47</b>
<b>3.6. Chapter summary</b> .....	<b>48</b>
<b>CHAPTER 4: RESULTS</b> .....	<b>50</b>
<b>4.1. Federal, Indigenous, and provincial policy measures impacting Indigenous forestry</b> .....	<b>50</b>
4.1.1. Federal policy measures.....	50
4.1.2. Indigenous policy measures .....	55
4.1.3. Provincial policy measures .....	56
<b>4.2. Barriers to Indigenous forestry</b> .....	<b>61</b>
4.2.1. Policy shortcomings.....	62
4.2.2. Logistical roadblocks .....	65
4.2.3. Economic constraints .....	66
4.2.4. Climate change impacts .....	68
<b>4.3. Enablers of Indigenous forestry prospects</b> .....	<b>69</b>
4.3.1. Supportive policy mechanisms .....	70
4.3.2. Economic and community development.....	75
4.3.3. Climate change adaptation and mitigation.....	78
<b>4.4. Opportunities for policy learning about Indigenous-led forestry</b> .....	<b>80</b>
4.4.1. Learning opportunities within specific policies and organizations.....	80
4.4.2. Policy learning opportunities and barriers discussed by interview participants .....	83
<b>4.5. Chapter summary</b> .....	<b>85</b>
<b>CHAPTER FIVE: DISCUSSION</b> .....	<b>88</b>
<b>5.1. The viability of Indigenous-led forestry in northern Manitoba</b> .....	<b>88</b>
5.1.1. Wood supply and access .....	88
5.1.2. Funding and economic development .....	90
5.1.3. Lumber grading.....	92
<b>5.2. Indigenous inclusion in the forest sector</b> .....	<b>93</b>
5.2.1. Inclusion in provincial policy .....	93
5.2.2. Inclusion in federal policy .....	95

5.2.3. Opportunities for policy learning .....	97
<b>5.3. Building adaptive capacity in northern forest-based communities .....</b>	<b>98</b>
5.3.1. Bridging forestry initiatives and FireSmart programs .....	98
<b>5.4. Chapter Summary .....</b>	<b>99</b>
<b>CHAPTER SIX: CONCLUSIONS AND FINAL RECOMMENDATIONS.....</b>	<b>102</b>
<b>6.1. Project summary .....</b>	<b>102</b>
<b>6.2. Conclusions and recommendations .....</b>	<b>103</b>
6.2.1. Increased collaboration .....	104
6.2.2. Policy reform .....	105
6.2.3. Funding avenues .....	106
6.2.4. Final thoughts.....	107
<b>6.3. Summary of main findings .....</b>	<b>108</b>
<b>6.4. Contributions to knowledge .....</b>	<b>109</b>
<b>6.5. Future research .....</b>	<b>110</b>
<b>6.6. Limitations .....</b>	<b>111</b>
<b>REFERENCES.....</b>	<b>113</b>
<b>APPENDIX A: Policy Scan Process .....</b>	<b>123</b>
<b>APPENDIX B: Search Tracking Table.....</b>	<b>125</b>
<b>APPENDIX C: Framework Used for Aggregating and Reviewing Policy Mechanisms .....</b>	<b>126</b>
<b>APPENDIX D: NVivo Codebook .....</b>	<b>127</b>
<b>APPENDIX E: Indigenous Data Management Framework .....</b>	<b>132</b>
<b>APPENDIX F: Interview Schedule and Consent Form .....</b>	<b>133</b>
<b>APPENDIX G: Community Engagement and COVID-19 Protocol .....</b>	<b>142</b>



## CHAPTER 1: INTRODUCTION

### 1.1. Background

Climate change is at the forefront of global issues and is especially impactful in northern forest-based Indigenous communities (IPCC, 2014; Warren and Lulham, 2021). Wildfire and pest infestation risks are increasing, which could impact the dominant boreal tree species surrounding local communities (Williamson et al., 2019). Further, seasonal transportation windows to import and export products have reduced in length (Williamson et al., 2019). Understanding how climate change will impact the range and species composition of the boreal forest will be crucial in order to make future forestry decisions concerning forest-based communities. Compounding matters is that basic supplies, including building materials, are often imported from other areas. Bringing resources into remote forest-based communities is costly, leading to inadequate housing stocks in some communities (Government of Canada, 2017). These matters could potentially be mitigated by Indigenous-led forestry, a concept which is defined in Chapter 2. Indigenous-led forestry could diversify local livelihoods, link traditional knowledge and conventional forest management practices, and avoid the conflict among Indigenous communities, governments and industry so often seen in conventional large-scale industrial forestry operations (Palaschuk and Bullock, 2019). These benefits could enhance local and regional adaptive capacity and resilience (Assuah and Sinclair, 2019; Hotte et al., 2019), and so understanding the potential for and barriers to Indigenous-led forestry could prove crucial in adapting to climate change risks.

Manitoba contains a largely intact boreal forest that has been deemed a “crown jewel” by conservation groups (Lawler and Bullock, 2017). While successes of community forestry

projects in British Columbia involving meaningful Indigenous participation have enabled communities to better adapt to climate change (Assuah and Sinclair, 2019; Hotte et al., 2019), the Manitoba government has yet to support Indigenous-led forestry to address conservation and northern development challenges (Lawler and Bullock, 2017). My thesis project will help fill a part of this gap by advancing understanding of Indigenous-led forestry and identifying opportunities for and challenges to policy reform in Manitoba. Regarding policy reform, the thesis will employ a policy learning conceptual lens. Policy learning can be defined as the way in which policy actors utilize knowledge that comes from social interactions or lived experiences (Dunlop and Radaelli, 2018). While not all policy processes hold the same probability of creating learning outcomes, learning is still a common occurrence during the process of knowledge acquisition (Dunlop and Radeilli, 2018). As Gerlak et al. (2017) suggest, research into learning in environmental policy has increased rapidly over the last two decades as environmental issues provide many opportunities for learning processes to be studied.

## **1.2. Research Objectives**

My thesis will contribute to a five-year University of Winnipeg-based project called Climate Learning and Adaptation for Northern Development (C-LAND). In recent years, there has been increasing interest in implementing Indigenous-led forestry initiatives in northern Manitoba that could result in local usage of the timber products produced (Gardiner, 2022). My research objectives were to:

- 1) describe federal, provincial, and Indigenous policy measures impacting Indigenous-led forestry;
- 2) identify policy provisions that support or hinder Indigenous-led forestry;
- 3) identify opportunities for policy learning about Indigenous led forestry; and

- 4) make recommendations for improving the prospects for Indigenous-led forestry based on accrued evidence and consultation with First Nations communities.

### **1.3. Research Design**

The research approach was qualitative (Creswell, 2017) and involved a policy scan to review relevant policy, planning, and governance documents that could directly or indirectly affect Indigenous-led forestry. The scan, adapted from Cox (2014), involved a process whereby relevant policies, statutes, regulations and governance documents within the scope of this project were uncovered via a systematic search of public databases and websites. Provincial, federal and Indigenous government sources, along with sources developed by Indigenous political, business and non-profit organizations were included in the search. The research also included semi-structured interviews with Indigenous forestry experts recruited from: selected First Nations; Indigenous political, business, and non-profit organizations; the forestry industry; and the provincial and federal governments.

#### **1.3.1. Organization of the Thesis**

The thesis is organized into six chapters. After this introduction, Chapter 2 reviews the relevant literature on sustainable forest management in Canada, Indigenous forestry, forestry policy and policy learning. The third chapter outlines the research methods and the rationale behind the analytical framework. Chapter 4 presents the results, which are organized by the research objectives and key themes uncovered in the analysis. Chapter 5 discusses the results in relation to the relevant literature, and Chapter 6 concludes the thesis, provides policy recommendations, and suggests future research.





## CHAPTER 2: LITERATURE REVIEW

### 2.1. Chapter overview

Forest management in Canada has been dominated by private and industrial land tenure holders; however, the desire for greater Indigenous participation in resource management has long been recognized (Beckley, 1998). Involvement of First Nations within community forest initiatives has also increased. This is due to public desire for increased accountability in forest management practices, court decisions that have upheld Aboriginal rights and title, and an increased desire to establish “free, prior, and informed consent” as outlined in the United Nations Declaration of the Rights of Indigenous People (Bullock et al., 2017:10). This literature review will discuss the history, current happenings and next steps of Indigenous involvement in Manitoba’s forest sector.

### 2.2. Sustainable forest management in Canada

Sustainable forest management is a broad term that can be defined as a way in which social, economic and environmental benefits from forests can be utilized while sustaining the long-term health of the forest (The Ministry of Natural Resources, 2022). This research focuses on an aspect of sustainable forest management, namely collaborative forest governance, which is a common way First Nations are engaged in resource management, through co-management agreements with governments and industry (Zurba et al., 2016). More specifically, this research focuses on an extension of co-management, namely Indigenous-led forestry, defined as small- scale community forestry initiatives on traditional land use areas, which are ceded territories with respect to which First Nations hold resource and land rights (Palaschuk and Bullock, 2019). Throughout this paper, the term “Indigenous forestry” is used when discussing the broad implications of Indigenous participation in

forestry. The term “Indigenous-led forestry” is used when discussing initiatives that are specifically Indigenous-led. Although forestry is a practice that is informed by science, it is ultimately about the values expressed by the various stakeholders and rightsholders within the forest sector (Beckley, 2014).

### 2.2.1. Manitoba’s timber industry

This section canvases the history of Manitoba’s timber industry, forestry legislation and opportunities for increased Indigenous engagement, which could advance economic reconciliation (Wyatt, 2008). While Manitoba’s forestry sector is less developed than many other provinces (Fortier et al., 2012), the timber industry has always been an essential component of the province’s economic development (Nicholson, 2000). The boreal forest in Manitoba has provided the lumber industry with valuable timber since the early 1870s (Nicholson, 2000). The forestry sector in Manitoba has changed over the last century, with large companies managing the majority of the tenures (Griffith et al., 2015; Nicholson, 2000; NAFA, 2020). It is important to be aware of how the forestry sector has evolved if we are to make feasible recommendations for future forest management policies and practices.

In the earliest years of Manitoba’s industrial forestry sector, given the difficult terrain, areas that were successfully logged for commercial use had to be near a water system or a railway (Nicholson, 2000). Logs were harvested inland and floated down log runs to Lake Winnipeg or Lake Manitoba prior to 1900, and Lake Winnipegosis after that (Nicholson, 2000). Once railways near the Duck Mountains and The Pas were developed in the early 1900s, milling sites followed, and such sites were always located near large bodies of water for floating the logs, powering steam engines, removing bark and developing ice roads for winter access (Nicholson, 2000). Details of the development of historic harvesting sites,

milling sites and ice roads can be found in Nicholson's (2020) *Economic History Theme Study, The Lumber Industry of Manitoba*, prepared for the Manitoba Historic Resources Branch. In terms of control, the federal government regulated the industry in Manitoba until 1930, leases, termed "timber berths", were given to licensed timber operators through the Canadian Department of the Interior's Crown Timber Office located in Winnipeg (Nicholson, 2000). In 1895, national parks and timber reserves were established in an early effort for conserving Canada's forests (Nicholson, 2000). In Manitoba, Turtle Mountain, Spruce Woods and Riding Mountain were the first established parks (Nicholson, 2000). In 1930, Manitoba enacted *The Forest Act* which was reformed in 1964 and has been amended on multiple occasions since then (Nicholson, 2000).

Currently, the provincial government owns 94% of forested land in Manitoba (Province of Manitoba, 2022). The current form of forestry and land planning administered by the provincial government follows a top-down approach, with the Department of Natural Resources and Northern Development focusing on land management and the Department of Intergovernmental Affairs focusing on land planning (Province of Manitoba, 2022). There are opportunities for the provincial government to be more inclusive of First Nations and other stakeholders in the forest sector, which could promote community development and advance economic reconciliation (see Fortier et al., 2011; Griffith et al., 2015; Lawler and Bullock, 2017).

### 2.2.2. Co-management in the forestry sector

Although private and industrial ownerships have dominated forest tenures over the past century in Canada, the general public has increasingly criticized the efficacy of industry practices and have demanded forestry companies be held accountable in achieving more

sustainable forestry practices (Beckley, 1998). These critiques play into what Beckley (1998:736) deemed a “legitimacy crisis” in the forestry industry while analyzing initial barriers to co-managing resources in the 1990’s. This crisis continues today in some respects, and the general public is demanding more accountability for forest management (Beckley, 2014; Griffith et al. 2015). It is crucial that Canada rethinks forest management processes under an increasingly interdisciplinary lens in order to mitigate these concerns.

Under private and industrial ownership, forest tenures have been managed for the production of wood fiber resources, although the majority of the commercially productive forests are publicly owned (Beckley, 1998). Industrial forestry, as defined by Beckley (1998:737), consists of “large scale operations with a primary orientation toward the production of fiber.” This process of profiting from forest resources comes from a settler perspective, as land was not a commodity that could be owned prior to colonization in Canada (Greer, 2019). Moreover, as Lawler and Bullock (2017) note, out of the 500 million forest dependent people in the world, 200 million are Indigenous. In Canada, in many cases, First Nations have relinquished sovereignty over their resources due to discriminatory legislation and policies put in place by settlers (FNIGC, 2019). Settlers, defined as Europeans who settled in North America since the late 1400s, relied heavily on First Nation’s knowledge of Canada’s natural resources during the colonial era (FNIGC, 2019). There is a clear need for more Indigenous involvement in forest management as it can benefit communities directly, prioritize Indigenous culture and values, and revitalize sovereignty over natural resources (Lawler and Bullock, 2017). Recent research suggests that Indigenous managed lands account for higher rates of biodiversity compared to conventional protected areas which are often placed in regions with low economic value (Schuster et al., 2019). This further emphasizes the

need to better understand how traditional knowledge influences resource management practices. As Lawler and Bullock (2017:117) discuss, “more than 70% of Indigenous communities in Canada are located in forested areas”, outlining a potential opportunity for Indigenous peoples to play a central role in forest management processes.

Community forestry is one way to increase Indigenous involvement in forestry. There are various definitions of community forestry ranging from municipally run forests to urban forests to demonstration forests, although there is a consensus among academics regarding its main attributes (Teitelbaum et al., 2006). For the purposes of this paper, community forestry is often an ecologically driven process that involves land use decisions driven by a community, community development based on forest resources, and community benefits based on the management of forest lands (Beckley, 1998; Charnley and Poe, 2007). Beckley (1998) identified a gap that existed between theory and practice in both co-managed and community forestry in the 1990s, with the hope that this gap would be narrowed. In community forestry in the 1990s, disputes over tenure, decision making, and the scope of management often hindered the success of projects (Beckley, 1998). For example, a resource co-management initiative titled The Wendaban Stewardship Authority (WSA), which had a variety of stakeholders, had “great potential for consensual decision making” (Beckley, 1998:739). However, these efforts collapsed due to power-sharing issues in regard to management decisions, which is a common barrier in interdisciplinary practices (Beckley, 1998). In this case, the WSA was promised legislative jurisdiction by the government of Ontario, but that level of authority never came to fruition (Duinker et al., 1994). Recent research suggests this gap has narrowed (e.g., Assuah and Sinclair, 2019; Hotte et al., 2019, Lawler and Bullock, 2017), although it seems some of these initial barriers still exist in

community managed forests today. As Assuah and Sinclair (2019) discuss, the current model for community forestry in Canada offers stakeholders and community members the opportunity to collaborate and take part in decision making that may directly benefit their community.

### 2.2.3. Meaningful Indigenous participation

Given the large international Indigenous forest population (Lawler and Bullock, 2017), governments around the world have increasingly focused on co-management and other forms of Indigenous participation in natural resource management. Indigenous participation in resource management can be an interdisciplinary practice as it often involves a collaborative process with a variety of stakeholders and rightsholders. Brewer (1999) suggests that interdisciplinarity involves the combination of knowledge from different specialties. While Indigenous knowledge may not be widely recognized as a scientific or academic ‘specialty’ from a western perspective, it would be a mistake to assume traditional knowledge cannot contribute in important ways to sustainable forest management.

Bullock et al. (2020) discuss that although Indigenous involvement in environmental governance is somewhat new from a western perspective, it yields important relationships that can advance Indigenous rights and justices. With the topic of Indigenous-settler reconciliation at the forefront of Canadian issues, supporting First Nations in regaining sovereignty over their land and resources is of vital importance. Indigenous involvement in the forest sector can be complicated given the precariousness over Indigenous rights and claims to forest resources (Beckley et al., 2005). Many First Nations communities in Canada are located in forested areas (Lawler and Bullock, 2017) and that alone can trigger the Crown’s duty to consult and accommodate and at the very least require governments and industry to engage with First

Nations in a meaningful way when advancing forestry initiatives. That said, many barriers exist. For example, a lack of trust between First Nations and industry or government stemming from historical injustices can hinder relationship building, meaningful engagements and development of lasting joint projects (Guimond and Desmeules, 2018; Hotte et al., 2019). The division of powers in the Canadian constitution and conflict between the federal and provincial governments in respect to natural resource management can compound matters further. While research shows the value of these partnerships, the importance of Indigenous rights, values, culture and traditions is not often fully recognized and respected, Guimond and Desmeules (2018) highlight the lack of respect given to Indigenous minorities in northern worksites, suggesting racism and cultural suppression are a common occurrence. Wyatt et al. (2019) emphasize that care should be taken when framing Indigenous engagement in natural resources. The term collaboration often has a positive connotation associated with it, but it can underplay the existence of conflict often exhibited in partnerships involving Indigenous peoples, governments and industry (Wyatt et al., 2019). Meaningful Indigenous involvement in the forest sector can mean “different things to different participants and processes can vary across sectors” (Bullock et al., 2020:2), but can be defined as participation in forest management processes that not only benefit Indigenous communities, but also support their values, cultures and traditions (Hotte et al., 2019). Sharing decision-making power can be a complex undertaking for all stakeholders in forest management, therefore, adapting environmental governance models so that they benefit both Indigenous and settler groups should be paramount (Bullock et al., 2020; Wyatt et al., 2019).

#### 2.2.4. Successful examples of First Nations co-managing forest resources

Prior to the arrival of European settlers, First Nations occupied lands for thousands of

years in what is now known as Canada (FNIGC, 2019). When settlers first arrived, “they relied heavily on First Nations for their knowledge and resources to survive the harsh climates and terrain” (FNIGC, 2019:48). After settlers became established in North America, First Nations were pressured to surrender their resources and territories (FNIGC, 2019). In more recent times, settlers are again looking to First Nations for answers regarding resource and territory stewardship. In the forest sector, Beckley (1998:737) noted that co-management of Crown or public lands is “most commonly found between Aboriginal people and state, provincial or federal governments.” Beckley (1998) also discussed initial barriers that exist in co-managing forests, the most prominent being the locus of decision making amongst the various stakeholders. Although stakeholder diversity is still a common challenge in community forest projects involving Indigenous peoples, there are several examples of successful and meaningful partnerships.

In examining the “relationships between collective action and social learning through community forest management”, Assuah and Sinclair (2019:1) found strong evidence of successful partnerships within the Wet’suwet’en Community Forest Corporation (WCFC). The WCFC is jointly managed by the Town of Smithers, the Village of Telkwa, forest users and the Wet’suwet’en First Nation (Assuah and Sinclair, 2019). Assuah and Sinclair (2019) noted that Wet’suwet’en participants in their study emphasized how well the WCFC was run in contrast to lesser experiences with larger forest product companies. Reasons for such success are associated with the various WCFC stakeholders respecting First Nations culture and values while forming meaningful relationships with forest users such as skiers, mountain bikers and backpackers (Assuah and Sinclair, 2019). This holistic approach to forest management can be difficult to achieve, and Assuah and Sinclair (2019) emphasize that



building relationships amongst stakeholders is an essential ingredient for success.

Egunyu et al. (2016) echo the importance of relationship building when discussing the successes of the Harrop-Procter Community Forest (HPCF), which involves BC's Ministry of Forests Lands and Natural Resource Operations (MFLNRO). Similar to the relationship between the Haida Nation and BC government described by Hotte et al. (2019), Egunyu et al. (2016) note that social action in the form of environmental activism led to collective action and meaningful relationships between First Nations and government. Egunyu et al. (2016:787) describe the HPCF's management philosophy as "ecosystem-based conservation planning" that envelopes all aspects of ecosystem services and biological diversity. This holistic, interdisciplinary management philosophy is both successful in forest management planning and advancing First Nations goals and objectives. In the case of the Haida Nation's relationship with the government of BC in managing the forest resources of Haida Gwaii, Hotte et al. (2019) highlight trust as a key building block for successful relationship building between stakeholders. Future research considerations could develop a better understanding of how to mitigate the challenges associated with forming successful land management partnerships.

### **2.3. Impacts of climate change on forest management**

Climate change effects on northern forest ecosystems are being felt at a faster rate than the rest of the planet (Davidson et al., 2003). Moreover, the global north is particularly vulnerable to rising temperatures, with remote communities having limited access to resources, while experiencing increased risks from wildfires and pests and a potential shift in the boreal forest's geographical range (Davidson et al., 2003; Williamson et al., 2019). Further, Williamson et al. (2019) suggest that forest management adaptation is in its early stages, and the current approaches to wildfire management, pest management, seed transfer,

species selection and stocking policies will need to adapt further to incorporate climate change into future policy and management plans.

Halofsky et al. (2018:85) emphasize the need for a “comprehensive and multifaceted approach to climate change vulnerability assessment and adaptation.” Further, the authors suggest that in order to implement a comprehensive approach to climate change adaptation, the forestry sector must find new approaches to decision making to account for the complexities of an uncertain future (Halofsky et al., 2018). Halofsky and colleagues (2018) emphasize the need for stakeholder engagement, effective communication amongst disciplines, practitioners and community members, and building relationships with partners outside of lead research organizations in order to collaborate comprehensively.

### 2.3.1. Climate risks and vulnerabilities in the forest sector

Climate change impacts in the Canadian forest sector involve a variety of issues, including increased range expansion of, and exposure to, forest pests, change in the composition of the boreal forest, and the increased frequency and intensity of wildfires (Chaste et al., 2019; Flannigan et al., 2009; Tymstra et al., 2019). The change in the composition of the boreal forest will also have important impacts on future forest management decisions (Chaste et al., 2019). In Canada, the forest sector accounts for 1-2% of the country’s GDP, and it is the world’s largest producer of forest products (Chaste et al., 2019). The boreal forest supplies the world with a “range of highly valuable ecosystem goods and services for regional and global populations, including timber and forest products, recreation, carbon sequestration and water regulation (Chaste et al., 2019: 404). The boreal forest represents one-third of the world’s forested areas and is particularly important in Canada’s central and eastern provinces of Manitoba, Ontario, and Quebec (Chaste et al.,

2019). The boreal zone will experience the largest temperature increase of all forest biomes, with predicted increases of 4-11 degrees Celsius and a decrease in overall precipitation by the end of the century (Gauthier et al., 2015). These impacts will lead to an increase in severity of climate risks. While the boreal forest will be impacted by climate change as a whole, northern forest-based communities will experience the most extreme social and ecological impacts, and these communities often have a limited capacity to adapt (Davidson et al., 2003).

Forest pests are expanding their range due to climate change (Sobek- Swant et al., 2012). While the impacts of forest pests have been widespread in western Canada (e.g. the Mountain Pine Beetle impacting Lodge Pole Pine forests across Alberta and British Columbia (Climate Atlas of Canada. 2022)), the boreal forest in Manitoba has many forest pests that are of concern. The boreal forest is dominated by the gymnosperm species of pine (*Pinus*), fir (*Abies*), spruce (*Picea*), larch (*Larix*) and the angiosperm species of birch (*Betula*), poplar (*Populus*) and alder (*Alnus*) (Gauthier et al., 2015), and these tree species are at risk from a variety of insects and disease.

While Hiratsuka et al. (2004) indicate (in a resource created by the Canadian Forest Service) there are 100+ insects and diseases that impact boreal species, the Government of Manitoba (2014) highlights a select group of species in their *Forest Pest Management Guidelines*. For the purposes of this literature review, the focus will be on insects and diseases that could be included in forest management regimes for northern forest-based communities in Manitoba. That said, the above resources are effective tools in understanding how to mitigate a variety of insects and diseases.

According to the Province of Manitoba (2014), insects that are found in northern forests that impact local tree species include: Eastern spruce budworm, jack pine budworm,

conifer sawflies, terminal weevils, eastern pine shoot borer, eastern larch beetle, root collar weevil, forest tent caterpillar and the poplar borer. Diseases that impact local tree species include needle cast of pine and spruce, needle rust of pine and spruce, dwarf mistletoe of conifers, western gall rust, diplodia canker, conifer decay, armillaria root disease, white trunk rot of aspen and hypoxylon canker (Province of Manitoba, 2014). Management techniques used to prevent, and tactics used to control, each of these insects and diseases can be located in the 2014 *Forest Pest Management Guidelines* and must be considered in forest management plans. As the Province of Manitoba (2014) suggests, pests and diseases need to be identified and mitigated for the long-term health and viability of the forestry industry. Harvesting priorities can be implemented once forest health information is obtained from pre-harvest surveys and pest specific surveys in order to make the most impactful forest management decisions (Province of Manitoba, 2014). Pre-harvest survey tables can be found in the appendix of the *Forest Pest Management Guidelines* (Province of Manitoba, 2014). With all of that said, the economic viability of the boreal forest, along with the long-term sustainability of timber harvesting remain in question, and recommendations for future research on these matters are addressed in Chapter 6.

### 2.3.2. Range expansion and species migration

It is important to consider the changing composition of the boreal forest in order to make accurate forest management decisions for the future (Chaste et al., 2019). The potential shift in the range of the boreal forest will impact climate change processes as well, although there aren't yet sufficient studies that document this shift. That said, unprecedented rates of climate warming could expand the range of the boreal forest into the Arctic tundra (Dial et al., 2022). The impacts of this northern expansion are unclear, however, albedo in the Arctic will

be reduced which could have impacts on carbon cycling (Dial et al., 2022).

While the literature on range expansion of tree species in Canada's boreal forest is limited, Dial et al. (2022) studied how the current rate of climate change is creating sufficient conditions for expanding the range of white spruce (*Picea glauca*), a prominent boreal species. As the authors suggest, high latitude conifer populations have not been documented in the past, nor has there been substantial evidence for sustaining such an expansion (Dial et al., 2022). Due to warmer temperatures, along with seed dispersing and snow packing winter winds that provide increased availability of soil nutrients, the evidence for range expansion of white spruce is mounting (Dial et al., 2022). Dial et al. (2022) indicate that range expansion of four other conifer species has been documented in Alaska, and the proliferation of spruce in recent decades represents a range expansion of >4km per decade. This will have substantial impacts on northern forest-based communities as well as Arctic peoples (Dial et al., 2022). Resource availability is changing, habitat for migratory birds is decreasing and so too is surface albedo in the Arctic (Dial et al., 2022). While these changes could have major global implications, local communities, governments and other rightsholders in the forest sector will need to better understand these changes if they aim to make accurate forest management decisions in the future.

### 2.3.3. Wildfire intensity and frequency

While the composition of the boreal forest is often altered by forest management regimes, forest pests, range expansion and species migration, wildfires remain the largest natural threat to the boreal forest (Davidson et al., 2003). Davidson et al. (2003) cited the increased frequency of wildfires and the impacts this will have on forest-based communities in Canada nearly two decades ago. Wang et al. (2017) predicted the impacts of the current rate of climate

change over the next century, warning of a two-to-three-fold increase of fire spread days in eastern Canada, and an increase of greater than 50% in western Canada. Understanding how the increase in fire spread will impact the boreal forest will have major implications for both forest and fire management decisions in northern forest-based communities. Fire suppression efficacy and funding have increased in recent decades; however, this has not slowed the increase in fire frequency and intensity (Wang et al., 2017). In order to mitigate these impacts in northern forest-based communities, “FireSmart” forest management programs, which are defined in Chapter 4, should be employed for their safety.

As Beverly and Bothwell (2011) emphasize, the amount of wildfire related evacuations in Canada has increased since 1980. This could be due to various reasons that include climate change, the expansion of urban areas into fire prone areas and the lack of fire prevention planning in forest-based communities (Beverly and Bothwell, 2011; McGee, 2021). The average annual number of wildfire evacuees as a percentage of provincial or territorial population, between 1980-2007, was highest in Manitoba at 0.13% of the population. This is concerning for northern forest-based communities in Manitoba, which often have limited capacity to respond to wildfire scenarios (McGee, 2021). Nearly one third of all evacuation events in Canada from 1980-2007 involved First Nation communities, with 88% occurring in the provinces of Manitoba, Ontario, Quebec and Saskatchewan (Beverly and Bothwell, 2011). This highlights the need to provide funding, training and forest and fire management planning for forest-based First Nations in Canada.

FireSmart forest management can be a pragmatic approach to sustainable forest management in areas with high risk for wildfires (Hirsch et al., 2001). While fire has ecological importance and occurs naturally in ecosystems, the management of forests often

focuses on the exclusion of wildfires given the risks to public safety, health, property value and the profits associated with wood fiber production (Hirsch et al., 2001). Through altering forest fuels surrounding communities, FireSmart forest management can provide opportunities to “(a) decrease the fire behavior potential of the landscape, (b) reduce the potential for fire ignitions, and (c) increase the capability of fire suppression resources” (Hirsch et al., 2001: 357). It is crucial that northern forest-based communities implement fire smart programs in their future forest management decisions to mitigate the costs and impacts to human health.

Elevated levels of particulate matter in the atmosphere, caused by wildfires, can cause serious “respiratory problems, pneumonia, chronic obstructive pulmonary disease, heart disease, stroke, and premature mortality” (Flannigan et al., 2009: 493). Another pollutant that poses a serious public health threat is Mercury (Hg) (Flannigan et al., 2009). The effects of this pollutant are felt particularly in northern forest ecosystems, where northern forests and peatlands have experienced increased Hg accumulations due to anthropogenic processes (Flannigan et al., 2009:). This means that boreal fires in Canada release large amounts of Hg, “equivalent to ~30% of the global anthropogenic Hg emissions in an average year, and near 100% in extreme years” (Flannigan et al., 2009: 493).

Tymstra et al. (2019: 1) emphasize that “wildfire management agencies in Canada are at a tipping point” given the current rate of climate change impacts. Due to the increased intensity of climate change in Canada, which is two times the global rate of climate change, wildfire agencies should be moving past short-term solutions and on to long-term, transformational change (Tymstra et al., 2019). Tymstra et al. (2019) propose a paradigm shift, that encompasses the FireSmart protection values highlighted above, more robust

funding and infrastructure for fire suppression, and allows for more managed wildfires on the landscape based on risk assessment approaches.

## **2.4. Forest-based communities**

### **2.4.1. Forest-based Indigenous communities in Manitoba**

Forests make up roughly 26.3 million hectares of the 54.8-million-hectare land base in Manitoba (Government of Manitoba, 2022), with many of the 63 Indigenous communities in the province residing in the forested landscape (Lawler and Bullock, 2017). According to a recent sawmill viability research report, conducted by Indigenous Development Support Services (IDSS) in 2021, 52 of Manitoba's First Nations are located in the boreal forest. However, compared to other Canadian provinces, little attention has been given to Indigenous forestry in Manitoba (Lawler and Bullock, 2017). Small to mid-scale forestry operations were common in the early 1900s (Nicholson, 2000) and these smaller operations were relegated to farmers or private landowners, and often involved poor harvest practices (Nicholson, 2000). Today, it is primarily large, international companies that control most of the province's forest resources (NAFA, 2020). That said, there are tenures and agreements held by Indigenous communities in Manitoba, although the number of agreements with First Nations is much lower than other provinces (Fortier et al., 2011). The IDSS (2021) report found 22 First Nations in Manitoba have harvested timber in the last 15 years, 16 reported having a sawmill within the community, five had developed a sawmill business plan while only two had operational sawmill businesses (Gardiner, 2021). Lawler and Bullock (2017) note that there is a demand for both local Indigenous involvement and external partnerships in the boreal forest in Manitoba, and given the vast intact forests Manitoba contains, there is opportunity for growth. In saying that, there are gaps in understanding the economic feasibility, community



capacity and community desires when it comes to Indigenous-led forestry projects in Manitoba (Lawler and Bullock, 2017).

#### 2.4.2. Forest tenures and agreements in Manitoba

As noted above, the number of current forest tenures involving First Nations in Manitoba is surprisingly low given the extent to which the province is forested (Fortier et al., 2011). Forest tenure, which is a licensing agreement that delegates forest management activities to private companies in exchange for stumpage fees, royalties and land rent, can be a useful tool in measuring Indigenous participation in the forest sector (Lawler and Bullock, 2019). Fortier et al. (2011) note that in 2006, First Nations forest tenures in Manitoba amounted to 154 000 m<sup>3</sup> per year, while a recent report by the National Aboriginal Forestry Association (NAFA) details the Indigenous allocation had lowered to 58, 902 m<sup>3</sup> per year in 2019 (NAFA, 2020). The Manitoba government developed a provincial forestry strategy in 2002 that aimed to increase First Nations consultation by forestry companies, however, low levels of Indigenous participation have been documented in the province since the strategy was adopted (Fortier et al., 2011). This problem is exacerbated by several outstanding claims under treaty land entitlements in Manitoba involving land that is held by forestry companies (Fortier et al., 2011). The viability of commercially productive forests also presents a challenge for many First Nations. The Province of Manitoba, in their Five-Year Report on the Status of Forestry (2022) suggest that commercial suitability studies need to be completed and a considerable amount of work needs to be done to develop a Forest Management License, specifically for the East-Side Options License which impacts four First Nations. Long rotation cycles of 80-100 years for commercially viable trees present further challenges (Davidson et al., 2003).

In recent years, the provincial government has shown progress in co-managing forest resources with First Nations in Manitoba. In March 2019, the province signed a two-year forestry management option license with four First Nations (Black River First Nation, Brokenhead Ojibway Nation, Hollow Water First Nation, and Sagkeeng First Nation) on the East Side of Lake Winnipeg to determine the viability of Indigenous-led forestry operations (FCPP, 2020). In 2022, the Manitoba government and Norway House Cree Nation signed an agreement “to work co-operatively to plan, manage and sustainably develop the natural resources in Norway House Cree Nation’s traditional territory and resource management area” (Province of Manitoba, 2022). This agreement was in response to forest harvesting that occurred in the area previously without proper consultation. While the Canadian legal system has been slow in defining the nature and scope of proper consultation, for the purposes of this paper, proper consultation involves meaningful engagement with Indigenous rightsholders while recognizing such groups are equal players in terms of resource management decisions (Ross and Smith, 2003). Ross and Smith (2003) further define proper consultation, emphasizing “Agreements about lands and resources are therefore about sharing benefits, ensuring continued access and, when it comes to consultation, giving full, prior and informed consent for any decisions which will affect the Indigenous way of life.” Under the Norway House memorandum of agreement, the government of Manitoba has committed to supporting specific initiatives set forth by the First Nation (Province of Manitoba, 2022). These initiatives include developing a community run tree planting program that will support and employ Indigenous youth, undertaking a traditional land-use study that prioritizes community interests, providing an allocation of timber to the community that will allow for the construction of approximately 500 homes in Norway House Cree Nation, and returning up to

45 percent of timber dues revenues to the community (Province of Manitoba, 2022). Other major forest management licenses (FMLs) in Manitoba that provide timber supply to the commercial industry include FML 2 – Canadian Kraft Paper Industries Ltd., located in The Pas, MB, and FML 3 – LP Canada LTD., located in Minitonas, MB (Province of Manitoba, 2022). This commercial forest sector in Manitoba employs roughly 3300 people and accounts for approximately \$265 million of annual gross domestic product (GDP) (Five-Year Report on the Status of Forestry, 2016-2021). FML 2 is significant in that Canadian Kraft Paper Industries (CKPI) formed a partnership in 2018 with Nekoté, a corporation that represents seven Manitoba First Nations (NFMC, 2018). This 50-50 partnership, the Nisokapawino Forestry Management Corporation (NFMC), co- manage 8.7 million hectares of the boreal forest (NFMC, 2018). FML 2 is the largest forest tenure in North America in terms of geographical range and crosses traditional territories of nine First Nations (NFMC, 2018). FML 3, although another large forest tenure, has historically been a less progressive example of forest management in Manitoba. FML 3 encompasses a large forest tenure across the west side of Lake Manitoba to the western border of the Duck Mountains (Province of Manitoba, 2022). The managing company of FML 3, Louisiana Pacific (LP), has been criticized for clear-cutting in provincial forests (Reder, 2021), and were sued by Minegoziibe Anishinabe (formerly Pine Creek First Nation) in 2022 for improper consultation in regard to harvesting on traditional territories (Stranger, 2022). This has led to positive change, as the Minegoziibe Anishinabe Community has since signed an agreement (September 7<sup>th</sup>, 2022) with the provincial government and LP that states Manitoba will share a portion of the timber royalties with their community, Minegoziibe Anishinabe will conduct impact assessment studies in response to LP's timber harvesting plans funded by the Manitoba government and LP, and

proper consultation will occur during future timber allocations (PCFN, 2022). The specific details of these arrangements have yet to be made public. With the new arrangements outlined above, Indigenous and non-Indigenous forest interests in Manitoba are devising new ways of working together amid changing socio-ecological contexts.

## **2.5. Policy learning as a tool for change**

Multiple approaches to and theories of learning are discussed in recent literature on co-managing natural resources. In the context of forest management, transformative learning and social learning has been prominent (e.g. Assuah and Sinclair, 2019; Zurba et al., 2021). Transformative learning theory describes life experiences and dialogical processes that can result in incremental and transformative changes in a person's meaning perspective and frame of reference (Mezirow, 1997; Tarnoczi, 2011). The theory is described as being culturally accommodating and particularly useful when understanding learning outcomes that span alternative frames of reference such as scientific and traditional ways of knowing (Zurba et al., 2021). Similarly, social learning models are viewed as being useful in joint management initiatives in that they allow stakeholders and rightsholders to contribute diverse perspectives and could empower participants to alter their views on management practices and strategies (Assuah and Sinclair, 2019; Banerjee et al., 2019). The process of measuring the outcomes of these learning processes has resulted in successful qualitative data collection and analysis methods as discussed in Chapter three (Creswell, 2017).

While transformative learning theory and social learning have been influential in the literature, given the policy emphasis of this research, I chose to employ a policy learning conceptual lens. Gerlak et al. (2017) suggest that research into learning in environmental policy has increased rapidly over the last two decades as environmental issues provide many

opportunities for learning processes to be studied, providing rationale for employing a policy learning conceptual lens in this thesis research. This study also looks to suggest policy reforms that could facilitate Indigenous forestry, making a policy learning approach suitable.

#### 2.5.1. The roots of policy learning and how policies are impacted by learning opportunities

The demand for learning is high in all domains of policy (Dunlop et al., 2018), although the concept of policy learning is still emerging in the field of forest governance (Cheng et al., 2011). The emergence of research on policy learning began when pragmatic thinking took hold over ideological approaches to public policy in the early 1900s (Dunlop et al., 2018). Authors like John Dewey (see, *The public and its problems*, written in 1927) focused on the idea that societal learning problems revolved around education and public policy (Dunlop et al., 2018). While Dewey and other early researchers in the field of learning brought forth foundational concepts that defined how learning occurs, Dunlop et al. (2018) note that later authors like Bennet and Howlett, of the early 1990s, began to define the different types of learning (e.g. social, instrumental, political). In more recent years, Dunlop et al. (2018) suggest that governments have played a stronger role in advancing research on evidence-based policy making out of a need to advance their own governance systems and deeper understandings of policy learning have emerged (Dunlop et al., 2018).

Before we can understand how environmental policies are impacted by learning opportunities, we must first understand how policy learning occurs, who is doing the learning, and for what purpose. Dunlop and Redaelli (2018) discuss four lessons about learning in an attempt to answer these questions. First, we must understand that not all learning is created equal and different learning opportunities can have different qualities (Dunlop and Radaelli, 2018). If learning can be defined as “the updating of beliefs based on lived or witnessed

experiences, analysis or social interaction” (Dunlop and Radaelli, 2013: 599), then we can argue that not all policy processes carry the same probability of learning outcomes (Dunlop and Radaelli, 2018). This suggests that certain conditions may promote or inhibit policy learning. In policy, Dunlop and Radaelli (2018) argue that learning occurs through four different decision-making contexts. First, it can occur epistemically, meaning learning can be facilitated for actors who are willing to learn by an “authoritative body of knowledge and experts who are willing and able to interact with policy-makers” (Dunlop and Radaelli, 2018: 259). Second, learning can occur through reflection, or more specifically, dialogue (Dunlop and Radaelli, 2018). In order to generate the type of dialogue that facilitates learning, Dunlop and Radaelli (2018) suggest bringing a wide range of social actors with varying backgrounds together in debate facilitated by public engagement tools. Third, learning can occur as a by-product of bargaining (Dunlop and Radaelli, 2018). This means learning can be facilitated by the processes of exchange and negotiation that result in potential agreements (Dunlop and Radaelli, 2018). Finally, learning can occur through hierarchal settings where actors learn the scope of rules over time. Learning does not occur randomly, although, it is often unintentional (Dunlop and Radaelli, 2018).

In the context of environmental challenges, Gerlak et al. (2017) observe that research on learning in the environmental policy sector has grown over the past two decades. Environmental challenges are complex and often cross many disciplines, which creates various opportunities for learning to occur (Gerlak et al., 2017). Governments and communities cannot deal with such complexity on their own (Gerlak et al., 2017). In order to adapt policy and governance processes in response to complex ecological and social issues, scholars suggest that collaboration and collective learning needs to occur (Gerlak et al., 2017).

Improved governance outcomes and sustainable transitions can also occur from learning (Gerlak et al., 2017). While learning in the context of environmental policy has received much attention over the past two decades, Gerlak et al. (2017: 337) note that there are still gaps in the understanding of “who is learning, what is learned and to what effect.” Similar gaps in the literature on policy learning have been noted by Dunlop and Radaeilli (2018).

### 2.5.2. Policy learning in the forestry sector

New policies can lead to new legislation (Ross, 1997), and the role learning plays in the development of new environmental policies is of growing concern (Cheng et al., 2011). A trend in forest governance globally, which has been highlighted in previous sections, is that of “decentralization and devolution from central state of authority to local governments and communities” (Cheng et al., 2011: 89). Cheng et al. (2011) suggest that community forestry initiatives present opportunities for learning that can shape future forest governance in a way that benefits both social and ecological health. The authors of this study note that the U.S. forest policy system promotes “longstanding laws and policies, court rulings, powerful government agencies, and interest group coalitions with vested interest in retaining the existing system of laws, budget allocations, and bureaucratic structure” (Cheng et al., 2011: 94-95), which correlates closely to the forest policy and legislation we see in Canada (Griffith et al., 2015; Ross, 1997). Transformative change in the forest policy sector needs to occur to better incorporate Indigenous values (Griffith et al., 2015), and learning provides the potential to do so (Cheng et al., 2011). In the case of Manitoba, Griffith et al. (2015) note that the policy network is dominated by the provincial government and outdated long-term forest tenure arrangements. Opportunities for reforming such policy will be discussed in section 2.6.

### 2.5.3. How policy learning can influence policy users

Scholars of policy learning have “long been interested in learning, or the acquisition of new ideas, information, or beliefs by actors involved in policy processes, which can result in changes to policies, decision-making processes, and governance outcomes” (Gerlak et al., 2017: 336). How learning can influence policy users is an important question in understanding the impacts learning has on policy processes. People often learn about emerging problems in politics and public policy, and in order to attract the attention of relevant policy makers, their political stance may change accordingly (Moynon et al., 2017).

Resolving public policy issues often involves social interactions to collect data regarding social problems and potential solutions (Moynon et al., 2017). Therefore, public policies are often developed by building on learned experiences from other policies and are adapted over time through feedback mechanisms (Moynon et al., 2017). The hope is that by learning from past mistakes, more effective and appropriate policies will be developed in the future (Moynon et al. 2017). In saying that, Moynon et al. (2017) emphasize that current research varies on the question of the extent to which opportunities for learning are an effective tool for policy change. This observation confirms Dunlop and Radaelli’s (2018) assessment that more research on policy learning as a tool for policy change needs to occur. Although the efficacy of policy learning has its skeptics, some successful learning opportunities have been noted, including stakeholder and citizen engagement, new ideas brought forth from policy brokers, polycentric governance, and the connection of different epistemic communities (Moynon et al., 2017).



## 2.6. Forest policy and opportunities for the future

Most of this review has focused on current academic literature regarding Indigenous-led forestry in Canada and Manitoba. Here, the focus is on federal and Manitoba forest policies. The extent to which these policies impact Indigenous-led forestry is discussed in Chapter 4. What follows below is a broad overview of the policy landscape, along with a review of opportunities for policy reform found in the literature.

Craft et al. (2013) suggest that Canada's policy sector will be placed under tremendous pressure to adapt given the current rate of climate change, and the capacity to do so is not in place. In saying that, opportunities are addressed in the literature on forest policy reform in Manitoba. Additionally, the literature reveals opportunities for better communication, more trusting relationships, and more meaningful partnerships in the forest sector, including amongst government, stakeholders and Indigenous groups.

### 2.6.1. Forest policy in Canada and Manitoba

Natural Resources Canada (NRCan) (2015) states that Canada's forest laws are some of the most stringent in the world with regard to sustainable forest management and conserving biodiversity. Some of the major federal laws that apply to the small portion of federally regulated forests in Canada include: *The Forestry Act*, *The Timber Regulations*, *The Indian Act*, *The First Nations Land Management Act* and *The National Parks Act* (NRCan, 2015). In a testament to the high level of forest regulation in Canada, approximately three-quarters of Canada's crown forestland are certified by at least one sustainable forest management standard (NRCan, 2015). There are three independent certification bodies that set high standards for forest companies. These standards are not static and are changing to adapt to a changing climate (NRCan, 2015). The three certification systems that operate in

Canada are the Sustainable Forestry Initiative (SFI), the Forest Stewardship Council (FSC) and the Canadian Standards Association (CSA) (NRCan, 2015).

There is various environmental and natural resource management legislation that is relevant to forest management in Manitoba, however, given the focus of this research, the emphasis in this section is given to legislation that could impact Indigenous forestry prospects. A broader array of provincial policies and resources are addressed in Chapter 4. In Manitoba, the forested portions of the province are divided into ten Forest Sections, which are comprised of Forest Management Units (Province of Manitoba, 2022). The Province of Manitoba (2022) implies that the Forest Sections and Forest Management Units are in place to divide the forests based on their common environmental conditions. That said, the Province of Manitoba (2022) details a more ecological approach to this system of division is needed in the future. In regard to forest management, *The Forest Act* (1987) has been the governing legislation on timber harvesting and forest management in the province (see section 1.1) (Province of Manitoba, 2022; Ross, 1997). *The Forest Amendment Act* came into force in 1989 and implemented forest renewal work to be required by the Minister (Ross, 1997). Through *The Forest Act*, Forest Management Licenses (FMLs) are established to provide timber supply to the forest industry (current FMLs discussed in section 2.4.2.) (Province of Manitoba, 2022). The timber cutting authorities under *The Forest Act* that may be allocated by the crown include: Forest Management License Agreements (FMLA), Timber Sale Agreements (TSA) and Timber Permits (Province of Manitoba, 2022). FMLAs are granted wherever there is a wood using industry that requires a continuous supply of timber (Province of Manitoba, 2022). The licenses are granted for twenty-year periods, which adhere to Manitoba's *20-Year Forest Management Plan Guidelines* (Province of Manitoba, 2022).

There are multiple other forestry guidelines, resources and surveys the Province of Manitoba (2022) provides for guiding forestry operations in the province, which will be discussed in their relation to Indigenous-led forestry initiatives in Chapter 4. The Timber Permits are meant for smaller commercial harvests (less than 300 m<sup>3</sup>) or for small scale forestry operations (Province of Manitoba, 2022). While most regulations impacting forestry operations in Manitoba can be found under *The Forest Act*, *The Manitoba Environment Act* outlines the environmental assessment and licensing processes that may be needed for developments impacting upon the environment (Province of Manitoba, 2022).

#### 2.6.2. Opportunities for policy reform and First Nations involvement in the forest sector

While sustainable forest management processes are included in Manitoba's forest policy regime, the provincial government has a spotty record of including diverse rightsholders, stakeholders and values in forest management (Griffith et al., 2015). A survey of 50 First Nations in Manitoba, conducted by the Sustainable Forest Management Network noted that only six communities had collaborated with the government in forest management operations and only nine communities had been involved in forest management decision-making processes (Fortier et al., 2011). The authors of the survey found a gap in determining the role Métis populations in Manitoba had in forestry initiatives, which should be addressed in the future (Fortier et al., 2011). Beckley et al. (2005) emphasize that the public often seek to exert their legal and democratic rights on how Crown land is managed, and this can result in lawsuits, appeals and court injunctions. As discussed in section 2.4.2, Indigenous groups often implement these legal mechanisms as a reactionary measure in reforming forest policy. Legal action can be a necessary and effective last resort for groups seeking to express their forest values (Beckley et al., 2005).

As discussed throughout this literature review, there is tremendous opportunity for greater First Nations involvement in Manitoba's forestry sector (e.g. Griffith et al., 2015; Lawler and Bullock, 2017). That said, there has been progress in terms of policy, with *The East Side Traditional Lands Planning and Special Protected Areas Act* being established in 2000 (Fortier et al., 2011). This statute enables Indigenous communities on the East Side of Lake Winnipeg to be involved in land use and resource management planning for traditional use areas or areas of special protection (Fortier et al., 2011). The recent agreements involving Norway House Cree Nation and the provincial government (NHCN, 2022), and the Minegoziibe Anishinabe community and the provincial government and Louisiana Pacific (PCFN, 2022) show promise for future First Nations involvement and proper consultation. In saying that, the forestry regime in Manitoba can still be perceived as a closed policy network (Griffith et al., 2015).

Due to the relatively small forestry sector in Manitoba, and the centralized forestry regulations under *The Forestry Act*, the core of the relationship between the forestry industry and the provincial government remains small and exclusive (Griffith et al., 2015). The need for greater inclusivity in the forest sector in this province (see Fortier et al., 2011; Griffith et al., 2015; Lawler and Bullock, 2017) remains the same despite recent progress. *The Forest Act*, as Griffith et al. (2015) suggest, is outdated and in need of amendment to include sustainable forest management objectives that would result in greater inclusivity in the forest sector. Further, as the provincial government suggests on their website (Province of Manitoba, 2022), the Forest Sections dividing the forested area of the province should be amended based on current ecological knowledge. One could argue this sector should also be amended to greater reflect traditional territories and areas of cultural significance. Griffith et al. (2015)

emphasize that forest policy reform in Manitoba would be highly challenging, although not insurmountable given reform that has occurred in other provinces across Canada. For example, in a study on how forest policy is developed in New Brunswick, Ashton et al. (2007) concluded that reforming policies in the forest sector is possible but requires persistence. The authors of this study determined that developing forest policy involves a variety of stakeholders and rightsholders who should be treated as equals in the decision-making process (Ashton et al., 2007). Similar to Manitoba, New Brunswick's forest policy is governed from the center, which presents barriers to collaboration (Beckley, 2014).

## **2.7. Chapter Summary**

This review addressed the current literature on sustainable forest management, climate change impacts on the boreal forest, the adaptive capacity of northern forest-based communities, policy learning as a tool for change and the current state of forest policy in Canada and Manitoba. Research gaps exist with respect to the policy sector's ability to adapt to a rapidly changing climate (Craft et al., 2013), and more specifically, how the forest sector should adapt to be more inclusive of stakeholders and rightsholders and thereby advance sustainable forest management efforts (Griffith et al., 2015). Further, little research has been done on how Indigenous-led forestry initiatives, specifically on treaty land, can increase First Nations' adaptive capacity, while addressing both social and ecological concerns. This thesis research helps address these gaps. Finally, current research suggests that policy learning can be an important tool in shaping the way policy makers design policy and how policy users implement it (Gerlak et al., 2018). Policy learning should be studied in greater detail in the forest sector in order to mitigate the lack of inclusivity and adaptive capacity.



## CHAPTER 3: METHODS

### 3.1. Research design

As discussed in Chapter 1, northern First Nations in Manitoba will feel the impacts of climate change at a greater rate than other parts of the world and these impacts can be mitigated through enhanced adaptive capacity. Sustainably managing forest resources through small-scale, Indigenous-led forestry initiatives is one way of building such capacity and thus was the focus of my research. Given this focus and the need to engage with Indigenous communities, the design of the project was qualitative (Creswell and Creswell, 2018). Data collection methods, detailed later in the chapter, involved a policy scan to review relevant policy, planning, and governance documents that could directly or indirectly affect Indigenous-led forestry, along with semi-structured interviews with Indigenous forestry experts.

### 3.2. Philosophical approach

#### 3.2.1. Transformative worldview

A worldview can be defined as a “basic set of beliefs that guide action” (Creswell and Creswell, 2018: 48). Individuals develop their worldview based on past experiences, in both life and research, and guidance from mentors and advisors. Although there is debate about the extent to which worldviews impact inquiry in research, in qualitative research it is important to reflect on and be transparent about one’s philosophical perspective. Doing so can reveal biases and blind spots and can “guide researchers in the identification and clarification of their beliefs with regard to ethics, reality, knowledge, and methodology” Mertens (2010: 469). Within the qualitative design used in this project, I adopted a transformative worldview, meaning that I was motivated by concerns for social justice and human rights. As Creswell and Creswell (2018) noted, a transformative worldview is one that intertwines politics and political change into a research inquiry to combat oppression. I hope that, at least in a small way, this thesis research

helps address the systematic oppression of Indigenous peoples regarding housing, job security and sense of place. Furthermore, the research aims to assist First Nations in regaining sovereignty over their natural resources, specifically in the forest sector.

### 3.2.2. Decolonized research approach

Given this research involves First Nations participants and aims to support Indigenous forestry initiatives, the research framework employed a decolonized approach. As Thambinathan and Kinsella (2021) acknowledge, research can be a controversial word for those who have been oppressed by colonization. Research can be both predatory and exploitive towards Indigenous communities, and researchers often perpetuate inaccurate stereotypes and focus on negative social issues associated with Indigenous people (Thambinathan and Kinsella, 2021). Because of this historical oppression and stereotyping involved with colonial research, Indigenous people are often wary of partaking in research studies (Thambinathan and Kinsella, 2021).

It is for these reasons this research employed a decolonized research framework, which can challenge western ways of doing research “while being process oriented, iterative and grounded in culture” (Zurba et al., 2021: 57). Decolonization can be defined as a way of centering the worldviews and concerns of non-western individuals in the research process, while respecting and understanding other perspectives of research and theory (Thambinathan and Kinsella, 2021). Two-Eyed Seeing, which can be described as “learning to see from one eye with the strengths of Indigenous ways of knowing and from the other eye with the strengths of Western ways of knowing and to using both of these eyes together” (Hatcher et al., 2009: 146), is a foundational philosophy in decolonized the research approaches (Zurba et al., 2021). As Hatcher et al. (2009: 145) emphasize, there are many ways of knowing in this world, and “a postcolonial agenda requires that bridges be built among them.” Through this research I aimed to



respect Indigenous values and ways of knowing and tried to give voice to Indigenous aspirations with respect to managing forest resources.

### 3.2.3. Research ethics protocol and community engagement

The ethics protocol for this research was reviewed and approved by The University Human Ethics Research Ethics Board (UHREB, 2021). The protocol adhered to the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2, 2018). Emphasis was placed on Chapter 9: Research Involving the First Nations, Inuit and Metis Peoples of Canada (TCPS2, 2018). Among other things, Chapter 9 requires community engagement, defined as a process in which the researcher and relevant Indigenous community establish a collaborative relationship, the degree of which may vary depending on context. A community engagement plan was developed for this research, which provided a rationale for choosing communities to participate, along with an explanation of how their data were to be managed.

Communities chosen for this study expressed interest in regaining sovereignty over their forest resources by implementing small-scale forestry operations on their lands. In particular, the communities opted into the *First Nations Land Management Act* (Government of Canada, 2012). This statute allows communities to opt out of 40 sections of the *Indian Act* that relate to land management, which enables the communities to produce their own environmental, land use and natural resource related laws (Government of Canada, 2012). Within this framework are the Lands Advisory Board and the First Nations Land Management Resource Centre, which assist First Nations in developing and enacting their own laws. Once a community opts in to the *First Nations Land Management Act*, funding for developing land codes, facilitating transition from developmental phases to operational phases, and ongoing operational land management becomes

available (Government of Canada, 2012). In addition to having opted in to the *First Nations Land Management Act*, the communities were chosen because:

- 1) They had shared interests in either developing or operating small-scale Indigenous-led forestry initiatives on their respective lands;
- 2) They fell under different developmental, operational, or preliminary stages within the *First Nations Land Management Act*, which had the benefit of providing different perspectives from communities with similar end goals;
- 3) They had a prior professional relationship with a member of my thesis advisory committee, including having been contacted prior to the start of the research and expressing their interest in being involved; and
- 4) They include experts and knowledge users whose perspectives would provide great value to the outcomes of this study.

Regarding managing Indigenous data, this research followed a framework set forth in the Indigenous Data Management: Indigenous Sovereignty in Action Webinar Series, a series I attended and for which I received a certificate of completion. This framework (see [Appendix E](#)) for research involving Indigenous data includes recommendations for managing access to Indigenous data, proper storage and sharing of Indigenous data, organization techniques for Indigenous data and ways researchers can Indigenize and decolonize their data management. Further to this, this framework follows the principles of OCAP (Ownership, Control, Access and Possession) in asserting that First Nations have the right to control data collection and management processes, along with how this information can be used.

### 3.3. Data collection

The data collection methods included a systematic policy scan adapted from Cox (2014), field visits to selected First Nations in Manitoba, and semi-structured interviews with Indigenous forestry experts.

#### 3.3.1. Policy scan

A policy scan is an exercise that “systematically gathers and analyzes policies in a particular area of interest” (Cox, 2014: 2). The rationale behind conducting a scan is that it can provide a singular location for multiple stakeholders and rightsholders to access policy information and analysis. Policy scans can also serve as a planning tool for reforming existing policies and developing future policies and help in avoiding duplicative efforts in policy making (Cox, 2014). In this research, the purpose of the scan included all the above reasons, with an emphasis on reforming current policies and providing direction for the development of future policies. Further, the scan done in this research was useful for developing a unified and accessible location for policy information for Indigenous groups. This will be in the form of a document published on the Environment and Society Research Group (ESRG) website. The thesis will be made available by WinnSpace, the University of Winnipeg’s Open Access Institutional Repository, and Thesis Canada, through Libraries and Archives Canada.

The policy scan encompassed provincial, federal and Indigenous government sources, along with sources developed by Indigenous political, business and non-profit organizations. Beneficiaries of this policy scan may include policy implementers and users, non-profit organizations (Cox, 2014) and Indigenous communities aiming to implement or better understand forestry initiatives. The policy scan included the multi-step process detailed in Appendix A. First, a search strategy was prepared based on the purpose noted above and the

scope of the scan. The scope included statutes, agreements, regulations, policies and plans.

Appendix A identifies possible sources (websites and database platforms) for these documents.

Appendix B contains a search tracking table used to maintain consistency and focus during the

searches. Appendix C is the framework used for aggregating and reviewing data found during the

searches. The policies uncovered during this exercise were first screened for relevancy before being analyzed.

### 3.3.2. First Nation community visits

Selected First Nation communities were visited to build relationships with potential Indigenous forestry interests and interview relevant Indigenous forestry experts. Prior to visiting communities, introductory emails with project information were sent to the community member interested in participating in this research, along with the community engagement framework and Covid-19 safety plan. An honorarium of \$40 was provided for Indigenous interview participants and thank-you letters were provided at a later date. The honoraria and thank-you letters were developed in accordance with The University Human Ethics Board and with guidance from the Tri-Council Policy Statement (TCPS2, 2018).

### 3.3.3. Semi-structured interviews

Interviews were conducted with Indigenous forestry experts recruited from: tribal councils; First Nations; Indigenous political, business, and non-profit organizations; the forestry industry; and the provincial and federal governments. The comments attributed to the federal employees that participated in this research are personal reflections and do not reflect any positions of the Government of Canada. Recruitment criteria emphasized expertise in the field of Indigenous forestry policy, resource management and timber harvesting practices. Experts included people with technical, scientific, traditional or local knowledge and expertise. This

definition treats traditional and local knowledge holders and users with the same respect as any other expert in their field (Nadasdy, 2021). Recruitment decisions were based in part on reaching data saturation. Seventeen (17) individual interviews were conducted as a part of this research, with one group interview response.

Semi-structured interviews used guiding questions and prompts to gather qualitative data (Shackleton et al., 2021) regarding Indigenous forestry initiatives and the policies that impact them. Such interviews were used because they can bring “culturally derived understandings into the assessment of long-term social, ecological, economic and cultural changes” in social ecological systems (Shackleton et al., 2021). As well, I hoped they would lead to a holistic understanding of how policies are impacting the prospects for Indigenous-led forestry in Manitoba. Advantages of semi-structured interviews are that they allow researchers to control the line of questioning, they are useful when participants cannot be directly observed, and participants are able to provide historical information (Creswell and Creswell, 2018). This method was particularly helpful for this research, as a variety of different stakeholders and rightsholders participated across Manitoba and Canada. Disadvantages include the potential for misinformation through the views of interviewees, not all people articulate information equally, and researcher bias may be present (Creswell and Creswell, 2018). These disadvantages are partially mitigated by interviewing a variety of participants and the data collected in the policy scan.

Interviews were recorded and transcribed as per recommendations from Creswell and Creswell (2018). Diligent notes were also taken throughout the interview process to account for any recording error that may occur (Creswell, 2017). The interviews were recorded with a phone, Zoom or Microsoft Teams depending on the interview and interviewee preference. Interviews were transcribed using Otter.ai transcription software and imported into NVivo for analysis.

Appendix F includes the questionnaires used to guide the semi-structured interviews with both Indigenous and non-Indigenous participants, along with the interview consent form.

#### 3.3.4. Interview procedures and protocol

Interview procedures and protocols were adapted from Creswell and Creswell (2018) and included:

- Recording basic information about the interview, such as date, time, location and names in order to maintain organization and consistency.
- Introductions of both the interviewer and interviewee to discuss the purpose of the study and the structure of the interview.
- Opening questions about the interviewee's background and expertise to serve as a non-alienating icebreaker.
- Asking content questions in an open, friendly way, to obtain relevant information from the interviewee based on their opinions and experience.
- Probes for more information, such as "Can you provide more detail about that?"
- A closing vote of thanks and an assurance of confidentiality.
- Member checking by sending each participant a copy of the interview transcript for their approval.
- A description of how data will be managed and when the person will receive a copy of the research summary.
- A thank-you letter for participating in the study.

#### **3.4. Qualitative data analysis**

Data management and text-based analysis were done using QSR NVivo 12 software.

Thematic analysis of the interview recordings and transcripts and policy documents identified

and prioritized policy strengths, weaknesses, and gaps as well as recommendations for improving policy regime governing Indigenous-led forestry both federally and provincially in Manitoba. Criteria for analyzing the documents included ecological impact, economic feasibility, equity among Indigenous and non-Indigenous demographics, social and cultural acceptability, and operational practicality with a specific focus on Indigenous stake and rights holders (Yamatani and Feit, 2013).

### 3.1.2 Content analysis

Qualitative content analysis, a method borrowed from the social and health sciences, is increasingly being applied to environmental policy and legal documents (Hall and Steiner, 2020). Generally, analysis of interview transcriptions and policy documents involve identifying themes, intentions, or patterns through the close reading of texts (Hall and Steiner, 2020). In my research, texts units were purposively selected from the transcripts and documents based on the research objectives listed in chapter one. The text units were then used to establish coding themes (see section 3.4.3.) that were separated into categories and then analyzed further for broad patterns (Hall and Steiner, 2020). QSR NVivo 12 qualitative data analysis software was used for the analysis. The analytical framework along with a summary of the coding process are presented below. To gain a better understanding of the NVivo software and its analysis functions, I completed the NVivo Academy's NVivo Core Skills course prior to data analysis.

#### 3.4.1. Analytic framework

The analytical framework was developed using guidance from the NVivo Academy's NVivo Core Skills course, and strategies used in the Ravikumar et al. (2015) Project Guide to Coding in NVivo and Codebook. The analytical framework follows four key questions highlighted in the NVivo Core Skills course. These questions and my responses include:

- 1) What are the data? In the case of this research, the data types include interviews, literature, government documents and policy documents.
- 2) What are the units of analysis? Units of analysis can be described as “Cases” in NVivo. In this research, the units of analysis are Indigenous forestry experts and Indigenous forestry policy documents.
- 3) Is this study a snapshot or longitudinal? This study is a snapshot.
- 4) What is the data analysis method? In the case of this research, data analysis is a top-down, content analysis approach, supplemented with a grounded emergent approach.

Table 1 includes the data types, units and variables used in the analytical framework of this research. The final column represents the thematic framework used for coding the transcripts and documents in NVivo. Broad topic coding includes examples of larger themes in the research that are known in advance. Emergent, fine coding are more detailed themes that are determined during the data analysis.

**Table 1:** NVivo design framework.

<b>Data Types</b>	<b>Units</b>	<b>Variables</b>	<b>Thematic Framework</b>
Interviews	People	<u>People attributes</u> Gender	<u>Examples of broad topic coding</u> - Policies - Legislation - Federal - Provincial - Indigenous - Barriers - Opportunities - Policy learning - Climate change - Adaptive capacity
Literature	Literature	Age range Affiliation (Community, industry, government) Location	
Government Documents		<u>Literature attributes</u> types of documents - Governance - Policies - Acts - Regulations - Guidelines - Resources - Articles	<u>Examples of emergent fine coding</u> - Economic barriers - Market barriers - Logistical barriers - Geographical barriers
Policy Documents		direct or indirect impact on indigenous forestry	



			<ul style="list-style-type: none"> <li>- Collaboration barriers</li> <li>- Stakeholder interest</li> <li>- Funding programs</li> <li>- Collaboration opportunities</li> <li>- Employment</li> <li>- Housing</li> <li>- Economic growth</li> <li>- Policy learning opportunities</li> <li>- NGO policy learning opportunities</li> <li>- Interview perspectives</li> <li>Remote communities</li> <li>- Sustainable forest management</li> <li>- Carbon capture</li> <li>- Biomass</li> </ul>
--	--	--	---

Employing the design framework, I used a five-step data analysis process, adapted from Creswell and Creswell (2018):

- 1) Organization and preparation of the data, which involved transcribing interviews using Otter.ai, then importing the transcripts and policy scan documents into NVivo.
- 2) Determination of an overall impression of the data by reading them and taking detailed notes.
- 3) Coding the data using a process adapted from QSR International (2022) and Ravikumar (2015) (see below).
- 4) Generating emergent themes in the data.
- 5) Determining how the themes will be represented in the results using a narrative passage.

### 3.4.2. Coding

Coding is a fundamental task in most qualitative projects and serves to gather specific references to a topic, theme, person or other issue of interest (QSR International, 2022). As Ravikumar et al. (2015) suggest, coding is an iterative process that becomes faster with experience. When coding in NVivo, different nodes are labelled to describe their intent and what types of responses should be coded to them (Ravikumar et al., 2015). Coding files and bringing the references together in one place results in a node (QSR International, 2022). NVivo offers different types of coding based on the context of the research (QSR International):

- Broad-brush coding using queries can automatically code files based on words or phrases;
- Files can be manually coded by selecting content and transferring the content to existing nodes;
- Entire files can be coded to nodes; and
- In the case of interview data, if the interviews are structured, auto coding can be used to batch content from individual questions into nodes.

For the purposes of this research, files were manually coded to nodes by selecting relevant texts and text units. This is in part due to the nature of reading through individual policy documents, and the lack of structure in the interviews. It was not possible to batch code question responses, as the interviews were conducted in semi-structured format with open-ended responses. In order to maintain consistency throughout the coding process, a codebook was produced (QSR International, 2022). A codebook describes specific information on the codes that were produced for this research and served as a reference point when developing emergent codes during data analysis (Ravikumar et al., 2015). A copy of the codebook can be found in [Appendix D](#).

### 3.5. Qualitative validity

Validity in qualitative research determines whether the findings are accurate from the perspective of the researcher, participants and readers (Creswell and Creswell, 2018).

Trustworthiness, authenticity and credibility are terms in qualitative research that address the strength of validity (Creswell and Creswell, 2018). Several strategies adapted from Creswell and Creswell (2018) were employed throughout this research to help achieve validity and accuracy within the findings. These strategies included:

- Triangulation: information was obtained from multiple data sources (i.e., both documents and interviews, as well as different interview participants) and types of data (i.e. documents, policies, websites, interviews) to address the research objectives;
- Member checking: the accuracy and meaningfulness of the findings were confirmed by the research participants;
- Rich descriptions: findings were conveyed through detailed descriptions throughout each part of the study to maintain accuracy and provide a realistic perspective;
- Clarify bias: I tried to create an open and honest narrative through self-reflection in order to understand my own research bias. I did this by including comments that acknowledged my background and worldview (which I consistently reevaluated), both of which shaped my interpretation of the findings;
- Present contradictory information: information that counters the main themes in the research were discussed. Life is composed of different perspectives that often contradict one another. I hoped that by acknowledging contradictory information the findings would be more realistic and valid;
- Peer debriefing: I consulted with student colleagues who reviewed and asked questions about the study;

- External auditor: an external auditor is a person who provides an objective assessment of the research to enhance the overall validity of the project; this auditing function will in effect be performed by my external examiner. This research will continue to be scrutinized as long as it is made accessible;
- A research summary will be provided for interviewees and First Nations participating in the study, and the thesis will be accessible to the public; and
- Steps for each procedure involving data collection and analysis were documented in detail and included in Appendices to enhance the reliability of the research.

### **3.6. Chapter summary**

This chapter outlined the methodology used in this research project. In order to properly represent and respect the First Nation community members who participated in this study, an ethics protocol was prepared based upon Chapter 9 of the TCPS2 (2018), and a decolonized approach to the research was adapted from Thambinathan and Kinsella (2021) and Zurba et al. (2021). The community engagement plan and Covid-19 protocol, which are important pieces of the ethics protocol, can be found in [Appendix F](#). Using a qualitative research approach grounded in a transformative worldview, this research employed a systematic policy scan adapted from Cox (2014), field visits to selected First Nations in Manitoba, and semi-structured interviews with Indigenous forestry experts. The data analysis involved text-based analysis using NVivo 12. Finally, this chapter outlines the steps taken to maintain the qualitative validity, trustworthiness and credibility of this research project as well as the reliability of the methods.



## CHAPTER 4: RESULTS

### 4.1. Federal, Indigenous, and provincial policy measures impacting Indigenous forestry

#### 4.1.1. Federal policy measures

This section highlights specific policy measures that could impact Indigenous forestry in Manitoba. While Indigenous participation in forestry on Crown land is impacted by provincial policy, forestry activities on reserve land are largely regulated by federal policy measures. Various relevant federal acts, regulations, reports, guidelines and frameworks are discussed in this section.

In 1982, the *Constitution Act* was amended to include a section that recognizes Aboriginal rights in Canada. Section 35 (1) states: “The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed”. This section has since been referenced in other major legislation that could impact upon Indigenous peoples in Canada. In 2021, the *United Nations Declaration on The Rights of Indigenous Peoples Act* was enacted to uphold, under Canadian law, that the declaration is a universal human rights instrument. The United Nations Declaration on the Rights of Indigenous Peoples (2006) (UNDRIP) aims to affirm aboriginal rights on a global scale. Articles 3, 25, 26 (1-3), 31, 38 and 44 are of particular importance for Indigenous land, knowledge and resource rights and provide a strong foundation for advancing Indigenous forestry in Canada. For example, Article 26 (2) states that, “Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired.” Further, Article 38 states that countries “shall take the appropriate measures, including legislative measures, to achieve the ends of this Declaration.”

Other acts that seek to affirm Indigenous treaty rights in Canada are the *Department of Crown-Indigenous Relations and Northern Affairs Act* (2019) and the *Department of Indigenous Services Act* (2019). The first of these states the department is responsible for collaboration and cooperation with Indigenous peoples across Canada, recognizing and implementing treaties between the Crown and Indigenous peoples, promoting well-being and prosperity for residents of Canada's north, recognizing Indigenous ways of knowing, being and doing and promoting awareness and contributing to the process of reconciliation. The Government of Canada (2023) states this act aims to:

...renew the nation-to-nation, Inuit-Crown, government-to-government relationship between Canada and First Nations, Inuit and Métis; modernize Government of Canada structures to enable Indigenous peoples to build capacity and support their vision of self-determination and lead the Government of Canada's work in the North.

Similarly, the *Department of Indigenous Services Act* (2019) ensures that this department carries out their responsibilities in providing Indigenous peoples with access to eligible services while accounting for socio-economic gaps that exist between Indigenous peoples and other Canadians. This act also aims to promote collaboration with Indigenous peoples across Canada and recognize their ways of knowing, being and doing, while implementing the gradual transfer of departmental responsibilities to Indigenous organizations.

In terms of Aboriginal treaty rights that are exercised in the forest, The National Forest Strategy Coalition produced the National Forest Strategy over the period of 2003-2008, which has multiple impactful sections. The introduction to this strategy states:

Aboriginal and treaty rights are primarily exercised in the forest and are constitutionally protected by the Constitution Act, 1982. Over the last 25 years, Canadian courts have affirmed Aboriginal and treaty rights. Thus, forest policy and forest management practices have to reflect the constitutional protection afforded Aboriginal and treaty rights. The federal government also has a lead responsibility towards Aboriginal Peoples, including for Indians and lands reserved for Indians under section 91(24) of the Constitution Act, 1867 (National Forest Strategy, 2008: 6-7).

Further to this, action items 2.1-2.4 under Objective 2 highlight the need to adapt forest legislation and policies to be more inclusive of forest-based communities, expand Indigenous held forest tenures, build capacity in local communities, and develop socio-economic health solutions for forest-based communities (National Forest Strategy, 2008). Objective 3 declares the need to “accommodate Aboriginal and treaty rights in the sustainable use of the forest recognizing the historical and legal position of Aboriginal Peoples and their fundamental connection to ecosystems” (National Forest Strategy, 2008: 14). This strategy addressed a clear need for greater Indigenous participation and capacity in the forest sector over two decades ago.

Another major piece of legislation that could impact Indigenous forestry prospects is the *Indian Act* (1985), which includes two relevant sections. Section 57 outlines that federal statutory authority for reserve timber is limited to granting licenses for cutting timber on surrendered or designated/reserve land, imposing terms, conditions, and restrictions on licenses, and providing seizure or forfeiture of dead and fallen timber. Section 58 outlines that the Minister may cultivate any uncultivated or unused lands on reserves with consent of the band council. The barriers the *Indian Act* presents are discussed in in section 4.2. The *Indian Timber*



*Regulations*, promulgated under the *Indian Act* (1985), apply to cutting of timber on surrendered lands and on reserve lands (Sec 3 (1)). These regulations include permitting processes, licenses and renewals (Sec 5-11). The National Guidelines for Administering the Timber Provisions of the *Indian Act* and its Regulations (2008) are also relevant. These guidelines explain forestry policy and guidelines, timber-related offences, timber transactions and conditions, permitting processes, permits to cut for sale, and licensing processes. Section 01-01 #3 notes that federal objectives are to secure benefits for First Nations in the form of stumpage revenues and other economic benefits, environmental protection, and forest regeneration (National Guidelines for Administering the Timber Provisions of the *Indian Act* and its Regulations, 2008). Section 01-01 #6 mentions that the federal government will work with First Nations to improve the legislative and regulatory framework for reserve forestry.

If First Nations seek to opt out of the *Indian Act* in respect to resource management rights, they can turn to the Framework Agreement on First Nation Land Management (1996), implemented under the *First Nations Land Management Act* (1999). Under this agreement, First Nations have the option to exercise control of their lands and resources by opting out of 44 land-related sections of the *Indian Act* (FNL MRC, 2022).

The *Forestry Act* (1985) is another major piece of federal legislation that could impact Indigenous forestry prospects. This act is a protective measure for forest retention (Sec 3) and permits the Minister to implement surveys and agreements with provinces (Sec 3.1c-e), as well as conducting studies and investigations, and provide aid (Sec 3-2). Section 5 discusses that Forest Experimental Areas (FEAs) could be designated as such by the Governor in Council with the purpose of research for forest protection and management. Section 6 a-f states that if compromised, the FEAs can be protected via various measures (removing timber, protecting

flora and fauna, etc.). The *Timber Regulations* (1993), which are applicable under section 5 of the *Forest Act*, outline the regulations respecting the cutting and removal of timber in a forest area. In the case of Indigenous forestry, the Minister may grant a permit for use to a band for band purposes, or to a member or group of members of a band for personal use (*Timber Regulations*, 1993).

From an ecological perspective, it is important to note that the *Fisheries Act* (1985) states that “no person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat” (Sec 35(1)). This prohibition could be relevant in the case of forestry activities on reserve land. The *Migratory Birds Convention Act* (1994), along with Migratory Birds Regulations, ensure the protection of migratory birds, their eggs and nesting sites from wood harvesting activities. The *First Nations Commercial and Industrial Development Act* (2005) can be applied when First Nations are planning industrial or commercial undertakings on reserve land. Upon request of the First Nation, environmental regulations can be made under this act and could apply to commercial forestry activity on reserve land (*First Nations Commercial and Industrial Development Act*, 2005).

Finally, the Pan-Canadian Framework on Clean Growth and Climate Change (2016), which Manitoba joined in 2018, should be considered from a climate change perspective. This framework, which seeks to assist Canada in meeting emissions reduction targets, growing the economy, and building resilience to a changing climate, could be particularly impactful in terms of building adaptive capacity in northern Indigenous communities. Section 1.3 of this framework emphasizes that strengthening collaboration between Indigenous groups, governments and industry is needed, and should be based on recognition of rights, respect, cooperation, and partnership. Section 3.2 (4) notes energy efficient housing and building code adaptation is

needed for Indigenous communities, and the framework emphasizes that governments should partner with Indigenous peoples in designing relevant policies and programs that support housing initiatives in Indigenous communities. Section 4.4 (2) discusses the need to build climate change resilience in the north by establishing a Northern Adaptation Strategy through collaboration with Indigenous peoples and federal/territorial governments. Finally, Section 4.5 (3) affirms that governments must work in partnership with Indigenous communities to support adaptation strategies to combat flooding, forest fires and winter road failures – all of which are increasingly relevant in Manitoba.

#### 4.1.2. Indigenous policy measures

The Joint Committee on Climate Action Annual Report to the National Chief and the Prime Minister (2020), developed by the Government of Canada and the Assembly of First Nations, emphasizes the recognition of Indigenous rights highlighted in UNDRIP. In this report, emphasis is given to encouraging meaningful engagement with First Nations rights holders, the inclusion of First Nations in climate policy and advancing First Nations participation in clean growth.

Specific to Indigenous forestry, The Fifth Report on Indigenous Held Forest Tenure in Canada (2020), produced by The National Aboriginal Forestry Association, provides high level information on tenure metrics and policy updates for each province in respect to Indigenous-held forest tenure in Canada. Third party certification metrics, regional tenure dynamics and options for innovation in the forest sector are all discussed (NAFA, 2020). Pages 11-12 contain the Indigenous held forest tenure metrics and policy commentary for Manitoba, and in 2019, Manitoba reported 58,902 m<sup>3</sup>/yr of Indigenous forest tenure. The report notes that Indigenous-held forest tenure is consistently growing in Canada, with Indigenous groups advancing forest

management reconciliation in every region and province (NAFA, 2020). Further, opportunities for involvement and collaboration for Indigenous groups in the forest sector have also grown and diversified (NAFA, 2020).

The above federal policies can impact reserve land, while the provincial policies, outlined below, largely regulate Crown lands. These federal and provincial policies can interact with each other in various ways, which are discussed in the subsequent sections.

#### 4.1.3. Provincial policy measures

Provincial legislation largely regulates Crown land and has little to do with reserve land. This section references documents that could impact off-reserve Indigenous forestry in Manitoba and highlights the potential for increased Indigenous participation in forestry.

The major provincial acts in respect to forestry policy are *The Crown Lands Act* (1987), *The Forest Act* (1987) and *The Forest Health Protection Act* (2007). *The Crown Lands Act* (1987) focuses on activity on Crown lands only. If Indigenous forestry harvests timber on Crown land, permitting processes are described in section 7. Section 7.1.1(3)(a) of the act affirms the treaty rights each First Nation holds under section 35 of the *Constitution Act* (1985). *The Forest Act* (1987) also governs forest resources on Crown land. Section 11(1) may be of importance for Indigenous groups aiming to obtain timber cutting rights on Crown land and explains the disposition of these rights. *The Forest Health Protection Act* (2007) can act as a protective measure for forests surrounding First Nations communities, although it does not discuss First Nations explicitly. Section 2 of the act states that its purpose is to protect the health of provincial trees and forests by taking measures against invasive forest diseases and insects, detaining or eradicating such pests and creating initiatives to protect the health of forests in Manitoba.

Other provincial legislation that could impact Indigenous forestry are *The Conservation Agreements Act* (1997) and *The Environment Act* (1987-88). The former affirms the need for landowners and conservation agencies to protect and enhance natural ecosystems, wildlife or fisheries habitats and plant and animal species in Manitoba. This act does not discuss reserve land; however, it could impact Indigenous groups participating in forestry on Crown land. *The Environment Act* (1987-88), which also neglects to mention Indigenous groups, does provide support for existing and future provincial planning and policy mechanisms. Section 1(1) states that the intent of this act is to:

...develop and maintain an environmental protection and management system in Manitoba which will ensure that the environment is protected and maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for this and future generations.

Further to this, *The Environment Act* (1987-88) provides for appropriate environmental assessment of projects that could impact the environment, the appropriate level of environmental review for such projects, and provides for public consultation in regard to environmental decision-making processes in Manitoba.

While Indigenous groups are usually not specifically addressed in provincial legislation, there are reports, guidelines and frameworks developed by the Government of Manitoba that discuss Indigenous participation in resource management. There are also documents that offer information, guidelines and requirements for forest management companies (Table 2). Some of these are more relevant to Indigenous forestry than others, but all could be utilized as resources by Indigenous groups developing forestry initiatives. These resources could also be useful for Indigenous groups seeking to develop or further develop their traditional land use plans.

**Table 2:** Specific sections of provincial reports, guidelines and frameworks that are potentially

relevant for Indigenous forestry prospects.

<b>Report, guideline or framework</b>	<b>Organization(s)</b>	<b>Section(s) referenced</b>
20-Year Forest Management Plan Guideline (2021)	Government of Manitoba	All sections are relevant for actors aiming to establish a Forest Management Plan. See Section 4 for Indigenous engagement processes.
The Boreal Wetlands Codes of Practice (2020)	Manitoba Agriculture and Resource Development	Preface, Introduction, Pg. 4,5,8, 12, Appendix 3
Forest Pest Management Guidelines (2014)	Manitoba Conservation and Water Stewardship	All sections are relevant for actors participating in forest management in Manitoba.
Five-Year Report on the Status of Forestry (2016-2021)	Natural Resources and Northern Development	Executive Summary, Pg. 14, 15, 19, 23, 32
Forest Management Guidelines for Riparian Management Areas (2008)	Manitoba Conservation and Manitoba Water Stewardship	All sections are relevant for actors participating in forestry near buffer zones in Manitoba.
Forest Renewal Assessment Manual (2020)	Manitoba Agriculture and Resource Development Forestry Branch	All sections are relevant for actors participating in forest management in Manitoba.
Pre-Harvest Survey Guidelines (2003, revised 2014)	Manitoba Conservation and Water Stewardship	All sections are relevant for actors participating in forest management in Manitoba.
Field Guide: Native Trees of Manitoba	Government of Manitoba	All sections are relevant for actors interested in forestry in Manitoba
Manitoba's Submission Guidelines for Forest Management Operating Plans (2015)	Manitoba Conservation and Water Stewardship	All sections are relevant for actors seeking approval for Forest Management Operating Plans in Manitoba
Protection of Softwood Understory (2003, revised 2017)	Manitoba Conservation and Water Stewardship	All sections are relevant for actors participating in forest management in Manitoba
Forestry Road Management (2005, revised 2012)	Manitoba Conservation and Water Stewardship	All sections are relevant for actors participating in forest management in Manitoba
Biomass Management (2005, revised 2015)	Manitoba Conservation and Water Stewardship	All sections are relevant for actors participating in forest management in Manitoba

It is also noteworthy that Indigenous groups were involved in the development of a more recent publication, which demonstrates collaboration with the provincial government. In this case, the Nisokapawino Forest Management Company, which is a partnership involving seven northern Manitoba First Nations, contributed to the production of the Forest Renewal Assessment Manual (2020).

Of the documents in Table 2, three are particularly noteworthy for Indigenous forestry: Manitoba's Submission Guidelines for Forest Management Operating Plans (2015); the Five-Year Report on the Status of Forestry (2016-2021); and the 20-Year Forest Management Plan Guideline (2021). Page 6 of the submission guidelines details the importance of meaningful discussion between Crown-Aboriginal consultation:

Crown-Aboriginal consultation may be ongoing. The objective of Crown-Aboriginal consultation is to hear and understand Aboriginal interests and concerns through a meaningful discussion. Based on these discussions, Manitoba Conservation and Water Stewardship may require changes to the OP or mitigation measures to be implemented to address those concerns.

The five-year status report, which identifies how the province is managing a variety of changes and challenges to Manitoba's forestry industry, discusses Indigenous participation in forestry in multiple sections. Page 11 highlights the creation of Nisokapawino. Page 19 details that there are "over 5 million tonnes of biomass material available in Manitoba every year from agriculture, forestry residue, and from marginal lands and roadside ditches", and First Nations in Manitoba could utilize biomass produced from the forestry industry to offset diesel energy use. Page 24 highlights the "first-of-its-kind Option License" the Province granted four First Nations under the Forest Act. The province suggests this Option License could renew forestry activities in on the East Side of Lake Winnipeg through Indigenous-led economic opportunities and environmental opportunities. This initiative involves Black River First Nation, Brokenhead

Ojibway Nation, Hollow Water First Nation and the Sagkeeng Anicinabe Government. The Province notes that a “considerable amount of work needs to be done before developing a Forest Management License” in this area. This includes the completion of wood supply and commercial suitability studies and the pursuance of private partnerships and investment opportunities.

The five-year status report also highlights the Forestry and Peatlands Branch’s involvement in projects such as “Bipole III, the Manitoba-Minnesota Transmissions Project, the East-Side Transmission Project, the Birtle Transmission Project, and the development of Shoal Lake 40 First Nation’s all-season access road”, which all required “participation in Crown Indigenous consultation and determining a fair price for any harvested timber.” Further to the sections discussing Indigenous participation in forestry, the report also reiterates Manitoba’s commitment to The Pan-Canadian Framework on Climate Change and the need for bolstering adaptive capacity in the forest sector (pages 14-15).

Finally, the 20-Year Forest Management Plan Guideline (2021) provides requirements for forest management planning in Manitoba. Following and implementing these guidelines is required by any actor seeking to implement forest management plans (FMPs) in Manitoba (20-Year Forest Management Plan Guideline, 2021). These guidelines again recognize the duty to engage with First Nations, and sets out the minimum requirements to facilitate consultation with Indigenous communities:

To help facilitate an exchange of information with the public, Indigenous communities and stakeholders, the proponent will provide information on the following aspects of the FMP:

- information to assist in a general understanding of the FMP
- management objectives
- wood supply, modelling and scenarios
- summaries of resource information (e.g. forest inventory)
- proposed methods to identify and collect values in the forest
- proposed operating areas
- proposed road access development



- monitoring (page 13).

While these guidelines also discuss the importance of adaptively managing forest resources and detail the need for “incorporating feedback from engagement with Indigenous communities,” they do not go any further on this point (page 7).

#### 4.2. Barriers to Indigenous forestry

While the previous section presented the results of the policy scan, the following sections focus mostly on the interview data. Barriers to Indigenous forestry were identified through interviews with Indigenous forestry experts and then classified into five primary groups, each of which were subdivided into secondary and tertiary subgroups. The barriers are listed in Table 3 and described in the ensuing text. Tertiary barriers are denoted by italics in the table and text.

**Table 3:** Barriers to Indigenous forestry prospects.

<b>Primary barriers</b>	<b>Secondary and tertiary barriers</b>
- Policy shortcomings	<ul style="list-style-type: none"> <li>- Mismatch of scale               <ul style="list-style-type: none"> <li>○ <i>Unique goals</i></li> <li>○ <i>Decentralization</i></li> <li>○ <i>Bureaucratic</i></li> </ul> </li> <li>- Mismatch of values               <ul style="list-style-type: none"> <li>○ <i>Trust</i></li> <li>○ <i>Communication</i></li> </ul> </li> </ul>
- Logistical roadblocks	<ul style="list-style-type: none"> <li>- Remote communities               <ul style="list-style-type: none"> <li>○ <i>Access to equipment and supplies</i></li> <li>○ <i>Storage facilities</i></li> </ul> </li> <li>- Lack of relevant human capital               <ul style="list-style-type: none"> <li>○ <i>Local expertise</i></li> </ul> </li> </ul>
- Economic constraints	<ul style="list-style-type: none"> <li>- Lack of capital               <ul style="list-style-type: none"> <li>○ <i>Funding</i></li> <li>○ <i>Housing</i></li> <li>○ <i>Lumber grading</i></li> </ul> </li> <li>- Participation in the economy               <ul style="list-style-type: none"> <li>○ <i>Distance to markets</i></li> <li>○ <i>Limited infrastructure</i></li> <li>○ <i>Competition</i></li> </ul> </li> </ul>
- Climate change impacts	<ul style="list-style-type: none"> <li>- Wildfire               <ul style="list-style-type: none"> <li>○ <i>FireSmart</i></li> <li>○ <i>Ice roads</i></li> </ul> </li> </ul>

#### 4.2.1. Policy shortcomings

##### 4.2.1.1. Mismatch of scale

Interview participants noted that federal policy is often at the wrong scale, i.e., it often tries to provide “blanket” solutions to individual First Nations with *unique goals* and objectives. Edward, a general manager of a forestry corporation expressed concern about the lack of attention to local context in federal funding programs, saying:

I've been involved in some conversations with some of the federal funding entities about some of their context. And you know, it's like you're wanting people to strap on skates and step onto an NHL rink, and they haven't even skated on the pond, right? Like, they know how to stand up on the skates. And that's it. And you want them to step out of the boards onto the NHL rink? They're going to get smoked!

A senior level employee at NRCan expressed similar concerns, noting that small-scale problems are often addressed with large-scale federal solutions. The general manager of the forestry corporation built on this, saying: “All these large-scale opportunities that the government wants to see happen, none of them will succeed, because there's been no capacity built.”

Other regulations that participants perceived as being mismatched to the local scale were the Canadian Lumber Grading standards and the National Building Code of Canada, which are applied across Canada but should be adapted to fit the *unique goals* of First Nations experiencing low housing stocks. However, one of the participants discussed a serious challenge to adapting the lumber grading standards:

How do we, at the same time, maintain the integrity of the wood that people are purchasing and make sure it's structural? And I think there is a resistance to make those policy changes that you're talking about. I don't know the solution to the lumber grading but we're working on something that may be the solution. (Rachel)

Another participant emphasized that rigidity of the building code:

You know, the building code is actually the biggest problem. It's not the Canadian Standards Association thing. It's the Canadian building code, which in the 90s, it used to have a thing in it that if you could prove that you knew something about lumber, then you can build your home with that [ungraded] lumber for small residential homes up to two stories I think, I believe is what how it would have worked. But somewhere in the 90s they removed that. (John)

Another barrier First Nations participants noted is a misunderstanding of requirements regarding Forest Management Plans. Such plans may not be required for small-scale forestry. A former Regional Forester of northern Manitoba noted:

I don't know who's telling them [Indigenous foresters] you need a Forest Management Plan. I never understood this perception. I always tried to squash it. You don't need a Forest Management Plan. That's what big companies have. I'll give you the allocation. I'm the Forest Manager and I'll ensure the sustainability. I'll provide you with an area and ensure that there is a renewal program. You just go cut. (Bruce Holmes)

Other participants suggested some type of Forest Management Plan should be required, even for small-scale operations, but agreed the development of these plans can be complex and costly. The general manager of a forestry company said this:

If a community is going to run a sawmill, that means the community has to do forest management, that means the community has to engage its members and talk about things like wildlife, ecosystem, medicinal interest, and traditional use, have public information sessions, [discuss] regeneration; how are we making sure that those that those areas that have been harvested come back up to the forest that they should be? Are we monitoring those, like all of those things that we do on a large scale for our license area? All of those things would need to be dealt with at a community level as well. (Edward)

The *decentralization* and/or devolution of resource management power to First Nations could address the issue of large-scale policies impacting small-scale Indigenous forestry operations. A major barrier to this is the *Indian Act*. One senior level employee at Indigenous Services Canada expressed their lack of ability to devolve resource management decisions to First Nations, noting that the overly *bureaucratic* framework under the *Indian Act* mandates that land be held in title by the Crown, and it would thus be difficult for the government to step back

and allow self-government. Provincial government officials also noted that the *Indian Act* places limitations on developing businesses on First Nations land.

#### 4.2.1.2. Mismatch of values

A participant discussed that Indigenous values do not fit into either federal or provincial policy regimes. This makes it difficult for government and First Nations to build *trust* and *communication*.

It's one thing to invite First Nations into a provincial regulatory regime, where the rules are set, and they've been determined by someone else, and to try and make room. But there really is no room in those regimes for Indigenous values to be expressed. (Peggy Smith)

Similarly, another participant commented on the lack of ability for government and First Nations to communicate meaningfully, noting the difference in governance systems:

Government has this system in place for policy and how they move things through, how they decide to engage, and we have problems because we don't speak the same language. And we don't understand each other's systems. (Rachel)

Etienne Belanger, the Director of Forestry at the Forest Products Association of Canada, further discussed how meaningful discussion between stakeholders and rightsholders is necessary, saying:

You need to get to the table and co-decide how things can happen, or you'll face blockades after blockades because you're not in dialogue. And if [First Nations] want to be heard they need to do something. So, I think that policy should be about transitioning towards better involvement and focus on how they can help to make such transition happen. And [First Nations] should know what's best for them. But make it a discussion.

Another barrier that was noted by participants is distrust of the First Nations Land Management (FNLM) regime. Although FNLM allows First Nations to opt out of the Indian Timber regulations, both Peggy Smith and Rachel noted that First Nations may feel wary of the

fact that FNLM, which devolves more decision-making power to First Nations, takes the onus off the federal government to provide nations with support. They had this to say:

And you're also, you know, opting out of the *Indian Act*, which for a lot of communities means letting the Department of Indian Affairs off the hook. (Peggy Smith)

I think communities here in Alberta had a deep distrust of that [First Nation] Land Management Act, and whether or not it would be actually beneficial. I think a couple of communities here in Alberta have since adopted it, but there's actually very low uptake in Alberta. (Rachel)

#### 4.2.2. Logistical roadblocks

##### 4.2.2.1. Remote communities

Interview participants identified logistical roadblocks to advancing Indigenous forestry in northern or remote communities. The Economic Development Officer of Cross Lake First Nation noted that *access to supplies* for a community sawmill could be challenging because they are costly and difficult to obtain. Further, they worry that once the equipment is in place, maintaining it will present a new challenge due to their remote location. Mike McGarry, an ex-forester in both British Columbia and northern Manitoba, and now a Winnipeg sawmill owner, stated that:

If you can't get parts, or it's extremely expensive to get parts up there, or it takes three weeks to get something up there, you can't really run a sawmill company if you're waiting three weeks every time a bearing goes, right? That's a big part of it, too. I mean, even Canadian Kraft Paper struggles with that.

Further, once equipment is acquired, communities need a place to safely store it, which presents another barrier. Participants noted the space and capital required to build safe *storage facilities* for equipment and lumber should be a major consideration.

##### 4.2.2.2. Lack of relevant human capital

Interview participants also noted logistical barriers related to lack of relevant human capital. Lack of *local expertise* was identified as a problem. A lumber grading inspector who

travels to remote communities noted that a lack of skilled trades could be an issue when running larger milling operations but would be less of a barrier with small-scale milling. That said, they mentioned they've seen labor shortages in many communities. Bruce Holmes, a retired Regional Forester who worked in northern Manitoba, agreed that the larger the operation the more prohibitive the barriers are, saying: "You've got to have a good welder. You've got to have a good mechanic. You've got to have good operators. ... It's difficult, especially in the north."

Mike McGarry noted that skilled trades are important, but so too is entrepreneurship:

So, I think that's the big key, is getting to natural entrepreneurs young. So that when the time comes, you know, and they have access to capital, and they can start something they've already got some background in this and you're not just starting from scratch.

#### 4.2.3. Economic constraints

##### 4.2.3.1. Lack of capital

Many participants also noted that the lack of access to capital presents a formidable barrier. Jim Rondeau, the former Minister of Science, Technology Energy and Mines in Manitoba, and now advisor to Norway House Cree Nation, said:

One of the biggest difficulties is lack of access to capital. So, here's an example: We had been working with a mining company, and we got a grant of \$300,000 from the Manitoba Mining Development Fund. And there's a great policy, which is giving money to start off these relationships. But can I tell you what \$300,000 does on a \$22 million [mining] camp? Yeah, nothing. It doesn't even pay the damn electric wire from the substation to the camp. There needs to be equity that the First Nations don't have to come up with, and maybe the company or the [provincial] government comes up with funds in lieu of revenue sharing. Give us [the First Nation] some love.

Mr. Rondeau used this example to drive home the idea that *funding*, which is often provided at the beginning of natural resource projects, helps projects get started, but there is a lack of sufficient funding or revenue sharing to maintain them. Tom Scott, the Economic Development Officer for Cross Lake First Nation, noted that sufficient, long-term *funding* is a major concern for Cross Lake First Nation, who are in the developmental phase of their community-led

sawmilling operations. The other side of obtaining *funding* for First Nations communities is that external organizations, contractors and consultants may take advantage of First Nations. Rachel, a member of a forest products association, highlighted the potential for this:

The thing that I've seen here in Alberta, is what I call “snake oil salesmen” who go out to communities. And we saw this, especially with the climate leadership programs. But any time a federal or provincial government launches a suite of programs, the contractors who want to get rich quick, go out to communities and sell them a bill of goods, which may or may not be what that community wants or needs.

In the case of using forestry as a *housing* solution, Charles, a senior level employee of NRCan, noted the benefits as well as ongoing economic uncertainties, saying:

I think it was Garden Hill [First Nation] in Manitoba that demonstrated that going from a standing tree to a standing home business model. And it worked, you know, they have some housing that was produced, but the economic case could never be proven. As much as we tried to show the value of, you know, a circular local economy, it was a difficult model for communities to adopt. To agree that, yes, you might be building fewer houses per year, but you're yielding better benefits to your community members. And therefore, raising prosperity in the community by preferentially funding your own housing construction as opposed to bringing in external housing inputs.

Further to this, locating an inspector to *grade* the small amount of lumber produced from a small-scale sawmilling operation can also be difficult. One inspector discussed how agencies accredited by the Canadian Lumber Standards Accreditation Board operate, and the barriers faced by remote communities:

How we operate, is we collect a monthly fee for our inspection service, which essentially just covers my travel and my wage to the facility. To fly somebody up to a northern community. I mean, besides the logistics of me having to drive to Saskatoon and then fly to Winnipeg, and then fly to a northern remote community, stay one or two evenings in a community and then fly out, the organization has to bear all these costs somehow. So, that's probably like \$5,000 right there. (John)

This is financially irresponsible and contributes to climate change unnecessarily.

#### 4.2.3.2. Participation in the economy

Another economic barrier to remote communities is their *distance to markets* and *limited infrastructure* for participating in the economy. Mathew Foss, the Vice President Research & Policy for the Canadian Council of Aboriginal Business, noted that:

If you don't have any infrastructure, clean water, reliable power grids or have reliable internet access, for instance, or phone service, it's very hard for you to participate in the current economy.

Etienne Belanger, the Director of Forestry at the Forest Products Association of Canada, noted that market distance and *competition* could be prohibitive for First Nations seeking to participate in the forest sector, saying:

Another logistical barrier is market saturation in terms of capacity and production. So, the forest sector is not the best sector to have new players to join. The supply is mostly used and we're facing large growth with international competition and production. So, the room to grow in sawmilling, the room to grow in pulp and paper, which is a completely different level of investment, is limited.

#### 4.2.4. Climate change impacts

##### 4.2.4.1. Wildfire

Regarding climate change impacts, participants focused on potential for increased wildfires and the volatility of *iceroad* networks as a barrier to Indigenous forestry prospects and as a vulnerability for northern forest-based communities. Manitoba government officials expressed their concerns over the increased frequency of wildfire in Manitoba, and a retired Regional Forester elaborated, saying:

Well [the greatest risk], it's wildfire. Because the province has been somewhat effective in suppressing wildfire for decades. So, there's a tremendous build-up of fuel in the forest that these forests would have naturally burnt if they're left on their own. But there's been suppression. And when a wildfire gets a good head of steam, it could be devastating for the community. And we're seeing that across North America, if not in the northern hemisphere right now. (Bruce Holmes)



Charles, a senior employee at Natural Resources Canada also expressed the need for communities to increase their capacity to respond to wildfire, suggesting *FirstSmart* programs be implemented.

For impacts on remote communities, fire is one of the key considerations because it affects public safety and therefore triggers evacuations and can endanger life within the communities. So, in that regard, having some participation in the forest sector could benefit a community's ability to be resilient and adapt and address the impacts of climate change by being able to perform, you know, FireSmart activities in the immediate vicinity of their communities.

Charles also noted that it can be logistically difficult to create economic opportunities from *FireSmarting*. Although timber is cleared to create a buffer zone, it may be difficult for a community to sell that timber depending on the species and size.

Being limited to *ice road access* for transporting equipment and building supplies into northern communities, or timber products out of northern communities, also presents a barrier. Further, the barrier is worsening because of climate change. Alex Budd, a Sawmill Supervisor in Norway House Cree Nation said:

Winters are kind of funny these days. You know, you don't get the good freeze that you used to get. That nice blue ice before you get snow, and the swamps would freeze and the trappers that would go out in the bush would be safe, but now it's about making safe trails for them. They even have to hire people to make safe trails now because it's so dangerous.

The general manager of a forestry company in the north also noted that ice roads are open for a shorter period and trying to haul materials into remote communities becomes logistically challenging. As well, he discussed that coordination of safe transport of materials, offloading them, and safely housing them all come into play.

### **4.3. Enablers of Indigenous forestry prospects**

Numerous enablers of Indigenous forestry were identified, grouped into three primary classes, and further subdivided into various secondary and tertiary subclasses. The enablers are outlined in Table 4 and described in the text that follows. Tertiary enablers are italicized in the table and text. Participants sometimes expressed enablers in terms of being opportunities.

**Table 4:** Enablers of Indigenous forestry prospects.

<b>Primary enablers</b>	<b>Secondary and tertiary enablers</b>
- Supportive policy mechanisms	<ul style="list-style-type: none"> <li>- Decentralization/ devolution of power               <ul style="list-style-type: none"> <li>○ <i>FNLM</i></li> <li>○ <i>Department of Indigenous Services Act</i></li> </ul> </li> <li>- Increased collaboration and revenue sharing               <ul style="list-style-type: none"> <li>○ <i>Timber harvesting deal</i></li> <li>○ <i>Enhanced Sustainable Forest License (SFL)</i></li> </ul> </li> <li>- Funding programs</li> </ul>
- Economic and community development	<ul style="list-style-type: none"> <li>- Internal economy               <ul style="list-style-type: none"> <li>○ <i>Reduction in costs</i></li> <li>○ <i>Increased local employment</i></li> <li>○ <i>Grading lumber</i></li> </ul> </li> <li>- Housing</li> <li>- Ecosystem values</li> <li>- Increased wellbeing</li> </ul>
- Climate change adaptation and mitigation	<ul style="list-style-type: none"> <li>- FireSmart programs</li> <li>- Sustainable harvesting and carbon capture</li> <li>- Utilizing biomass</li> </ul>

#### 4.3.1. Supportive policy mechanisms

##### 4.3.1.1. Decentralization/devolution of power

*First Nation Land Management (FNLM)* was presented as a barrier in the previous section given the lack of trust some First Nations may have in the federal government. In saying that, *FNLM* can also present as an opportunity to devolve decision-making power from Indigenous Services Canada to local First Nations in respect to their natural resources. Eric Cameron, the Lands Manager for Swan Lake First Nation, emphasized that operating under

*FNLM* has given their nation more decision-making authority when it comes to their resources.

He noted that before operating under the *FNML*, developing projects was a lengthy and bureaucratic process. He said that funding decisions and processes:

... took a long time, the processing process, so that was a stumbling block or a barrier on larger entities or projects that we were intending to do. The problem [was] that they had control over everything, but as a Land Manager, we deal with all of our lands issues ourselves. We have a lands committee and stuff like that. (Eric Cameron)

A senior level employee at Indigenous Services Canada also discussed that the *Department of Indigenous Services Act* aims to implement the gradual transfer of departmental responsibility to Indigenous organizations, all while respecting Indigenous ways of knowing, being and doing.

#### 4.3.1.2. Increased collaboration and revenue sharing

Another potential enabler or opportunity for Indigenous forestry prospects is increased collaboration with governments and industry. In terms of First Nations collaborating with the provincial government, opportunities for revenue sharing were emphasized by multiple participants. Edward, a general manager of a northern forestry company, noted that:

...there's an element of revenue sharing in the conversation that's going on in the province, some recent announcement by the provincial government, that they're going to share dues that are collected for timber usage on Crown land. That's a huge step. We've been pushing for that as an industry for years. But that's needed, as a starting point, to really get Indigenous communities to be wanting to be involved in in the sector and influential in the sector.

The provincial government has made recent strides in revenue sharing with Indigenous communities, striking a *timber harvesting deal* with Norway House Cree Nation in 2022 (Province of Manitoba, 2022). This deal, and its potential for the future, was elaborated on by Jim Rondeau, an advisor to the First Nation, who was a part of the negotiations. Mr. Rondeau explained that Norway House Cree Nation will receive a 45% forest resource revenue share with

the provincial government, which he described as “historic” for Manitoba. The deal also involves funding from the provincial government for a comprehensive land use study for the First Nation to use as a planning resource moving forward. Mr. Rondeau emphasized that an important aspect of this agreement is the development of a Resource Management Board, that will be co-led by the First Nation and the provincial government. Mr. Rondeau explained that the deal includes a plan to plant millions of trees to sequester carbon, lumber for 500 houses over 10 years, and a cash settlement from the provincial government to kickstart the project.

Etienne Belanger expressed praise for the *Enhanced Sustainable Forest License (SFL)* implementation model that is being used in Ontario. Under this model, forestry companies in Ontario can obtain Enhanced SFL status by collaborating with Indigenous rightsholders in the forest sector (Government of Ontario, 2021). Mr. Etienne noted that this collaborative model of Indigenous participation in the forest sector can be successful for Indigenous groups, saying that:

I love the Ontario models of the Enhanced SFL where you put these co-ops in place rather than doing a full takeover that becomes fully owned by Indigenous people. In the fully owned [model], I think that the successes are more limited.

He also discussed that forest management companies that already have the resources and harvesting practices in place, can collaborate with Indigenous rightsholders, allow them to be a part of the decision-making process, and share revenues with each other:

I think that the Ontario model has been much more of a success model because they will keep the same [harvest] area and will just bring more players in the decision making [process], which will do co-management and co-creation, which I think is also in the spirit of modern treaties.

#### 4.3.1.3. Funding programs

Access to funds can be another roadblock for many First Nations. To remediate this, there is a wide array of funding opportunities presented through federal or Indigenous-led policy

measures. Descriptions of the most impactful programs in respect to Indigenous forestry prospects in Manitoba are discussed below and the program titles are italicized.

Many federal funding programs are implemented through NRCan. *The Expanding Market Opportunities Program* focuses on increasing Canada's presence in national and international forest markets, enhancing knowledge of forest products amongst suppliers and promoting the use of Canadian wood in non-traditional construction (NRCan, 2021). Indigenous groups are encouraged to apply (NRCan, 2021), which could be useful for First Nations in Manitoba.

*The Green Construction through Wood Program* encourages a greater use of wood in Canadian construction projects to encourage a low-carbon economy (NRCan, 2021). The program aims to commercialize wood-based products, replicate non-traditional wood-based buildings and bridges and encourages revisions to the National Building Code of Canada (NRCan, 2021). This program could be useful for First Nations in Manitoba hoping to utilize local timber in future construction projects. Examples of timber construction projects funded by this project include tall wood buildings, low-rise nonresidential buildings and timber bridges for both traffic and pedestrians (NRCan, 2021). NRCan (2021) emphasizes that Indigenous communities could benefit from increased market opportunities, job opportunities and more affordable housing through this program.

*The 2 Billion Trees Program* provides support for tree planting projects, aiming to plant two billion trees by 2030 and assist Canada in reaching its 2030 greenhouse gases emissions reduction target while establishing building blocks necessary to reach net-zero emissions by 2050 (Government of Canada, 2022). Recently, the Governments of Canada and Manitoba signed an agreement to deepen their collaboration in this initiative (Government of Manitoba,

2022). This collaboration will support the planting of an additional 500,000 trees annually, focusing on areas impacted by wildfires, forest insects, and diseases (Government of Manitoba, 2022). This agreement will involve supportive partnerships with Manitoba's Indigenous communities, many of which are forest-based (Government of Manitoba, 2022).

The *Indigenous Forestry Initiative*, which has received applications from Manitoba in recent years, provides financial support to Indigenous-led economic development programs within the Canadian forest sector (NRCan, 2022). This program aims to increase Indigenous participation in the forest sector, enhance economic development and engagement with Indigenous communities, and advance collaboration with Indigenous stakeholders and rightsholders in the forest sector (NRCan, 2022). An interview participant, who is a senior level employee at NRCan, noted the need for this program to be more open to Indigenous-led projects that could provide more qualitative than quantitative benefits (e.g. community driven rather than economically driven).

The *First Nation Adapt Program* is a Crown-Indigenous Relations and Northern Affairs Canada program that could assist First Nations impacted by climate change (CIR and NA, 2021). For forest based First Nations communities in Manitoba, this program can provide funding for infrastructure that has been impacted by wildfire or winter road failures (CIR and NA, 2021). The main limitation of this program is that it only provides funding for communities south of the 60<sup>th</sup> parallel (CIR and NA, 2021).

The *Strategic Partnership Initiative*, which is a program implemented through ISC, aims to assist First Nations in developing economic opportunities with a variety of stakeholders and rightsholders (ISC, 2022). This program is shared by a large network of federal partners, including Natural Resources Canada (ISC, 2022). Indigenous businesses, organizations,

partnerships, joint ventures, communities and local governments are encouraged to apply (ISC, 2022). There is at least one example of an Indigenous-led organization in Manitoba that has received funding through this initiative. There is also funding available through ISC for First Nations seeking to operate under *First Nations Land Management*. ISC (2022) notes that funding is available for developing land codes, facilitating the transition from the developmental phase to the operational phase and ongoing funding for operations costs in respect to land management. ISC also provides funding through the *Emergency Management Assistance Program* (EMAP), which assists communities in preparing for natural disasters such as wildfire (ISC, 2021). The Assembly of Manitoba Chiefs, Interlake Reserves Tribal Council and Fisher River First Nation are examples of Indigenous groups in Manitoba that have received funding through this program (ISC, 2021).

Finally, the *Outland Youth Employment Program* (OYEP) is an Indigenous-led organization that could provide funding opportunities for Indigenous forestry. This organization is a national network that provides land-based education, training or work opportunities for Indigenous youth in Canada. The program targets high school age Indigenous youth and focuses on education and training that replicates real life work environments. OYEP was initially developed to support economic opportunities in Ontario's forest sector and has since expanded to other provinces and employment sectors. That said, OYEP still has a large focus on forestry and 57% of their partners are involved in the forest sector.

#### 4.3.2. Economic and community development

##### 4.3.2.1. Internal economy

Regarding economic development for communities, many participants emphasized the opportunities community-led forestry initiatives could provide for their internal economy. This

could mean a *reduction in costs* or logistical barriers associated with shipping in building materials, the potential for *increased local employment* and a potential solution to the housing crisis in the north. A senior level employee of NRCan noted that their funding programs are encouraging the internal economy in First Nations, explaining that the lumber produced from a sawmill can be bought and utilized by their internal housing departments.

While *grading lumber* in remote communities was presented as a formidable barrier in the previous section, there could be internal solutions. These were discussed by an executive level policy advisor at a forest products association who is planning on piloting a lumber grading school for First Nation partners. The school would provide students with basic literacy and numeracy skills used in lumber grading. Programs like this, the participant suggested, could provide greater opportunities for members of Indigenous communities to become certified as a lumber grader, which would remove the costs of having to pay for an accredited lumber grader to travel to remote communities multiple times a year.

#### 4.3.2.2. Housing

Housing solutions were also expressed as an opportunity by many of the participants. A Lumber Grading Inspector who often travels to northern communities had this to say:

See, what we had always talked about is that even if the sawmill on a reserve, even if a board coming out of their sawmill costs 10 cents more than a board coming out of Winnipeg, you've got all these people working. They're learning skills, they're learning work culture, they're learning all of these things, which is totally way more beneficial.  
(John)

Eric Cameron, the Lands Manager for Swan Lake First Nation, emphasized that their main interest in forestry is to provide housing for their community. Eric noted that the housing situation is “overcrowded”, saying that:



And that's where we come with a housing shortage, because we've got a huge waiting list right now. There are some families that have two or three families living in their one house.

Tom Scott of Cross Lake First Nation echoed the opportunity for a housing solution in their own community, saying that “We have a large area of resources, one of the largest in Manitoba, for forestry”. Mr. Scott also noted that they plan to use these resources for housing development in their community, which would create opportunities for a sustainable local market. He also commented on the poor state of housing in Cross Lake First Nation:

A lot of our homes were built in the 40s and 50s and have eventually eroded to the soil conditions and nature's conditions. They weren't built with all the proper wood products that were needed to be able to face all the weather challenges that are here today.

This presents a clear opportunity for housing issues to be addressed in their community. Sawmill owner Mike McGarry emphasized that the lumber that could be produced in northern Manitoba could be superior to what is being shipped in. He said this of poor craftsmanship and low quality lumber used in prefabricated homes:

They shipped all these houses up there [northern Manitoba], like tons and tons [of prefab homes]. I was up there. They were just garbage. They met the building code, but they were garbage. You know, being able to build something with your own product up there is, I think, [is] going to be superior. (Mike McGarry)

The sawmill operators (Alex Budd and Pat Bayer) in Norway House Cree Nation noted there are other opportunities for their sawmill beyond structural lumber for housing. The sawmill manager, Pat Bayer, discussed that they primarily produce fence boards for their community. A senior level employee at NRCan noted that:

You can get really creative with what you can produce from a sawmill. You know, and as I said, it's not all about the core construction materials but you know, you can have finishing materials, including siding, rough sawn lumber for siding, slat, shiplap, board and batten siding, cabinetry, countertops, flooring and houses. (Charles)

The above comments from people who have experience in northern forestry indicate that there are opportunities to be seized.

#### 4.3.2.3. Ecosystem values

A senior level employee at NRCan explained that the federal government need not be over prescriptive for northern communities, and they should recognize other social and/or ecosystem values as much as economic values. In respect to their funding applications, they said:

We're asking ourselves, based on applications we've received that were turned down because they weren't strong enough in their economic development arguments, you know, are the other objectives that were a part of those applications any less valid?  
(Charles)

There are increasing opportunities to look at Indigenous-led forestry operations as adding other ecosystem values to their communities. Dr. Peggy Smith, a Registered Professional Forester and a resource management Professor at Lakehead University explained that ecosystem services do not often have financial implications associated with them, and this needs to change.

#### 4.3.2.4. Increased wellbeing

Another opportunity for Indigenous communities to participate in forestry is the sense of pride it could provide for community members. Alex Budd, the Sawmill Supervisor in Norway House Cree Nation emphasized that he takes pride in milling wood locally: "Like, take a little bit of pride that your wood comes from right here. You know? It doesn't come from way down in Saskatchewan or other areas". Tom Scott, the Economic Development Officer for Cross Lake First Nation discussed the potential for a local sawmill to provide their youth members with new work opportunities. He said:

...in terms of development for our youth for these areas, you know, this is probably what's going to be one of the biggest things that we have to do, is to make sure that we create these opportunities for our youth so that they can become part of the program.

#### 4.3.3. Climate change adaptation and mitigation

#### 4.3.3.1. FireSmart programs

Participants also discussed opportunities for mitigating climate change impacts in forest-based communities. Mike McGarry, who worked as a forester and wildfire fighter in northern Manitoba, emphasized that “from my opinion, working as forest fire fighter as long as I did, was every one of those communities is a ticking time bomb for being burned over.” Mr. McGarry suggested that in order to mitigate this, communities should participate in FireSmart programs. He also detailed that creating a fire buffer around communities could be helpful in mitigating wildfire risks, saying that communities could harvest the timber encroaching on their community and allow poplar, which poses a lesser fire risk, to reforest the surrounding area. Mr. McGarry noted that all of the harvested timber could be used by the community.

#### 4.3.3.2. Sustainable harvesting and carbon capture

Participants discussed other ways in which climate change impacts can be addressed by Indigenous-led forestry initiatives. The manager of the Norway House Cree Nation Sawmill, Pat Beyer, detailed the sustainable nature of their tree harvesting process, saying:

One of the things about the way we do our milling for climate change or helping [mitigate] climate change is that we only do selective cutting. We don't clear it. Also, you can hardly tell we've been in [the forest] if you don't see our ruts [from machinery]. So that's how I feel it's better for the environment, is that we do it this way rather than clear cutting.

Other participants discussed the carbon capture abilities of sustainable forest management processes, suggesting that capturing the carbon while harvesting the timber is more beneficial than potentially allowing a tree to burn in a wildfire. Manitoba Government officials noted the carbon capture qualities of forestry processes, and a Lumber Grading Inspector agreed, saying:

Every time in the boreal forest you cut down a tree, turn it into a log, or into a board, essentially, that carbon is now stored in the board. It's not burned. And the boreal forest burns every 60 to 80 years. (John)

#### 4.3.3.3. Utilizing biomass

The Pan-Canadian Framework on Clean Growth and Climate Change (2016), which is a policy mechanism that aims to bolster adaptive capacity in First Nations communities, emphasizes that communities should be provided with clean energy alternatives to diesel fuel. Dr. Peggy Smith suggested that biomass, which is a by-product of timber harvesting processes, could be utilized by communities that seek to reduce their diesel usage, saying:

The other area [worth] looking at would be the biomass stuff, you know, the energy. And certainly, that's being subsidized now by climate change policies, you know, looking at getting local, Indigenous communities off diesel, away from fossil fuels and stuff like that. And sometimes there's enabling legislation or at least policies. I mean, in Ontario, there are some energy policies in place that are promoting alternative energy within First Nation communities.

### **4.4. Opportunities for policy learning about Indigenous-led forestry**

#### 4.4.1. Learning opportunities within specific policies and organizations

This section presents the policy learning opportunities within specific policies and organizations that have been discussed in this chapter. These opportunities are guided by the foundational policy learning processes presented in Chapter 2, namely learning from an authoritative body of knowledge, learning through dialogue between stakeholders, learning through negotiation, and learning through hierarchical settings (where actors learn the scope of results over time) (Dunlop and Radaelli, 2018).

At the federal level, the National Guidelines for Administering the Timber Provisions of the *Indian Act* and its Regulations (2008), which are particularly impactful on Indigenous forestry prospects operating under the *Indian Act*, highlight opportunities for policy learning by emphasizing that department officials could encourage and work with First Nations to understand the regimes in place, as well as involve the First Nation in policy-making initiatives.

This includes dialogue amongst the First Nation, Indigenous Services Canada, and the potential buyers regarding compliance and understanding of the policies supporting timber harvesting.

Similar to these national guidelines, the National Forest Strategy (2003-2008) encourages adaptable forest legislation through involvement and discussion with First Nations. Under objective 2, which seeks to “develop legislation and policies to improve the sustainability (social, environmental and economic) of forest-based communities”, action item 2.1 states that the forest sector should “Develop and adapt forest legislation and policies to provide involvement of forest-based communities in sustainable forest management decision making and implementation” (National Forest Strategy, 2003-2008: 12-13). Further to this, action item 2.3 recommends that the forest sector could “Support capacity building in local communities so that they can effectively participate in processes that lead to community sustainability” (National Forest Strategy, 2003-2008: 13). Finally, under objective 3, action item 3.1 details that the forest sector should “Initiate processes with Aboriginal Peoples and appropriate levels of government for establishing a shared and grounded understanding of Aboriginal rights, Aboriginal title and treaty rights...” (National Forest Strategy, 2003-2008: 15).

The Joint Committee on Climate Action Annual Report to the National Chief and the Prime Minister (2021), which highlights the main barriers First Nations face in adapting to climate change, notes that joint policy development between First Nations and governments should increase, and Traditional Knowledge systems should be utilized in the development process. This recent report suggests that opportunities for “First Nations to participate throughout various stages of policy development and implementation (e.g. via engagement or other collaborative arrangements)” are still limited, and so too are their opportunities to contribute to decision-making (JCCAA Annual Report, 2021: 31).

There are also organizations that contribute to policy development or analysis for Indigenous businesses and rightsholders in the forest sector that could present policy learning opportunities. These organizations include The Canadian Council for Aboriginal Business (CCAB), The National Aboriginal Forestry Association (NAFA) and The Forest Products Association of Canada (FPAC). The CCAB's mission is to promote a strong and prosperous Indigenous economy by building relationships, opportunities and awareness for their members (CCAB, 2023). This organization promotes the Tools and Financing for Aboriginal Business program that provides education and resources that may promote policy learning in the Indigenous business sector (CCAB, 2023). The CCAB also provides publications on public policy that impact Indigenous businesses through accessible formats and policy briefs (CCAB).

NAFA is an Indigenous-led organization that aims to "...promote and support increased Aboriginal involvement in forest management and related commercial opportunities, while staying committed to holistic or multiple-use forestry, to build sustainable Aboriginal communities" (NAFA, 2023). This organization offers training opportunities regarding business development, education, policy and First Nation control in regard to forest management (NAFA, 2023). They also offer multiple publications that can present opportunities for policy learning. For example, the Fifth Report on Indigenous Held Forest Tenure in Canada (2020) offers commentary on policy updates that could impact Indigenous groups in the forest sector.

FPAC, which is a trade association that represents Canada's wood, pulp and paper producers, provides a voice for Canada's forest sector along with helpful resources for forestry prospects (FPAC, 2021). FPAC's 'Forestry for the Future' website operates as a resource to advance such prospects and includes a section on Indigenous Partnerships (FPAC, 2021). This section notes that "Canada's forest industry promotes training and education opportunities for

Indigenous people – particularly youth...” (FPAC, 2021). FPAC has shared Mercer International’s story as a recent example of this, as this forestry company plans to employ Indigenous youth through OYEP (FPAC, 2021). Further, the company has also supported programming and education through the National Centre for Truth and Reconciliation (NCTP) (FPAC, 2021).

#### 4.4.2. Policy learning opportunities and barriers discussed by interview participants

Policy learning opportunities were identified by stakeholders and rightsholders in the forest sector. Barriers to learning opportunities were also apparent. Interview participants noted that in some cases, policy measures could be made more accessible for Indigenous rightsholders. Participants also discussed the opportunities for increased participation of Indigenous groups in policy development.

In regard to policy opportunities for Indigenous rightsholders in the forest sector, the general manager of a forestry company in Manitoba discussed the potential for policy reform, saying:

There's always opportunity to revise policies and standards, that's for sure. That just requires a willingness of a government, right? They have to be willing to embrace whatever it is that needs to change and get on with it. (Edward)

One senior level employee of Indigenous Services Canada noted that their sector of the government has evolved to always include First Nations in the decision-making process in regard to policy development. This person emphasized that policy changes that could impact upon First Nations should be Indigenous led. They also noted how surprised they were about the low level of interest they’ve received in federal programming for Indigenous groups in respect to Indigenous participation in Manitoba’s forest sector, saying there could be room to make this sector more

accessible. In regard to Manitoba's forest sector, Manitoba government officials noted that provincial legislation attempts to create a level playing field for all businesses. The Economic Development Officer of Cross Lake First Nation discussed that it is becoming easier to work with the province on policy issues, saying:

...as we move into a different generation of thinkers, we're able to reach out to the government easier. And we're able to build relationships as long as we're able to connect. And if we're able to connect, we're able to speak to some of the errors, like you're speaking to me right now, about different errors in forestry programs. (Tom Scott)

The Vice President of Research and Policy at the CCAB discussed that meaningful relationships between Indigenous groups and government is important for policy learning, saying:

I think one of the biggest needs is for a long-term relationship, and assistance in both helping community members to understand the opportunities as well as the tools in which to build skills. And I think probably fundamental to that is a true partnership arrangement. (Mathew Foss)

Mr. Foss also noted the importance of tailoring partnerships to each community's local circumstances:

And, a real acceptance that there isn't a single model that's going to work, that in each community, each band, each nation is unique. With respect to that, a partner, or potential partner is going to have to treat that in a very much an open dialogue and come willing to be a partner and listen, as opposed to believing that they've got answers. (Mathew Foss)

Further to this, the general manager of a forestry company provided an example of what they felt was a successful model of communication between government, industry and Indigenous groups. During this company's developmental phase, an Indigenous liaison position was created for an Indigenous employee to disseminate technical information to the local communities. This person emphasized the importance of having an Indigenous person who spoke Cree to provide community members with information on their forestry operations and policies. This person said:

...we work with our liaison every day and communicate with that person about what's happening on the landscape, where our planning process is heading, where do we need that person to be reaching out to communities. And the idea is that [the liaison] needed to



be an Indigenous Cree speaking individual. With enough exposure to forestry and industry to be able to help bridge gap, to be able to make sure that, you know, we stand in front of a crowd at an information session at a community and we have all our acronyms and our forestry [technical language] which all sounds like every day [language] to us. And it confuses people, especially if you have Elders in a room who maybe aren't English first language, they may be Cree First language. (Edward)

In regard to barriers to policy learning, an executive level Policy Advisor at a Forest Products Association discussed federal-provincial relations as a common hurdle for stakeholders and rightsholders in the forest sector, emphasizing that there is a need for the federal government to better understand local forest policy when implementing funding programs. A senior level employee at Indigenous Services Canada concurred, emphasizing that the federal government should be learning about local forest policy directly from provincial governments, rather than being educated within their own federal organizations. The policy advisor emphasized that a lack of understanding of policies and legislation reaches all levels of society and called for greater cross sectoral collaboration:

All you have to do is look at current political climate to understand that we've got a bit of a social studies problem where people don't understand the history, they don't understand how government works, they don't understand the division of powers between the federal government and provincial government...And then we bring in [other] stakeholders. And so that, to me, is the single biggest barrier. I don't have a solution for that...I think that's the biggest problem, that in order to actually move the dial, we need cross collaboration of multiple sectors and multiple actors and stakeholders from different groups. Like, that's what would make this successful. (Rachel)

#### **4.5. Chapter summary**

This chapter presented the results from the policy scan and interviews with Indigenous forestry experts. It is clear there are a variety of federal, provincial and Indigenous policy measures that could impact Indigenous forestry prospects. These policies can present as barriers or enablers to such prospects. Further, there are other barriers and enablers that should be

considered. While communities face logistical roadblocks, economic constraints and climate change impacts, there are opportunities to develop their local economies and adapt to climate risks. These opportunities could provide insight into the potential for Indigenous-led forestry on reserve land, as well as increased Indigenous participation in Manitoba's forest sector. Finally, it is clear there are opportunities within various organizations and policy measures for policy learning to occur, which could allow for new policies to be developed or old policies to be reformed. A lack of understanding of policy processes across governments and organizations highlights a need for increased learning opportunities. Further to this, participants emphasized the need for greater Indigenous involvement in the policy making process.



## CHAPTER FIVE: DISCUSSION

### 5.1. The viability of Indigenous-led forestry in northern Manitoba

Both the literature on Indigenous forestry and the results of this research present a variety of opportunities for Indigenous-led forestry. This section discusses the economic, social and environmental viability of Indigenous-led forestry initiatives in Manitoba. While local employment and improved housing stocks are issues that must be addressed in many First Nations communities, the viability of a successful Indigenous-led forestry initiative is dependent on the wood supply in the surrounding forests, the accessibility of the wood supply, sufficient funding and capacity to sustain the initiative, and, depending on their objectives, the profitability or economic success of such initiatives. If the initiatives' objectives involve utilizing local lumber for housing supplies, then contracting out or employing locally a lumber grader will also be an important consideration.

#### 5.1.1. Wood supply and access

More than half of the province of Manitoba is forested, and many of Manitoba's 63 Indigenous communities are forest based (Lawler and Bullock, 2017). While the full potential of Sustainable Harvest Levels (SHL) of softwood and hardwood supply in Manitoba is approximately 7,868,958 m<sup>3</sup> (Five-Year Report on the Status of Forestry, 2016-2021), research suggests the province's wood supply is underutilized (Lawler and Bullock, 2017). 58,902 m<sup>3</sup> of the wood supply in Manitoba is held by Indigenous groups (NAFA, 2020). While there seems to be a clear opportunity to utilize more of the province's forest resources, it is important to understand that not all forests in Manitoba produce viable timber. Many of the province's forested areas are difficult to access, which presents a formidable economic barrier.

The Forestry and Peatland's Branch has been gradually commissioning economic feasibility studies of Manitoba's forests to determine SHLs in northern Manitoba (Five-Year Report on the Status of Forestry, 2016-2021). In 2020, data were collected by Nisokapawino Forest Management Corporation in the Saskatchewan River Forest Section to update forest inventory in the area, and to inform Manitoba's Growth and Yield Model, which will project forest growth over time (Five-Year Report on the Status of Forestry, 2016-2021). The province suggests that this model could inform future forestry projects in the north (Five-Year Report on the Status of Forestry, 2016-2021). Public data are not yet available on the current level of viability of the Saskatchewan River Forest Section, although the results of the Five-Year Report on the Status of Forestry (2016-2021) suggest the study has been completed.

Diane Roddy, the general manager of Sakâw Askiy Management in northern Saskatchewan, explained that it is important to understand the economic viability of a stand before harvesting and noted that the forest composition across northern Saskatchewan and Manitoba can vary. For example, if housing is the focus, not all forested areas are populated with trees large enough to produce dimensional lumber. A senior level employee at NRCan discussed that in certain cases, it may be more economically viable for communities to utilize their forest resource for value added products, such as fence boards or siding, or non-timber forest products, such as essential oils or food products. That said, Bruce Holmes, a retired regional forester who operated in northern Manitoba, explained that there is great potential in the north for an increase in harvesting, saying "...the resource is there, and the timber is there. There's good quality timber across northern Manitoba, especially near the larger lakes, where white spruce grows to a good size and quality." The general manager of a forestry company that operates in northern Manitoba explained that although forested areas in the region can be logistically challenging due

to their remote location, the forest resources can be utilized for a variety of forest products. This participant also emphasized that “it's not inconceivable that you could have a community sawmill sawing dimensional lumber, to meet the needs of the community for housing” given the quantity and quality of the surrounding forest resource in much of northern Manitoba. The government’s viability studies are focused on large-scale FML areas, whereas First Nations may be seeking small-scale opportunities. Participants suggest that the forests surrounding many First Nations in northern Manitoba may be sufficient in terms of tree quantity and quality for small-scale sawmill initiatives.

Access to northern forest resources is another important logistical barrier that was presented in Chapter 4. Recent research suggests that the ice road networks in the north are increasingly volatile due to the warming climate (Dong et al., 2022). Interview participants who live in northern First Nation communities agreed, explaining that the ice road season is getting shorter and safe trail access is an increasing concern for community members in the winter. Alex Budd, the Sawmill Supervisor in Norway House Cree Nation, explained that “the best time to harvest is in the winter” as less damage is created to the understory, there is an increased access to the wood supply and the trees aren’t filled with sap, which is better for their machinery. Mr. Budd also explained that trails are less safe as the wetlands and waterways no longer freeze consistently, so care needs to be taken to safely access their wood supply.

#### 5.1.2. Funding and economic development

Access to sufficient funding and the development of sustainable internal economies are recognized by academics, governments and participants in this research as being critical for successful Indigenous-led forestry initiatives. Bullock et al. (2018: 893) emphasize that “Development that is culturally appropriate, environmentally responsible, and socioeconomically

beneficial is a major priority expressed and demanded by Indigenous leaders, organizations and communities.” A senior level employee at NRCan explained that federal funding programs often focus on Indigenous-led projects that are economically beneficial in regard to profit, with less of a focus on the tangible, socioeconomic benefits they may create for community members such as new skills and job opportunities. This federal employee, along with other interview participants who are privy to funding processes, agree that social values and ecosystem values should be considered more when funding projects.

Interview participants also noted the expenses of a sawmilling initiative as being prohibitive for a First Nation. The *Start-Up Guidelines and Generic Business Plan for Small Scale Sawmills in First Nation Communities* (2022), developed by Indigenous Development Support Services (IDSS) provides resources for forest management planning, lumber production, communication and community support, timber supply and access, lumber milling, lumber grading, value added production and sustainable business planning (Gardiner, 2022). The guidelines note that while over 70% of Indigenous communities are located in the forest, there have been few viable sawmilling operations to meet the lumber needs of local communities. Appendix B of the *Start-Up Guidelines and Generic Business Plan for Small Scale Sawmills in First Nation Communities* (2022) lists the various types of equipment (e.g., forestry, safety, sawmilling, value-added), storefront expenditures and site preparation needed and their approximate costs for a starting a small-scale sawmill. These guidelines can be a useful resource for Indigenous forestry proponents seeking to determine the costs of their forestry initiatives. A senior level employee at NRCan emphasized that if a First Nation applying for funding understands the approximate costs of their project, and can provide a detailed business plan, the likelihood of success of their application will increase.

There are various funding programs available to First Nations, and it is important they are made accessible. Being creative with funding applications can be useful in obtaining the funding required for a project. For example, the *Strategic Partnership Initiative* is an ISC funded program that specifically seeks to support projects with multiple stakeholders and rightsholders. Applicants in Manitoba have had recent success with this program as forestry initiatives often involve a variety of stakeholders and rightsholders. ISC also provides funding for First Nations that choose to develop their own Land Code under FNLM, which could mitigate the distrust some interview participants expressed in devolving decision-making authority from ISC to the First Nation.

### 5.1.3. Lumber grading

Although further research is needed to fully explicate the importance of grading lumber for determining the ability of an Indigenous-led forestry initiative to supply lumber for local housing stocks, the thesis results indicate that grading is a formidable barrier. The IDSS *Start-Up Guidelines and Generic Business Plan for Small Scale Sawmills in First Nation Communities* (2022: 25) explain that lumber for “typical stick-wall framed house construction” must be grade stamped in order to meet the National Building Code of Canada. These guidelines suggest that there are two ways to have lumber grade stamped: 1) have a local operator pass the lumber grading course and obtain your own grade stamp, or 2) hire a lumber grader come into the community to do the grade stamping (Gardiner, 2022). Both these practices are costly and prohibitive in their own way (Gardiner, 2022). The first involves lumber grading course fees and licence maintenance fees, and the second involves considerable travel costs (Gardiner, 2022, Lumber Grading Inspector interview). In response to the first problem, an interview participant, who works for a forest products association, discussed the possibility of subsidizing the lumber



grading course for sawmill operators in remote First Nations communities. This potential solution could allow First Nations to employ a local lumber grader and obtain a grade stamp for their forestry initiative at a reduced cost.

## **5.2. Indigenous inclusion in the forest sector**

### **5.2.1. Inclusion in provincial policy**

This section discusses Indigenous inclusion in the forest sector, covering both involvement in policy development and the related issue of whether Indigenous interests are considered in the policy regime. Recent research has emphasized there is a need for increased Indigenous involvement in Manitoba's forest policy regime (Griffith et al., 2015; Lawler and Bullock, 2017). While the provincial government has made strides in greater Indigenous inclusion, "evidence from recent decades indicates a desire for changes to the dominant policy regime, particularly regarding indigenous forestry arrangements" (Lawler and Bullock, 2017: 121). This conclusion is consistent with views expressed by the interview participants in this study who have rights or a stake in Manitoba's forest sector, as well as the policy scan conducted on provincial legislation. Provincial governments have exclusive powers over their natural resources while the federal government has jurisdiction respecting Indigenous matters (Government of Canada, 2021), therefore Indigenous interests often go unrecognized.

Griffith et al. (2015) discuss Manitoba's forestry regime as being a closed policy network, and Fortier et al. (2011) note that only a small portion of First Nation communities in Manitoba have collaborated with the provincial government on forest management operations. In a more recent study, Lawler and Bullock (2017) explain that Manitoba's *Five-Year Report on the Status of Forestry (2006-2011)* highlighted the government's intent to include Indigenous communities in a sustainable forest economy. The most recent *Five-Year Report on the Status of*

*Forestry (2016-2021)* suggests that the provincial government has made progress on these intentions.

One example of Indigenous inclusion in Manitoba's forest sector that is highlighted in the *Five-Year Report on the Status of Forestry (2016-2021)* is the Option License granted to four First Nations under *The Forest Act*, which could renew forestry activities on the East Side of Lake Winnipeg. This is an area in Manitoba's forest sector that has experienced multiple barriers to Indigenous forestry in previous decades. The development of The Nisokapawino Forestry Management Corporation (NFMC) is another example of increased Indigenous involvement, although not government led. NFMC has increased Indigenous involvement in the forest sector through their partnership with Canadian Kraft Paper and Nekoté LP, which is owned by seven First Nations. Chapter two highlighted Manitoba's FML-2 as being the largest forest tenure in North America, and this is where NFMC operates.

A more recent example of progress is the timber harvesting deal negotiated by the provincial government and Norway House Cree Nation (Province of Manitoba, 2022). Griffith et al. (2015) explains there have been increasing opportunities for revenue sharing and co-management relationships between First Nations and the provincial government. Nearly one decade later, this timber harvesting deal aims to implement multiple facets of support by the provincial government for Norway House Cree Nation and their forestry initiatives, including providing a 45% revenue share on Crown timber dues (Province of Manitoba, 2022). The former Minister of Science, Technology Energy and Mines in Manitoba, and now advisor to Norway House Cree Nation, Jim Rondeau, described this percentage of revenue sharing as "historic" for First Nations in Manitoba, and he hoped it set a precedent for increased revenue sharing in other natural resource projects in Manitoba.

While these examples are noteworthy, the *Five-Year Report on the Status of Forestry (2016-2021)* suggests the need for greater Indigenous inclusion in Manitoba's forest sector remains the same. Mr. Rondeau explained that the timber harvesting deal was born out of legal action taken by Norway House Cree Nation in regard to improper consultation by the provincial government. Similar action was taken by Minegoziibe Anishinabe (formerly Pine Creek First Nation) in 2022, when they took legal action against the forestry corporation Louisiana Pacific for improper consultation regarding their traditional territories. Beckley et al. (2005) notes that exerting legal action can be a necessary last resort for groups seeking to protect their forest values. By asserting their rights, a large portion of Indigenous groups have been involved in the Canadian forest sector in recent decades (Wyatt et al., 2019). Etienne Belanger, the Director of Forestry at the Forest Products Association of Canada, explained that although governments reacting to legal actions can result in reforming forest policy, governments should "see the writing on the wall" and begin developing forest policy that is more proactive in nature. Provincial policies such as *The Crown Lands Act* (1987), *The Forest Act* (1987), *The Environment Act* (1987-88), *The Conservation Agreements Act* (1997), *The Wildfires Act* (1997) and *The Forest Health Protection Act* (2007) largely exclude Indigenous groups in their descriptions. As Griffith et al. (2015) explain, *The Forest Act* has undergone little reform since its initial development, and lack of inclusion of Indigenous groups in the provincial policy regime remains a problem.

#### 5.2.2. Inclusion in federal policy

A senior level employee at ISC discussed Indigenous inclusion in federal policy as being complex, given the restrictive and overly bureaucratic nature of federal policies. Indigenous rights and claims in the forest sector are also complicated (Beckley et al., 2005), and care must

be taken when integrating Indigenous and treaty rights with federal guidelines on reserve land. Typical methods for public involvement in sustainable forest management (e.g., Beckley et al., 2005) may not be suitable for engaging with Indigenous communities, although conventional methods have been used to good effect in some cases. An example is the survey conducted to address the barriers and successes of Indigenous-led sawmills (Gardiner, 2021) that provided early inspiration for this research. The IDSS *Start-Up Guidelines and Generic Business Plan for Small Scale Sawmills in First Nation Communities* (2022) emphasizes the bureaucratic nature of government policy, noting the permitting process under *The Indian Timber Regulations* can be “excessively complex”, although First Nations operating under First Nations Land Management (FNLM) are exempt from this. Both federal employees who were interviewed for this research acknowledged the complexity of federal policy but emphasized that the current direction of federal policymaking aims to be more inclusive. A senior level employee at NRCan emphasized that federal programs are seeking to better align with UNDRIP, specifically Article 23, which states that Indigenous peoples have the right to develop and determine the priorities of policies that impact upon them (UNDRIP, 2007). This employee noted that the federal government assisted IDSS, an Indigenous-led organization, in their development of the *Start-Up Guidelines and Generic Business Plan for Small Scale Sawmills in First Nation Communities* (2022). The senior employee at ISC explained that one of their department mandates is to devolve control over natural resources to local First Nations.

Regarding FNLM, which provides First Nations with greater decision-making authority in respect to their natural resources, interview participants had mixed views. Dr. Peggy Smith noted that the process of FNLM devolves the power from ISC to the local First Nation, “letting them off the hook” when it comes to providing the First Nation with support. Eric Cameron, the

Lands Manager for Swan Lake First Nation noted that FNLM provides their First Nation with greater flexibility, less governmental red-tape and increased momentum when developing land-based initiatives. In Manitoba, 19 First Nations are currently participating in FNLM (FNL MRC, 2023). First Nations who are a signatory of the FNLM Framework Agreement can either be in their developmental or operational phase (FNL MRC, 2023). The first of these includes the development of the First Nation's own land code, which replaces the 44 land management sections under the *Indian Act* (FNL MRC, 2022). The operational phase includes implementation of the land code (FNL MRC, 2022). Three First Nations that participated in this research are all in different phases of FNLM. Cross Lake First Nation is not a signatory of the Framework Agreement, however, their Economic Development Officer expressed interest in participating under the FNLM in the future. Norway House Cree Nation are in the developmental, and Swan Lake First Nation are in the operational phase. A First Nation does not need to operate under FNLM in order to develop successful forestry initiatives, however, it may result in less governmental red tape and greater decision-making authority. In saying that, Mr. Cameron noted that the developmental phase of FNLM is lengthy, which could also present as a barrier.

### 5.2.3. Opportunities for policy learning

The concept of policy learning is still emerging in the field of forest governance (Cheng et al., 2011), however, the results show there are increasing opportunities for learning to occur. Chapter 4 highlighted select federal reports, guidelines and frameworks that could present policy learning opportunities for Indigenous groups in the forest sector. There are also Indigenous-led organizations such as the CCAB and NAFA that encourage Indigenous inclusion in policy development. While Dunlop et al. (2018) suggest that governments have played a stronger role in advancing research on evidence-based policy making in recent years, which has resulted in a

deeper understanding of policy learning, there is limited evidence of this in Manitoba. Research participants emphasized that although there are opportunities for Indigenous involvement in forest policy decisions, the provincial government has taken little action. The lack of Indigenous inclusion in provincial forest policy could result in fewer opportunities for policy learning to occur in Manitoba's forest sector. There could be mutual learning opportunities for the provincial and federal governments in respect to increasing Indigenous involvement. There is also evidence of learning opportunities occurring in the private sector. Section 4.4.2 highlighted the forest management company in Manitoba that employs a Cree speaking Indigenous liaison who disseminates forest policy information to Indigenous groups in their forest management area. The general manager of this company explained that this employee provides local First Nations with a variety of learning opportunities in respect to their forestry practices by disseminating this information in their traditional language.

### **5.3. Building adaptive capacity in northern forest-based communities**

#### **5.3.1. Bridging forestry initiatives and FireSmart programs**

There is sufficient evidence to suggest the boreal forest is facing various challenges in respect to climate change (Davidson et al., 2003; Halofsky et al., 2018; Williamson et al., 2019). The First Nation communities situated in Manitoba's boreal forest could be challenged with increased forest pests, a potential change in the composition and range of the boreal forest, and the increased frequency and intensity of wildfires (Chaste et al., 2019; Flannigan et al., 2009; Tymstra et al., 2019). In respect to forest pests, the provincial government has developed policies to mitigate their impact on the forest sector (see the *Forest Pest Management Guidelines* (2019)). The impact of the potential change in the composition of the boreal forest and its potential range expansion remains unclear (Dial et al., 2022), although forestry initiatives will undoubtedly have

to adapt. The intensity and frequency of wildfires and their impacts on forest-based First Nations, who often have little capacity to respond to wildfire scenarios (McGee, 2021), were of the greatest concern to the interview participants in this research.

The literature presented in Chapter 2 suggests that FireSmart forest management programs can be a pragmatic approach to SFM in areas with high risks for wildfire and implementing such programs will be crucial for northern forest-based communities (Hirsch et al., 2001). While the results of this research detail the federal funding that is available for such programs, it is unclear why there has been so little uptake for First Nation communities in Manitoba. Provincial foresters, federal employees and members of the private forestry industry all expressed a need for First Nations in Manitoba to build their capacity for responding to wildfires through FireSmart practices. Many of the participants believe that FireSmarting can be built into forestry initiatives by contracting local employees to reduce fuel loads surrounding the community by brush clearing. Participants also suggest that the resulting wood supply from brush clearing can be used as firewood for community members, or, if applicable, utilized by their local sawmill. However, provincial resources for building wildfire resilience in First Nations communities are limited and Indigenous rights and issues are not specifically addressed in *The Wildfires Act* (1997).

#### **5.4. Chapter Summary**

This chapter discussed the viability of Indigenous-led forestry initiatives in Manitoba. While the barriers to these initiatives can be challenging, the results show there are increasing opportunities for small-scale sawmills to sustain themselves and produce forest products for local economies. Manitoba's wood supply is underutilized, and with many First Nations residing in forested areas, there is a clear opportunity for increased timber harvesting to occur. This chapter

also focused on the current level of Indigenous participation in Manitoba's forest sector in comparison to previous years, with a focus on the lack of Indigenous inclusion in forest policy. While the results confirm that greater Indigenous inclusion in forest policy is necessary, there has been progress both federally and provincially. Finally, the opportunity to integrate FireSmart practices with local forestry initiatives was discussed as an adaptation tool for First Nation communities facing increased wildfire frequencies and little provincial support.





## **CHAPTER SIX: CONCLUSIONS AND FINAL RECOMMENDATIONS**

This chapter summarizes the research objectives and how they were addressed and identifies next steps on how Indigenous-led forestry initiatives can be advanced in Manitoba. It also discusses opportunities for increased collaboration and policy learning involving Indigenous communities, the provincial and federal governments and forestry industry. The chapter also offers recommendations for policy reform, describes the study's main contributions to knowledge, and proposes promising lines of future research. The final section addresses the main limitations of the research.

### **6.1. Project summary**

The purposes of this research were twofold: understand how Indigenous-led forestry initiatives can enhance the adaptive capacity and climate change resilience in First Nation communities and address the barriers and social injustices Indigenous groups experience in respect to federal and provincial forest policy. These barriers were initially identified as a priority by Indigenous Development and Support Services, an organization that provided initial inspiration and important background information for this research. Through this research, four research objectives were addressed:

- 1) Describe federal, provincial, and Indigenous policy measures impacting Indigenous-led forestry;
- 2) Identify policy provisions that support or hinder Indigenous-led forestry;
- 3) Identify opportunities for policy learning about Indigenous-led forestry; and
- 4) Make recommendations for improving the prospects for Indigenous-led forestry based on accrued evidence and consultation with First Nations communities.

The first research objective was addressed through a systematic policy scan and interviews with Indigenous forestry experts that uncovered various federal, provincial and Indigenous policy measures that could impact upon Indigenous forestry prospects in Manitoba. Policies that could impact Indigenous forestry prospects are described in section 4.1 of Chapter 4. The second research objective was also addressed through the policy scan and discussion with experts on certain aspects of Indigenous forestry. The enabling or preventive factors for Indigenous-led forestry were highlighted in the results. While focus was given to specific policy measures impacting on Indigenous-led forestry, interview participants highlighted other important barriers to and opportunities for Indigenous-led forestry. The third objective was achieved by analyzing policy measures that could present opportunities for learning, and challenges to policy learning were explained by interview participants. The final objective, which is addressed in the following section, was achieved through consulting with members of three First Nation communities and attempting to analyze the findings of this research through a decolonized research approach.

## **6.2. Conclusions and recommendations**

The results of this research demonstrate that there are opportunities to advance local forestry initiatives to address housing and employment issues in First Nations communities. At the same time, the results show that successful initiatives in Manitoba are limited compared to other provinces. The Nisokapawino Forest Management Corporation, the Option License on the East Side of Lake Winnipeg and the newly negotiated timber harvesting agreement between Norway House Cree Nation and the provincial government are all examples of increased Indigenous participation in Manitoba's forest sector. In saying that, Indigenous-led forestry initiatives that

seek to advance the unique goals of individual First Nations remain limited, though there are steps that can be taken, some of which are outlined below.

#### 6.2.1. Increased collaboration

Moving forward, the success of Indigenous-led forestry initiatives will hinge on greater inclusivity on the part of the provincial and federal governments and increased collaboration among governments, industry and Indigenous organizations in order to solve logistical barriers (Fortier et al., 2011; Griffith et al., 2015). Success will also hinge on sustainable forest planning and management that is led by Indigenous communities and is based on their values, knowledge and aspirations. The findings of this research suggest that the barriers to Indigenous-led initiatives can potentially be addressed by increased opportunities for revenue sharing with the provincial government and/or developing partnerships with stakeholders in the private sector that could provide First Nations with the necessary resources and expertise. These partnerships should be Indigenous-led, or at the very least Indigenous groups should be treated as equals in the decision-making processes involving stakeholders.

Participants in this research also highlighted the success of the Enhanced Sustainable Forest Licenses (SFLs) model in Ontario, which requires companies in the forest sector to partner with other groups, such as local First Nations. SFLs are similar to Manitoba's FMLs in that they involve a 20-year sustainable forest management plan. While Manitoba's 20-year FMLs encourage consultation with Indigenous groups, the enhanced SFLs in Ontario aim to develop forestry initiatives that are locally driven by Indigenous groups involved with the forest management area (Ontario, 2023). With that said, Ontario's SFL processes still have drawbacks. Etienne Belanger, the Director of Forestry for the Forest Products Association of Canada explained that although Indigenous groups lead the decision-making process, the collaboration is

ultimately imposed upon them by the provincial government, with forest management companies providing the forest tenure. This could mean the unique goals and objectives of the Indigenous groups are not being met. Despite that problem, participants described the Enhanced SFLs as a model the provincial government should consider adapting and innovating further.

#### 6.2.2. Policy reform

One way to increase Indigenous involvement in the forest sector and advance Indigenous-led forestry initiatives is to include Indigenous groups more meaningfully in provincial and federal forest policy. While the recent *Five-Year Report on the Status of Forestry* (2016-2021) discusses Indigenous groups in Manitoba's forest sector, provincial legislation is largely exclusive. For example, the province's main piece of legislation that regulates the forest sector, *The Forest Act*, requires reform to incorporate sustainable forest management objectives and greater Indigenous inclusivity (Fortier et al., 2011; Griffith et al., 2015). There are also opportunities to reform other provincial legislation that does not specifically address Indigenous rights and interests, such as *The Crown Lands Act* (1987), *The Environment Act* (1987-88), *The Conservation Agreements Act* (1997), *The Wildfires Act* (1997) and *The Forest Health Protection Act* (2007).

In respect to *The Wildfires Act* (1997), provincial support for FireSmarting around forest-based First Nation communities in Manitoba should be considered based on community interest in such programs. This could reduce resources required by the province when fighting wildfires, mitigate evacuations due to wildfire and safeguard remote First Nation communities. There are opportunities for provincially supported FireSmarting programs to be implemented under Indigenous-led forestry initiatives. For example, FireSmart BC provides funding and support for FireSmarting local First Nations and assisted in the development in the Salish Fire Keepers

Society for Coast Salish First Nations (FireSmart BC, 2022). This example is notable because the provincial government provides support without being overly prescriptive, while respecting the fact that Indigenous peoples have been using fire to manage landscapes through cultural burning for thousands of years (FireSmart BC, 2022). In Manitoba, the federal EMA funding program has supported emergency preparedness and FireSmart activities for Fisher River First Nation and the Interlake Reserves Tribal Council (ISC, 2021).

The provincial government also recognizes the Forest Sections that divide Manitoba's forest lands should be updated to reflect recent ecological knowledge (Province of Manitoba, 2022). The provincial government should go further on this and include traditional ecological knowledge when making decisions regarding their Forest Sections. Federally, the National Building Code of Canada (NBCC) (2020) presents barriers to Indigenous forestry that should be addressed. Grading lumber to meet the standards of the NBCC can be costly and prohibitive and could be addressed by subsidizing lumber grading courses for Indigenous sawmill operators or adapting the NBCC to be more flexible for communities with low housing stocks.

Article 23 under UNDRIP recommends Indigenous groups should be included during future provincial and federal policy-making processes, and policies that impact Indigenous groups should be Indigenous led. These recommendations should be implemented under the *United Nations Declaration on the Rights of Indigenous Peoples Act* (2021). By including all stakeholders and rightsholders in the forest sector in policy-making processes, increased opportunities for learning will occur.

### 6.2.3. Funding avenues

With respect to funding opportunities, federal funding programs for Indigenous forestry should not be overly prescriptive and should consider the social and ecosystem values projects

could provide, rather than focusing solely on traditional economic outputs. In respect to this, Indigenous groups applying for federal funding need to be exhaustive in determining the potential outcomes of their projects and all potential funding avenues should be explored. The funding programs detailed in this research can be used as a resource for Indigenous groups seeking funding. Finally, the *Start-Up Guidelines and Generic Business Plan for Small Scale Sawmills in First Nation Communities* (2022) should be used by Indigenous forestry proponents as a resource for developing a sustainable business plan for their forestry initiatives. These guidelines can also be a useful resource when applying for funding or timber harvesting permits.

#### 6.2.4. Final thoughts

The goal of this research was to advance Indigenous-led forestry initiatives by better understanding the policy provisions that impact upon them and providing recommendations to improve policy. In saying this, it is important to understand that the path towards achieving the unique goals and objectives of individual First Nations must be Indigenous led. This can be done through meaningful consultation and collaboration with government and industry with Indigenous groups leading the decision making. It is also important to note that “Indigenous interests” are not monolithic and can vary between different groups and individuals in any given community. Further to this, the *Indian Act* prescribes rapid reelection cycles for band council members, which can further affect a community’s varied interests. I do not intend to be overly prescriptive with this research, nor do I intend to define the goals of unique First Nation communities in Manitoba. The recommendations here are not solutions. Rather, they are mere starting points to address the barriers and opportunities for Indigenous-led forestry.

### 6.3. Summary of main findings

- The viability of Indigenous-led forestry in Manitoba:
  - Future research is needed to determine the economic viability and sustainable harvest levels of Manitoba's northern forest resources.
  - Access to a viable wood supply can be difficult in remote northern areas, and the logistical barrier this presents should be taken into consideration for communities interested in developing forestry initiatives.
- Increased collaboration:
  - Logistical barriers can be mitigated through increased meaningful collaboration among Indigenous groups, the federal and provincial governments, and industry.
  - Partnerships should be Indigenous-led, and forest planning and management should include Indigenous knowledge, values and aspirations.
- Federal and Provincial policies:
  - The results of this research provide a summary of provincial and federal policies that could impact upon Indigenous-led forestry prospects. A summary of useful resources and funding avenues is also provided.
  - Until recently, Indigenous groups have largely been excluded from Manitoba's forest policy regime, in terms of policy making and whether Indigenous interests are considered in the regime. This research provides suggestions for policy reform and greater Indigenous inclusion in policy-making processes.
  - Successful examples of Indigenous forestry in Manitoba are highlighted throughout this thesis. Examples include the Option License on the East side of Lake Winnipeg, the Nisokapawino Forest Management Corporation and the recent Timber Harvesting



- Agreements developed between the provincial government and Norway House Cree Nation.
- Federal policies may not be made according to scale, meaning that national policies often provide blanket solutions to unique problems. Examples of this include the *Indian Act*, the National Building Code of Canada and the CLSAB Lumber Grading Regulations.
  - Policy learning opportunities:
    - The results highlight select federal reports, guidelines and frameworks that could present policy learning opportunities for Indigenous groups in the forest sector.
    - The results also show that there are learning opportunities for the provincial and federal governments, as well as industry, in respect to increasing Indigenous involvement in the forest sector.
  - Building adaptive capacity:
    - There are opportunities for the provincial government to provide First Nations with financial support in regard to FireSmarting their communities.
    - Future research is needed to determine the effects climate change is having on Manitoba's ice road networks.

#### **6.4. Contributions to knowledge**

The main contributions to knowledge of this thesis are empirical, namely a better understanding of policy measures that either facilitate or inhibit Indigenous-led forestry initiatives. This research also confirms the need for provincial legislation to be more inclusive of Indigenous groups in Manitoba, and sheds light on opportunities for policy reform. The experts on Indigenous forestry interviewed for this study shed light on how Indigenous-led forestry

initiatives could enhance the adaptive capacity and climate change resilience of forest-based First Nations while respecting Indigenous autonomy, culture, and values. Finally, this research reviews how policy learning can play a role in knowledge acquisition, and how Indigenous inclusion in policy making could strengthen learning opportunities.

### **6.5. Future research**

Research on Indigenous involvement in natural resource sectors has increased over the past decade, and although the literature is rich and diverse, there are still important research gaps and unanswered questions (Bullock et al., 2018). The literature on Indigenous forestry suggests that although there are successful examples of First Nations co-managing resources in other provinces, Manitoba has the capacity and need to do more. Further, there is no research on Indigenous-led forestry initiatives on treaty land specifically. This thesis fills a part of this research gap. While there is literature on the impacts and potential reform of forest policy in Canada (Nenko et al., 2019), and Manitoba (Griffith et al., 2015), there is little research on policy learning in the forestry sector. Given the collaborative nature of the forestry sector, there is opportunity to study how policy learning impacts policy makes and users. Future research should address how policy learning can contribute to increased Indigenous participation in policy making processes. This study also augments and complements data collected and analyzed through recent third-party surveys intended to better understand and guide Indigenous forestry development (i.e., IDSS 2022).

Future research on the economic viability of the boreal forest in northern Manitoba is also necessary to better understand the degree to which Indigenous-led forestry is feasible and can be sustainable. The composition of boreal tree stands, potential for species migration, the impacts of forest pests and diseases and the increased frequency of wildfires in the boreal forest will all

impact Indigenous forestry prospects in northern Manitoba. Future research should address the gap in our understanding of these potential risks and impacts. Research is also needed to better understand the volatility of the ice road networks in northern Manitoba, as the accessibility of many First Nations communities and their forest resources is in question. Research is also needed for product and market diversification that is matched with Manitoba's forests, Indigenous desires, workforce and geography.

### **6.6. Limitations**

A main limitation of this research was the limited capacity I had to visit more First Nations communities in northern Manitoba that are interested in developing forestry initiatives. This was due to the limited amount of time I had to build meaningful relationships with First Nations communities during this research, the limitations COVID-19 presented early on in this research and the limited accessibility of remote First Nation communities in Manitoba. Although I am grateful for the members of the three First Nations who participated in this research, I would have liked to meet with more given that many of the participants in this research are non-Indigenous.

Another limitation of this research is that I am non-Indigenous. Although I sought to conduct this research through a decolonized approach, it is important to note that my worldviews as a non-Indigenous person limit my ability to understand the unique goals and objectives of Indigenous groups seeking to participate in the forest sector. As such, I take full responsibility for any errors or omissions in this research in respect to Indigenous autonomy, culture and values.



## REFERENCES

- Ashton, B., Needham, T., & Beckley, T. (2007). How is Crown Forest Policy Developed? Probing New Brunswick's Protected Areas Strategy. *The Forestry Chronicle*, 83(5), 689–698.
- Assuah, A., & Sinclair, A. J. (2019). Unraveling the Relationship between Collective Action and Social Learning: Evidence from Community Forest Management in Canada. *Forests*, 10(6), 494.
- AMC. (2022). FireSmart Call for Applications: 2021 to 2022. *Assembly of Manitoba Chiefs*. Retrieved from <https://manitobachiefs.com/firesmart-call-for-applications-2021-to-2022/>
- A.P.T.N. (2022) *First Nations to Sue Manitoba, Company Over Logging on Traditional Lands*. Retrieved from <https://www.aptnnews.ca/national-news/first-nations-in-manitoba-suing-province-company-over-logging-on-traditional-lands/>
- Beaudoin, J.-M. (2012). Aboriginal Economic Development of Forest Resources: How can we Think Outside the Wood Box? *The Forestry Chronicle*, 88(05), 571–577.
- Beckley, T. M. (2014). Public Engagement, Planning, and Politics in the Forest Sector in New Brunswick, 1997–2014. *Journal of New Brunswick Studies*. 5.
- Beckley, T. M. (1998). Moving Toward Consensus-based Forest Management: A Comparison of Industrial, Co-managed, Community and Small Private Forests in Canada. *The Forestry Chronicle*, 74(5), 736–744.
- Beckley, T., Parkins, J., and Sheppard, S. 2005. Public Participation in Sustainable Forest Management: A Reference Guide. Sustainable Forest Management Network, Edmonton, Alberta. 55 pp.
- Beverly, J. L., & Bothwell, P. (2011). Wildfire Evacuations in Canada 1980-2007. *Natural Hazards*, 59(1), 571–596.
- Brewer, G. D. (1999). The Challenges of Interdisciplinarity. *Policy Sciences*, 32(4), 327–337.
- Bullock, R., Broad, G., Palmer, L., & Smith, M. A. (Peggy). (2017). *Growing Community Forests: Practice, Research, and Advocacy in Canada*. Univ. of Manitoba Press.
- Bullock, R., Kirchhoff, D., Mauro, I., & Boerchers, M. (2018). Indigenous Capacity for Collaboration in Canada's Energy, Forestry and Mining sectors: Research Metrics and Trends. *Environment, Development and Sustainability*, 20(2), 883–895.
- Bullock, R., Hanna, K., & Slocombe, D. S. (2009). Learning from Community Forestry Experience: Challenges and Lessons from British Columbia. *Forestry Chronicle*, 85(2), 293-304.

Bullock, R., Zurba, M., Reed, M. G., & McCarthy, D. (2020). Strategic Options for More Effective Indigenous Participation in Collaborative Environmental Governance. *Journal of Planning Education and Research*, 0739456X20920913.

Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council, Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, December 2018.

Canada, G. of C. C.-I. R. and N. A. (2021). *First Nation Adapt Program*. <https://www.rcaanc-cirnac.gc.ca/eng/1481305681144/1594738692193>

Canada, G. of C. I. S. (2021). *Emergency Management Assistance Program: Funded projects 2018 to 2019*. <https://www.sac-isc.gc.ca/eng/1557227920685/1557227945452>

Canada, G. of C. I. S. (2012). *First Nations Land Management*. <https://www.sac-isc.gc.ca/eng/1327090675492/1611953585165>

Canada, G. of C. I. S. (2020). *Funding programs*. <https://www.sac-isc.gc.ca/eng/1591289631120/1591289804651>

Canada, N. R. (2015). *Canada's forest laws*. Natural Resources Canada. <https://www.nrcan.gc.ca/our-natural-resources/forests/sustainable-forest-management/canadas-forest-laws/17497>

Canada, N. R. (2019). *IFI - funded projects*. Natural Resources Canada. <https://www.nrcan.gc.ca/science-and-data/funding-partnerships/funding-opportunities/forest-sector-funding-programs/indigenous-forestry-initiative/ifi-funded-projects/21699>

C. B. C. (2021). *Wildfires force more Manitoba First Nations to begin evacuations in Interlake region* / CBC News. CBC. <https://www.cbc.ca/news/canada/manitoba/manitoba-first-nations-fire-evacuations-1.6033832>

Charnley, S., & Poe, M. (2007). Community Forestry in Theory and Practice: Where Are We Now? \*. *Annual Review of Anthropology*, 36.

Chaste, E., Girardin, M. P., Kaplan, J. O., Bergeron, Y., & Hély, C. (2019). Increases in Heat-Induced Tree Mortality Could Drive Reductions of Biomass Resources in Canada's Managed Boreal Forest. *Landscape Ecology*.

Cheng, S. A., Danks, C., Allred, R. S. (2011). The Role of Social and Policy Learning in Changing Forest Governance: An Examination of Community-Based Forestry Initiatives in the U.S. *Forest Policy and Economics*, 13(2), 89–96.

Cox, T. (2014). *The Policy Scan in 10 Steps*. 18.

Creswell, J. W., & Creswell, J. D. (2018). *Research design* (5th ed.). SAGE Publications.

- Creswell, J. W. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Los Angeles, Sage.
- Dahlstrom, M. F. (2014). Using Narratives and Storytelling to Communicate Science with Nonexpert Audiences. *Proceedings of the National Academy of Sciences*, *111*, 13614–13620.
- Davidson, D. J., Williamson, T., & Parkins, J. R. (2003). Understanding Climate Change Risk and Vulnerability in Northern Forest-based Communities. *Canadian Journal of Forest Research*, *33*(11), 2252–2261.
- Dial, R. J., Maher, C. T., Hewitt, R. E., & Sullivan, P. F. (2022). Sufficient Conditions for Rapid Range Expansion of a Boreal Conifer. *Nature*, *608*(7923), Article 7923.
- Diduck, A., Sinclair, A. J., Hostetler, G., & Fitzpatrick, P. (2012). Transformative Learning Theory, Public Involvement, and Natural Resource and Environmental Management. *Journal of Environmental Planning and Management*, *55*(10), 1311–1330.
- Dong, Y., Xiao, P., Zhang, X., Wu, Y., Wang, H., & Luan, W. (2022). Warmer Winters are Reducing Potential Ice Roads and Port Accessibility in the Pan-Arctic. *Environmental Research Letters*, *17*(10), 104051.
- Duinker, P. N., Matakala, P. W., Chege, F., & Bouthillier, L. (1994). Community Forests in Canada: An Overview. *The Forestry Chronicle*, *70*(6), 711–720.
- Dunlop, CA, Radaelli, CM. (2013). Systematizing Policy Learning: From Monolith to Dimensions, *Political Studies* *61*, 3, 599–619.
- Dunlop, C. A., & Radaelli, C. M. (2018). The lessons of policy learning: Types, Triggers, Hindrances and Pathologies. *Policy & Politics*, *46*(2), 255–272.
- Dunlop, C. A., Radaelli, C. M., & Trein, P. (Eds.). (2018). *Learning in Public Policy*. Springer International Publishing.
- Egunyu, F., Reed, M. G., & Sinclair, J. A. (2016). Learning Through New Approaches to Forest Governance: Evidence from Harrop-Procter Community Forest, Canada. *Environmental Management*, *57*(4), 784–797.
- FireSmart BC. (2022). <https://firesmartbc.ca/>
- First Nation Commercial Forestry. (2020). *Frontier Centre For Public Policy*. <https://fcpp.org/2020/02/23/first-nation-commercial-forestry/>
- First Nations Information Governance Centre. (2019). First Nations Data Sovereignty in Canada. *Statistical Journal of the IAOS*, *35*(1), 47–69.

- Fortier, J.-F., Wyatt, S., Greskiw, G., Hébert, M., Natcher, D., Smith, P., Trosper, R. and Nadeau, S. (2011). *Aboriginal and non-Aboriginal Collaboration in Forestry: An Inventory of Practices Across Canada. A State of Knowledge Report Supplement. Sustainable Forest Management Network. Edmonton. 84 pp.*
- Gardiner, L. (2021). *Generic Business Planning Guide for Indigenous-Led Small Sawmill Operations. Preliminary Research. Indigenous Development and Support Services. 35.*
- Gardiner, L. (2022). *Start-Up Guidelines and Generic Business Plan for Small Scale Sawmills in First Nation Communities. Indigenous Development and Support Services. 119.*
- Gauthier, S., Bernier, P., Kuuluvainen, T., Shvidenko, A. Z., & Schepaschenko, D. G. (2015). *Boreal Forest Health and Global Change. Science, 349(6250), 819–822.*
- Gerlak, A. K., Heikkila, T., Smolinski, S. L., Huitema, D., & Armitage, D. (2018). *Learning Our Way Out of Environmental Policy Problems: A Review of the Scholarship. Policy Sciences, 51(3), 335–371.*
- Government of Canada, S. C. (2017). *Census in Brief: The Housing Conditions of Aboriginal People in Canada. <https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016021/98-200-x2016021-eng.cfm>*
- Greer, A. (2019). *Settler Colonialism and Empire in Early America. The William and Mary Quarterly, 76(3), 383–390.*
- Guimond, L., & Desmeules, A. (2018). *Indigenous Minorities on Major Northern Worksites: Employment, Space of Encounter, Sense of Place. Geoforum, 97, 219–230.*
- Hall, D. M., & Steiner, R. (2020). *Policy Content Analysis: Qualitative Method for Analyzing Sub-National Insect Pollinator Legislation. Methods X, 7, 100787.*
- Hatcher, A., Bartlett, C., Marshall, A., & Marshall, M. (2009). *Two-Eyed Seeing in the Classroom Environment: Concepts, Approaches, and Challenges. Canadian Journal of Science, Mathematics and Technology Education, 9(3), 141–153.*
- Hirsch, K., Kafka, V., Tymstra, C., McAlpine, R., Hawkes, B., Stegehuis, H., Quintilio, S., Gauthier, S., & Peck, K. (2001). *Fire-Smart Forest Management: A Pragmatic Approach to Sustainable Forest Management in Fire-Dominated Ecosystems. The Forestry Chronicle, 77(2), 357–363.*
- Infrastructure, M. (2022) *Winter Roads in Manitoba | Manitoba Infrastructure | Province of Manitoba. Retrieved from <https://www.gov.mb.ca/mit/winter/index.html>*
- IPCC, 2007: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon,*



S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp.

IPCC, 2021: Summary for Policymakers. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press.

Johnston, M., & Hessel, H. (2012). Climate Change Adaptive Capacity of the Canadian Forest Sector. *Forest Policy and Economics*, 24, 29–34.

Lawler, J. H., & Bullock, R. C. L. (2017). A Case for Indigenous Community Forestry. *Journal of Forestry*, 115(2), 117–125.

Lawler, J. H., & Bullock, R. C. L. (2019). Indigenous Control and Benefits Through Small-Scale Forestry: A Multi-Case Analysis of Outcomes. *Canadian Journal of Forest Research*, 49(4), 404–413.

Lee, E., & Krasny, M. E. (2017). Adaptive Capacity in Community Forest Management: A Systematic Review of Studies in East Asia. *Environmental Management*, 59(1), 34–49.

Lefebvre, C. (2022, July 14). *Northern Manitoba Community Under Evacuation Order Due to Fire*. Winnipeg. <https://winnipeg.ctvnews.ca/northern-manitoba-community-under-evacuation-order-due-to-fire-1.5988201>

Lélé, S., & Norgaard, R. B. (2005). Practicing Interdisciplinarity. *Bioscience*, 55(11), 967–975.

Mason, L., White, G., Morishima, G., Alvarado, E., Andrew, L., Clark, F., Durglo, M., Durglo, J., Eneas, J., Erickson, J., Friedlander, M., Hamel, K., Hardy, C., Harwood, T., Haven, F., Isaac, E., James, L., Kenning, R., Leighton, A., Wilder, S. (2012). Listening and Learning from Traditional Knowledge and Western Science: A Dialogue on Contemporary Challenges of Forest Health and Wildfire. *Journal of Forestry*, 110(4), 187–193.

McGee, T. K. (2021). Evacuating First Nations during Wildfires in Canada. *Fire Safety Journal*, 120, 103120. <https://doi.org/10.1016/j.firesaf.2020.103120>

Mertens, D. M. (2010). Transformative Mixed Methods Research. *Qualitative Inquiry*, 16(6), 469–474.

Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult & Continuing Education*, 1997(74), 5.

Minegoziibe Anishinabe Community Update-Louisiana Pacific and Manitoba Government – Pine Creek First Nation. (2022). Retrieved from

<https://pinecreekfirstnation.com/news/minegoziibe-anishinabe-community-update-louisiana-pacific-and-manitoba-government/>

Moyson, S., Scholten, P., & Weible, C. M. (2017). Policy Learning and Policy Change: Theorizing their Relations from Different Perspectives. *Policy and Society*, 36(2), 161–177.

Nadasdy, P. (2021). *The Politics of Tek: Power and the “Integration” of Knowledge*. 19.

Natural Resources and Northern Development | Province of Manitoba. (2022) Retrieved from <https://www.gov.mb.ca/nrnd/forest/forestry/forest-mgmt-and-plan/index.html>

Nenko, A., Parkins, J. R., Reed, M. G., & Sinclair, A. J. (2019). Rethinking Effective Public Engagement in Sustainable Forest Governance. *Society & Natural Resources*, 32(12), 1383–1398.

Nicholson, K. (2000). *The Lumber Industry in Manitoba*. Economic History Theme Study, Historic Resources Branch. 90.

Nisokapwino Forestry Management Corporation (2018). First Nations and Canadian Kraft Paper Industries form historic Forestry Management Company.

Province of Manitoba | News Releases | Manitoba Government and Norway House Cree Nation Sign Memorandum of Agreement on Forestry Development. (2022). Retrieved from <https://news.gov.mb.ca/news/index.html?item=55758&posted=2022-08-02>

Province of Ontario. *Enhanced Sustainable Forest License implementation* | ontario.ca. 2023. Retrieved from <http://www.ontario.ca/page/enhanced-sustainable-forest-licence-implementation>

Pyper, E., Henry, D., Yates, E. A., Mecredy, G., Ratnasingham, S., & Walker, B. S. and J. D. (2018). Walking the Path Together: Indigenous Health Data at ICES. *Healthcare Quarterly*, 20(4).

QSR International. *Coding*. (2022). Retrieved from <https://help-nv.qsrinternational.com/12/win/v12.1.112-d3ea61/Content/coding/coding.htm>

Ravikumar A, Myers R, Kowler L and Tovar JG. (2015). Project Guide to Coding in Nvivo and Codebook. Guideline. Bogor, Indonesia: CIFOR.

Reder, E. (2021). *Manitoba PC Government Quietly Extends Industrial Clearcut Logging in Parks* | Wilderness Committee. Retrieved from <https://www.wildernesscommittee.org/news/manitoba-pc-government-quietly-extends-industrial-clearcut-logging-parks>

Ross, M. (1997). *A History of Forest Legislation in Canada 1867-1996*. 61.

- Ross M, Smith P. (2003). *Meaningful Consultation with Indigenous Peoples in Forest Management: A Focus on Canada*. Retrieved from <https://www.fao.org/3/xii/1001-c1.htm>
- Sarewitz, D. (2004). How Science Makes Environmental Controversies Worse. *Environmental Science & Policy*, 7(5), 385–403.
- Schuster, R., Germain, R. R., Bennett, J. R., Reo, N. J., & Arcese, P. (2019). Vertebrate Biodiversity on Indigenous-managed Lands in Australia, Brazil, and Canada Equals that in Protected Areas. *Environmental Science & Policy*, 101, 1–6.
- Shackleton, S., Bezerra, J. C., Cockburn, J., Reed, M. G., & Abu, R. (2021). Interviews and Surveys. In R. Biggs, A. de Vos, R. Preiser, H. Clements, K. Maciejewski, & M. Schlüter, *The Routledge Handbook of Research Methods for Social-Ecological Systems* (1st ed., pp. 107–118). Routledge.
- Smit, B., & Wandel, J. (2006). Adaptation, Adaptive Capacity and Vulnerability. *Global Environmental Change*, 16(3), 282–292.
- Sustainable Forest Management. (2022). Ontario.Ca. Retrieved from <http://www.ontario.ca/page/sustainable-forest-management>
- Tarnoczi, T. (2011). Transformative Learning and Adaptation to Climate Change in the Canadian Prairie Agro-ecosystem. *Mitigation and Adaptation Strategies for Global Change*, 16(4), 387–406.
- Teitelbaum, S., Beckley, T., & Nadeau, S. (2006). A national portrait of community forestry on public land in Canada. *The Forestry Chronicle*, 82(3), 416–428.
- Thambinathan, Vivetha & Kinsella, Elizabeth. (2021). Decolonizing Methodologies in Qualitative Research: Creating Spaces for Transformative Praxis. *International Journal of Qualitative Methods*. 20.
- Tymstra, C., Stocks, B. J., Cai, X., & Flannigan, M. D. (2020). Wildfire Management in Canada: Review, Challenges and Opportunities. *Progress in Disaster Science*, 5, 100045.
- Vulturius, G., & Gerger Swartling, Å. (2015). Overcoming Social Barriers to Learning and Engagement with Climate Change Adaptation: Experiences with Swedish forestry stakeholders. *Scandinavian Journal of Forest Research*, 30(3), 217–225.
- Wang, X., Parisien, M.-A., Taylor, S. W., Candau, J.-N., Stralberg, D., Marshall, G. A., Little, J. M., & Flannigan, M. D. (2017). Projected Changes in Daily Fire Spread Across Canada Over the Next Century. *Environmental Research Letters*, 12(2), 025005.
- Williamson, T. B., & Isaac, K. J. (2013). Adapting Sustainable Forest Management to Climate Change: An Overview of Approaches for Assessing Human Adaptive Capacity. Retrieved from

Ottawa, Canada. [https://publications.gc.ca/collections/collection\\_2014/ccfm/Fo79-11-2013-eng.pdf](https://publications.gc.ca/collections/collection_2014/ccfm/Fo79-11-2013-eng.pdf)

Williamson, T. B., Johnston, M. H., Nelson, H. W., & Edwards, J. E. (2019). Adapting to Climate Change in Canadian Forest Management: Past, Present and Future. *The Forestry Chronicle*, 95(02), 76–90.

Wyatt, S. (2008). First Nations, Forest Lands, and “Aboriginal Forestry” in Canada: From Exclusion to Comanagement and Beyond. *Canadian Journal of Forest Research*, 38(2), 171–180.

Wyatt, S., Hébert, M., Fortier, J.-F., Blanchet, É.-J., & Lewis, N. (2019). Strategic Approaches to Indigenous Engagement in Natural Resource Management: Use of Collaboration and Conflict to Expand Negotiating Space by Three Indigenous Nations in Quebec, Canada. *Canadian Journal of Forest Research*, 49(4), 375–386.

Yamatani, H., & Feit, M. (2013). Contemporary Social Policy Analysis Methods: An Incorporation of Ethical Principles and Implementation Processes. *Journal of Human Behavior in the Social Environment*, 23(7), 817–823.

Zurba, M., Diduck, A. P., & Sinclair, A. J. (2016). First Nations and Industry Collaboration for Forest Governance in Northwestern Ontario, Canada. *Forest Policy and Economics*, 69, 1–10.

Zurba, M., Sinclair, A. J., & Diduck, A. P. (2021). “Two-Row” Cross-cultural Learning for Collaborative Governance of Forestland in Northwestern Ontario, Canada. *Regional Environmental Change*, 21(2), 57.

## **Statutes and Regulations**

### ***Federal***

*Constitution Act*. 1982, being Schedule B to the *Canada Act 1982 (UK)*, 1982, c. 11.

*Department of Crown-Indigenous Relations and Northern Affairs Act*. SC 2019, c. 29, s. 337.

*Department of Indigenous Services Act*. SC 2019, c. 29, s. 336.

*First Nations Commercial and Industrial Development Act*. SC 2005, c. 53

*First Nations Land Management Act*. SC 1999, c. 24.

*Fisheries Act*. RSC 1985, c. F-14.

*Forestry Act*. RSC 1985, c. F-30.

*Indian Act*. RSC 1985, c. I-5.

Indian Timber Regulations. CRC, c. 961.

Indigenous Services Canada. (2008). *The National Guidelines for Administering the Timber Provisions of the Indian Act and the Indian Timber Regulations*.

*Migratory Birds Convention Act*. SC 1994, c. 22.

Timber Regulations. 1993, SOR/94-118.

*United Nations Declaration on the Rights of Indigenous Peoples Act*. SC 2021, c. 14.

### ***Manitoba***

*The Crown Lands Act*. CCSM 1987, c. C340.

*The Conservation Agreements Act*. CCSM 1997, c. C173.

*The Environment Act*. CCSM 1987, c. E125.

*The Forest Act*. CCSM 1987, c. F150.

*The Forest Health Protection Act*. CCSM 2007, c. F151.

*The Wildfires Act*. CCSM 1997, c. W128.

### **Reports, Guidelines and Frameworks**

#### ***Federal***

Environment and Climate Change Canada. (2016). *Pan-Canadian Framework on Clean Growth and Climate Change: Canada's Plan to Address Climate Change and Grow the Economy*.

Framework Agreement on First Nation Land Management. (1996).

National Forest Strategy Coalition. (2008). *National Forest Strategy 2003-2008: A Sustainable Forest, the Canadian Commitment*.

#### ***Manitoba***

Government of Manitoba. *Field Guide: Native Trees of Manitoba*.

Manitoba Agriculture and Resource Development. (2021). *20-Year Forest Management Plan Guideline*.

Manitoba Agriculture and Resource Development. (2020). Forest Renewal Assessment Manual.

Manitoba Agriculture and Resource Development. (2020). The Boreal Wetlands Codes of Practice.

Manitoba Conservation and Water Stewardship. (2015). Biomass Management.

Manitoba Conservation and Water Stewardship. (2008). Forest Management Guidelines for Riparian Management Areas.

Manitoba Conservation and Water Stewardship. (2014). Forest Pest Management Guidelines.

Manitoba Conservation and Water Stewardship. (2012). Forestry Road Management.

Manitoba Conservation and Water Stewardship. (2015). Manitoba's Submission Guidelines for Forest Management Operating Plans.

Manitoba Conservation and Water Stewardship. (2014). Pre-Harvest Survey Guidelines.

Manitoba Conservation and Water Stewardship. (2017). Protection of Softwood Understory.

### ***Indigenous***

Assembly of First Nations. (2021). Joint Committee on Climate Action Annual Report.

The National Aboriginal Forestry Association. (2020). *The Fifth Report on Indigenous Held Forest Tenure in Canada.*

### ***International***

United Nations (General Assembly). (2007). *Declaration on the Rights of Indigenous People.*

## APPENDIX A: Policy Scan Process

Policy Scan Steps adapted from Cox (2014)

Preparation and Search:

- 1) Policy scan objectives and scope: The intent of this scan is to uncover policy and governance documents (statutes, agreements, regulations, policies, and plans) that may either inhibit or advance Indigenous-led forestry initiatives in Manitoba. The documents could include federal, provincial, Indigenous and multi-government materials. The documents and key results arising from them will be summarized in the thesis and will also be available for policy users to easily access and review them on the University of Winnipeg's open access platform, WinnSpace.
- 2) Determine variables for analysis and their data sources:
  - a. Variables: Acts, agreements, regulations, policies.
  - b. Sources/Databases:
    - i. Government Websites:
      1. <https://web2.gov.mb.ca/laws/index.php> Manitoba Laws (Provincial, Manitoba).
      2. <https://www.manitoba.ca/forest/forestry/index.html> Natural Resources and Northern Development (Provincial, Manitoba).
      3. <https://www.nrcan.gc.ca/our-natural-resources/forests/sustainable-forest-management/canadas-forest-laws/17497> Canada's Forest Laws (Federal, NRCAN).
      4. <https://www.laws-lois.justice.gc.ca/eng/> Justice Laws Website (Federal, Government of Canada).
      5. <https://www.sac-isc.gc.ca/eng/1594827768706/1594827809481> Laws and Regulations (Federal, ISC).
    - ii. Databases:
      1. Canadian Legal Information Institute, <https://www.canlii.org/en/index.html>.
      2. Canada Public Policy, <https://www-deslibris-ca.uwinnipeg.idm.oclc.org/en-us/alternatehome.aspx>.
      3. Data Manitoba, <https://geoportal.gov.mb.ca/>.
      4. Indigenous Studies Portal, <http://iportal.usask.ca.uwinnipeg.idm.oclc.org/>
      5. Government of Canada Publications (Depository Services Program), <https://publications.gc.ca/site/eng/home.html>.
    - iii. Other Sources:
      1. Canadian Lumber Standards Accreditation Board, <https://www.clsab.ca/bylaws-and-regulations/>
- 3) Design a data tool for aggregating data found during the search: see Appendix C.
- 4) Design a search tracking table to systematically document searches and maintain validity throughout the search process: see Appendix B.
- 5) Identify search terms.

- 6) Maintain consistency between search protocol for each term and inclusion/exclusion parameters between data sources.

Review:

- 1) Review selected documents for appropriateness and accuracy. Include a peer review from experts on the matter.
- 2) Perform thematic analysis using NVivo software. See Chapter 3.



### APPENDIX B: Search Tracking Table

Headings of the search tracking table used to systematically document searches and maintain validity throughout the search process. Adapted from Cox (2014).

Websites or Database s	Search term (s) or string	Number of policies/ regulations / acts/ resources retrieved	Number excluded based on title scan	Number of perceived relevant policies/ acts/ regulations / resources	Number of duplicate policies/ acts/ regulations / resources excluded	Number of perceived relevant policies/ acts/ regulations / resources	Number of policies/ regulations / acts/ resources excluded based on full text scan	Final number of policies/ acts/ regulations / resources retrieved
---------------------------------	------------------------------------	--	---	--	--	--	--	---

**APPENDIX C: Framework Used for Aggregating and Reviewing Policy Mechanisms**

Search review steps adapted from Westwood (2020)

- 1) Name of policy mechanism:
- 2) Type (law, activity, etc.):
- 3) How could this mechanism influence Indigenous forestry prospects?
- 4) Is the impact of this mechanism direct or indirect?

**APPENDIX D: NVivo Codebook**

Thesis project codebook exported from NVivo 12.

<b>Code Name</b>	<b>Files</b>	<b>References</b>
Applications and Forms	5	5
Arguments Against Timber Harvesting	1	2
Barriers to Indigenous Forestry	3	5
Internal Politics	1	3
Collaboration Barriers	5	9
Economic Barriers	1	2
Logistical Barriers	11	25
Market Barriers	6	6
Policy Barriers	12	32
Timber Grading	4	8
Alberta Program	1	2
Biodiversity	4	5
Climate Change	7	13
Capacity Building	5	9
Adaptive Capacity	7	15
Remote Communities	4	8
Carbon Capture	1	1
Forest Pests and Pathogens	1	1
Forestry Industry	1	1
Sustainable Forest Management	3	5
Wildfire	5	7
FireSmart	3	5
Conservation	3	3
Federal	2	8
Indigenous	1	2
Manitoba	7	11
Sustainable forestry	4	5
Contact Information	0	0
Federal	2	2

<b>Code Name</b>	<b>Files</b>	<b>References</b>
Other	0	0
Provincial	0	0
Employment	5	7
Barriers	2	2
Jobs for women and youth	6	10
Opportunities	5	8
Federal Obligations	1	3
Figures and Tables	2	2
Maps	3	3
Forest Certifications	4	4
FSC	0	0
Other	1	1
SFI	0	0
Forestry Industry	2	2
Biomass	1	1
Collaboration	3	11
Contracting Work	1	1
Forest Pests	1	2
Forestry Industry Market	1	1
Insurance	1	1
Pulp and Paper	1	1
Sustainable Forestry Management Plans	5	6
Funding	3	5
Applications	2	2
Barriers	9	21
Federal (ISC and IFI)	8	10
Manitoba Government	2	2
Opportunities	14	24
Gaps	2	2
Communication Gaps	1	2
Industry Gaps	0	0

<b>Code Name</b>	<b>Files</b>	<b>References</b>
Guidelines and Resources	0	0
Federal	0	0
Provincial	14	18
Indigenous Business & Orgs	4	4
IDSS	1	1
NAFA	1	2
Indigenous Engagement	3	3
Adapting Consultation Processes	2	5
Federal	4	5
Industry	1	1
Manitoba Government	9	21
Other Provincial Examples	1	2
Proper Consultation	4	5
Indigenous Forestry	5	7
Carbon Credits	1	1
Collaborative	11	15
Community Run	4	11
Economic Growth	6	8
Examples	14	30
History	1	1
Housing	3	7
Interest in Indigenous Forestry	9	16
Next Steps	16	32
Opportunities for Indigenous Forestry	13	45
Existing Sawmills	3	4
Successful Indigenous Forestry	10	16
Norway House Agreement	1	6
Indigenous Programs or Guidelines	4	7
Interviewee Background Info	14	25
Legislation	1	1
Actions, Commitments	4	4

<b>Code Name</b>	<b>Files</b>	<b>References</b>
Building Code	7	15
Federal	15	26
Forestry	6	11
IFI	1	4
ISC	2	6
Permits	2	3
FNLMA	7	10
Indigenous Rights and Legislation	15	28
Indigenous Rights	8	17
Rights on Traditional Territories	6	8
Land Back	1	1
Land Registration	5	14
Needs revision	9	13
Reserve Land	10	23
Timber Harvesting	5	12
Treaty Entitlements	5	8
Lumber Grading	6	14
Policies	1	2
Accessibility	5	6
Climate Policy	3	5
Forestry Policy	3	4
Indigenous Policy	3	4
Policy Opportunities	8	14
Provincial	9	13
Crown Land	5	8
Enhanced Sustainable Forest Management Licenses (Ont)	1	1
FMLAs	3	4
FMPs	5	13
Forestry	7	10
Harvesting Regulations	1	1

<b>Code Name</b>	<b>Files</b>	<b>References</b>
Needs Revision	3	5
Permits	7	10
Timber Dues and Fees	1	3
Manitoba Forest Tenure	3	4
Indigenous Tenure	1	2
Timber Value	1	1
Non-Timber Forest Products	1	1
Other Provincial Examples	1	1
Policy Learning	8	16
Reconciliation	6	7
Remote Communities	3	3
Accessibility	2	2
Climate Change	2	3
Housing conditions	11	14
Examples	1	1
Ice Roads	3	4
Resource Sovereignty	6	11
Results Ideas and Examples	1	1
Terminology	6	8
Traditional Knowledge	8	16
Vulnerability	4	5

## APPENDIX E: Indigenous Data Management Framework

Framework for working with Indigenous data. Adapted from Pyper et al. (2018).

### Framework for working with Indigenous data



Adapted from the model developed with Chiefs of Ontario (Lovett, Walker and Jones 2016).



## **APPENDIX F: Interview Schedule and Consent Form**

### **Indigenous Forestry Interview Schedule: Local Expert Participants**

Thank you for taking the time to talk with me about your experiences and expertise.

I'm conducting research on Indigenous-led forestry initiatives in Manitoba, and I'm hoping to gain perspectives and opinions from various experts on relevant matters related to Indigenous forestry.

I'll be asking you open questions, so I encourage you to talk about things that you think about when I ask the questions. There are no right or wrong answers because I want to get a realistic idea of your opinions on the matter.

Before we begin, I just want to run through the information in the Consent Form [give the participant a copy]. Everything you say will be confidential and your name will never be associated with quoted comments in publications unless you want it to be. You are welcome to stop this interview process at any stage and you have the right to withdraw the information you have shared with me if you wish. You can refrain from answering any questions that you feel uncomfortable about. If you need any more information, you can ask me now, or email me later, with the contact details on this sheet.

To ensure that I capture all the details of our conversation accurately, I would like to record the interview, if that is alright? If you are uncomfortable about this, please let me know and I can take notes instead. Ok, I'll press record now then.

Before we start, I need to ask for your approval that you understand and accept the information I have just described and that you are willing to participate in this research project.

#### **Questions about you and your role:**

- 1) What is your occupation/position in the community?
  - a. PROMPT IF NEEDED: How long have you been doing this?
  - b. PROMPT IF NEEDED: Can you tell me about your background and experience?

#### **Questions about interest in Indigenous-led Forestry:**

- 2) Can you think of examples – in Manitoba or elsewhere – of successful Indigenous-led forestry?
  - a. PROMPT IF NEEDED: Do you think sustainably managing forests contributes to successful Indigenous forestry?
- 3) Are you interested in developing or assisting in the development of Indigenous-led forestry initiatives in Manitoba?
- 4) Do you think Indigenous-led forestry can help address common challenges facing First Nations communities? Can you give me some examples of how it might help?

**Questions about successful sawmills/ Indigenous business:**

- 5) What, in your opinion, can make an Indigenous business successful?
- 6) What barriers may there be in developing a sawmill and other forestry operations on First Nations land?
- 7) What do you think a successful forestry operation means?

**Questions about job security/opportunities:**

- 8) What role do you think the provincial or federal governments could play in either hindering or creating job opportunities in forestry initiatives within a First Nations community?
- 9) Do you think developing forestry initiatives in First Nations communities can provide job opportunities for community members, particularly women and youth?

**Questions about housing stocks/conditions in Manitoba First Nations:**

- 10) What, in your opinion, can be done to mitigate issues involving housing stocks and the expenses associated with building materials?
  - a. PROMPT IF NEEDED: Do you think harvesting and milling timber locally can reduce building costs and provide more homes for community members?

**Questions about community vulnerability and climate change:**

- 11) Do you think First Nations communities in Manitoba are vulnerable towards climate change?
- 12) What impacts of climate change are you seeing, or will you see in the future, in First Nations communities in Manitoba?
- 13) How do you think First Nations communities can address the current and future impacts of climate change?
- 14) Do you think harvesting and milling timber locally can help communities become more resilient to climate change?
  - a. If so, do you think sustainable forest management practices are important in helping communities become more resilient to climate change?

**Questions about policy:**

- 15) Are you aware of the First Nations Land Management Act?
  - a. If so, do you find the process easy or difficult to navigate?
- 16) Are you aware of the Indian Timber Harvesting Regulations?
  - a. If so, what is your opinion of the regulations?
- 17) Are there other policies, acts or regulations that you are aware of that may impact Indigenous forestry prospects in Manitoba either directly or indirectly?
  - a. If so, would this policy, act or regulation hinder or assist Indigenous forestry prospects?
- 18) Do you think policies, regulations and laws impacting First Nations should be made more available and approachable to First Nations community members?

**Questions about policy learning:**

- 19) What do you think the opportunities and barriers are to learn from successful examples of Indigenous-led forestry in Manitoba and elsewhere?

20) What do you think the opportunities and barriers are to adjusting policies to improve the prospects for Indigenous-led forestry in Manitoba?

**Closing Questions:**

21) So, in closing, how would you like to see forestry programs implemented in your community (or others) in the future?

**Next steps:**

Executive summary provided spring of 2023. Would you like a copy? If so, please confirm your email address:

Email address:

Thank you so much for your time today!

**Indigenous Forestry Interview Schedule:  
Government Official and Policy Expert Participants**

Thank you for taking the time to talk with me about your experiences and expertise.

I'm conducting research on Indigenous-led forestry initiatives in Manitoba, and I'm hoping to gain perspectives and opinions from various experts on relevant matters related to Indigenous forestry.

I'll be asking you open questions, so I encourage you to talk about things that you think about when I ask the questions. There are no right or wrong answers because I want to get a realistic idea of your opinions on the matter.

Before we begin, I just want to run through the information in the Consent Form [give the participant a copy]. Everything you say will be confidential and your name will never be associated with quoted comments in publications unless you want it to be. You are welcome to stop this interview process at any stage and you have the right to withdraw the information you have shared with me if you wish. You can refrain from answering any questions that you feel uncomfortable about. If you need any more information, you can ask me now, or email me later, with the contact details on this sheet.

To ensure that I capture all the details of our conversation accurately, I would like to record the interview, if that is alright? If you are uncomfortable about this, please let me know and I can take notes instead. Ok, I'll press record now then.

Before we start, I need to ask for your approval that you understand and accept the information I have just described and that you are willing to participate in this research project.

**Questions about you and your role:**

- 1) What is your occupation/position?
  - a. PROMPT IF NEEDED: How long have you been doing this?
  - b. PROMPT IF NEEDED: Can you tell me about your background and experience?

**Questions about interest in Indigenous-led Forestry:**

- 2) Can you think of examples – in Manitoba or elsewhere – of successful Indigenous-led forestry?
  - a. PROMPT IF NEEDED: Do you think sustainably managing forests contributes to successful Indigenous forestry?
- 3) Are you interested in developing or assisting in the development of Indigenous-led forestry initiatives in Manitoba?
- 4) Do you think Indigenous-led forestry can help address common challenges facing First Nations communities? Can you give me some examples of how it might help?

**Questions about successful sawmills/ Indigenous business:**

- 5) What, in your opinion, can make an Indigenous business successful?
- 6) What barriers may there be in developing a sawmill and other forestry operations on First Nations land?
- 7) What do you think a successful forestry operation means?

**Questions about job security/opportunities:**

- 8) What role do you think the provincial or federal governments could play in creating job opportunities in forestry initiatives within a First Nations community?
- 9) Do you think developing forestry initiatives in First Nations communities can provide job opportunities for community members, particularly for women and youth?

**Questions about housing stocks/conditions in Manitoba First Nations:**

- 10) What, in your opinion, can be done to mitigate issues involving housing stocks and the expenses associated with building materials?
- 11) Do you think harvesting and milling timber locally can reduce building costs and provide more homes for community members?

**Questions about community vulnerability and climate change:**

- 12) Do you think First Nations communities in Manitoba are vulnerable towards climate change?
- 13) What impacts of climate change are you seeing, or will you see in the future, in First Nations communities in Manitoba?
- 14) How do you think First Nations communities can address the current and future impacts of climate change?
- 15) Do you think harvesting and milling timber locally can help communities become more resilient to climate change?
  - a. If so, do you think sustainable forest management practices are important in helping communities become more resilient to climate change?
  - b. PROMPT IF NEEDED: In your opinion, what can Manitoba's forestry sector do to better combat climate change?

**Questions about policy:**

- 16) Are you aware of the First Nations Land Management Act?
  - a. If so, do you find the process easy or difficult to navigate?
- 17) Are you aware of the Indian Timber Harvesting Regulations?
  - a. If so, what is your opinion of the regulations?
- 18) Are there other policies, acts or regulations that you are aware of that may impact Indigenous forestry prospects in Manitoba either directly or indirectly?
  - a. If so, would this policy, act or regulation hinder or assist Indigenous forestry prospects?
- 19) Do you think policies, regulations and laws impacting First Nations should be made more available and approachable to First Nations community members?

**Questions about policy learning:**

- 20) What do you think the opportunities and barriers are to learn from successful examples of Indigenous-led forestry in Manitoba and elsewhere?
- 21) What do you think the opportunities and barriers are to adjusting policies to improve the prospects for Indigenous-led forestry or Indigenous businesses in Manitoba and elsewhere?
- 22) Why is it important lobby for policy change and reform, and what are the barriers in doing so?

**Closing Questions:**

- 23) How can these initiatives advance reconciliation?
- 24) So, in closing, how would you like to see forestry programs implemented in First Nation communities in Manitoba in the future?

**Next steps:**

Executive summary provided spring of 2023. Would you like a copy? If so, please confirm your email address:

Email address:

Thank you so much for your time today!

## **Consent Form – Indigenous-led forestry initiatives in Manitoba**

**Title of the project**

Analyzing Forest Policy to Advance Indigenous-led Forestry Initiatives and Increase Adaptive Capacity

**Principal Investigator**

Patrick Carty  
Phone: 204-880-6327  
Email: carty-p@webmail.uwinnipeg.ca

**This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please feel free to ask. Please take the time to read this carefully and to understand any accompanying information.**

### **Purpose of the research and interview**

I invite you to participate in an interview for a study on how small-scale forestry operations can combat common issues in remote First Nations communities, and the policy barriers that may either inhibit or advance these forestry initiatives. I would like to ask you about your experiences and/or expertise in the forestry industry, environmental policy, First Nations community economic development or other fields relevant to this study. I would also like to ask for your opinion on how First Nations communities can better manage their forests, build homes for the communities and create job opportunities. I would like to understand your knowledge of current policy provisions that impact Indigenous-led forestry in Manitoba, and your opinion on how these policies could be reformed. Finally, I would like to know your opinion on how climate change may be impacting First Nations communities in Manitoba in both the present and future, and how communities could be made more resilient to this change.

### **Project team and sponsors**

I am a graduate student at the University of Winnipeg and am leading this research for the purposes of my Master of Environmental and Social Change thesis project. I am partnering with Indigenous Development Support Services for this research, who are a non-profit organization aiming to assist First Nations in developing community led forestry programs. This research is funded by the Social Sciences and Humanities Research Council (SSHRC) under the auspices of the Climate Learning and Adaptation for Northern Development (C-LAND) project based out of the University of Winnipeg. Travel expenses for this project are funded by the Northern Scientific Training Program (NSTP) and the SSHRC grant.

### **Benefits to participants and society**

This research aims to better understand the policy barriers in place for developing Indigenous forestry initiatives in Manitoba, how Indigenous-led forestry initiatives can mitigate the costs of building supplies for housing projects, provide job opportunities for women and youth and assist communities in becoming more sustainable and resilient towards climate change. The hope is this research will assist future Indigenous forestry prospects in developing successful sustainable forest initiatives in Manitoba. The results will be summarized in the form of a master's thesis, and the hope is to have the results published in an academic journal. The results will be made public and I will also provide you with an executive summary of the results.

### **Interview details**

The interview will take about 40 minutes. If you agree, I will audio record the interview. If you prefer that I not do that, I will record the interview with hand-written notes.

### **Potential risks and discomforts**

Some risk is associated with this project due to ongoing COVID-19 pandemic health hazards. To mitigate these risks, a COVID-19 safety plan has been developed and all relevant COVID-19 information has been included in the consent form. If you have any concern regarding a household members or other close personal contacts are at a high risk for contracting COVID-19, please let the researcher no. Beyond COVID-19 health risks, participation in this study will not expose you to any risks beyond those you experience in your daily life.

### **COVID-19 information**

- If you feel that you are from a vulnerable group with respect to COVID-19 effects (e.g., senior, immuno-compromised), please discuss your participation with me before consenting. You are under no obligation to participate and nothing bad will happen if you change your mind about participating in the research.
- Because this research is guided by University of Winnipeg policy, the following safety protocols must be followed:
  - Take appropriate precautions (e.g. face covering / cloth mask) if taking public transportation and entering public indoor spaces.
  - Physical distancing will be maintained, at all times, and if not possible wear a face covering / cloth mask. Otherwise, we will provide you with PPE.
- We will be collecting personal contact information that we must retain to follow up with you and/or conduct contact tracing if you may have been exposed to COVID-19 in coming to the research site.
- Contact information will be kept separate from data collected through the research study to allow for de-identification of the research data (if applicable, as detailed in the protocol).
- You maintain your right to withdraw from the study at any time, including research data (if applicable). If you do withdraw, we will continue to maintain your contact information and will only give it to Occupational Health if required for contact tracing.
- Once First Nations participants have consented to this study, the research will be conducted in accordance with participating First Nations community COVID-19 protocols and guidelines. Should these community protocols change, the researcher will amend the safety plan to ensure it meets the standards of the community and to ensure the safety of all participants. Not all COVID-19 community protocols are made public, therefore, they will be obtained once participant consent has been given.

### **Participation and withdrawal**

In addition, your participation in this study is strictly voluntary. You may refuse to answer any question in the interview that you are not comfortable answering. And you may withdraw from the study at any point, although I will not be able to retract material that has already been published.

Please feel free to ask for clarification or new information throughout your participation. Your decision to consent, decline, or withdraw will not hurt your ability to access any results from this study, nor will it harm your relationship with Indigenous Development Support Services.

### **Confidentiality**

I will take all necessary measures to ensure the confidentiality of the information you provide. Unless you choose otherwise, your name, personal information, or anything else that might identify you, your family members, or anyone else, will not be included in any research documents, presentations, or publications.

In research reports and presentations, information from interviews will mostly be used in an aggregated form. However, occasionally direct interview quotations to illustrate important results may be used.

May I use quotations from your interview if the opportunity arises?

Yes

No

If I use a quotation, would you like to be identified? If not, I will use a pseudonym.

Yes

No

May I take photographs of your forests and/or sawmill for my own records? The photographs will be kept confidential.

Yes

No

### **Data security**

Interview recordings and notes will be transcribed and stored on a password-protected computer, which will be backed up to an encrypted external drive. Consent forms and interview notes will be stored in a locked cabinet in my research lab. All of these records will only be accessible to authorized members of the research team. The records will be stored for at least ten years, and once I determine they are no longer needed, they will be destroyed.

### **Rights of participants**

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities.



If you have any questions about the research, please contact me at 204-880-6327 or [carty-p@webmail.uwinnipeg.ca](mailto:carty-p@webmail.uwinnipeg.ca). If you have any concerns about the way this study is conducted, you may contact my thesis supervisor, Dr. Alan Diduck, at 204-786-9777 or [a.diduck@uwinnipeg.ca](mailto:a.diduck@uwinnipeg.ca), or the University of Winnipeg Research Ethics Officer at 204-786-9058 or [ethics@uwinnipeg.ca](mailto:ethics@uwinnipeg.ca).

A copy of this consent form has been given to you to keep for your records and reference.

Date: \_\_\_\_\_

Participant's name (please print):

\_\_\_\_\_

Participant's signature (please print):

\_\_\_\_\_

**Or**

Oral consent was sought and received:

## **APPENDIX G: Community Engagement and COVID-19 Protocol**

### **Community Engagement Plan**

#### **Principal Investigator**

Patrick Carty

Phone: 204-880-6327

Email: carty-p@webmail.uwinnipeg.ca

#### **Context:**

The following community engagement plan is for the purposes of conducting research for a master's thesis led by Patrick Carty. The title of the project is 'Analyzing Forest Policy to Advance Indigenous-led Forestry Initiatives and Increase Adaptive Capacity'. This research aims to better understand the policy barriers in place for developing Indigenous forestry initiatives in Manitoba, how Indigenous-led forestry initiatives can mitigate the costs of building supplies for housing projects, provide job opportunities for women and youth and assist communities in becoming more sustainable and resilient towards climate change. The hope is this research will assist future Indigenous forestry prospects in developing successful sustainable forest initiatives in Manitoba.

#### **Engagement Framework:**

The interviews for the purposes of this research will be conducted with the following individuals, businesses and organizations:

Federal and provincial organizations such as: Indigenous Forestry Initiatives (IFI), Indigenous Services Canada (ISC), Manitoba's Natural Resources and Northern Development Forestry Branch, Parks Manitoba and the Ontario Ministry of Natural Resources and Forestry.

Relevant academics such as the Wood Science and Forest Products Director at Lakehead University.

Indigenous experts such as: Members of the Assembly of First Nations Lands and Claims Staff, the USKE Land Management Organizations, Band Council Members and community sawmill or forestry operations experts.

The results will be summarized in the form of a master's thesis, and the hope is to have the results published in an academic journal. The results will be made public and I will also provide participants with an executive summary of the results. The framework for data management will follow the framework established in the 'Indigenous Data Management: Indigenous Data Sovereignty in Action' webinar series, which I have received a certificate of completion in, and adhere to each individual First Nations community guidelines. This framework includes steps to ensure access to Indigenous data is properly managed, Indigenous data is properly stored and

shared, Indigenous data is properly organized and includes further steps to Indigenize and decolonize data management.

### **Rationale:**

Three First Nation communities in Manitoba have been chosen to potentially visit and conduct interviews for the purposes of this thesis project. These communities include:

Swan Lake First Nation  
 Cross Lake First Nation  
 Norway House Cree Nation

Communities chosen for this study have expressed interest in regaining sovereignty over their forest resources by implementing small-scale forestry operations on their respective lands. One way for First Nations communities in Canada to regain sovereignty over their own resources is by opting into First Nations Land Management Act. The First Nations Land Management Act allows communities to opt out of 40 sections of the Indian Act that relate to land management, which enables them to produce their own environmental, land use and natural resource related laws. Within this framework exists the Lands Advisory Board and the First Nations Land Management Resource Centre which are organizations available to assist First Nations in developing and enacting their own laws. Once a community has joined, funding towards developing land codes, facilitating the transition from developmental phases to operational phases and ongoing operational land management funding becomes available. In respect to the First Nations Land Management Act and the interest these communities have shown in implementing forestry initiatives, the rationale behind choosing these communities is as follows:

- 1) These three communities have expressed similar interest in either developing or operating small-scale Indigenous-led forestry initiatives on their respective lands.
- 2) These communities fall under different developmental, operational or preliminary stages within the First Nations Land Management Act. This can provide different perspectives from communities with similar end goals.
- 3) The chosen communities have a prior relationship with Indigenous Development Support Services (IDSS), the non-profit I am partnering with for my research. IDSS has collaborated with saw-mill operators and other forestry experts in these communities and in doing so has learned that these folks have an interest in my research topic.
- 4) The representatives of these communities are experts/knowledge users in their own right in respect to managing their lands, forestry/sawmill operations and/or community economic development. Their perspectives would provide great value to the outcomes of this study.

### **Recruitment:**

Representatives of the Swan River First Nation, Cross Lake First Nation and Norway House Cree Nation have a prior relationship with Indigenous Development Support Services (IDSS) (who has taken an advisory and intermediary role for my research) and have shown interest in participating in this study. IDSS has an existing relationship with these communities and has provided guidance on the on purpose, objectives, methods and community engagement portions

of this research. IDSS staff member, Laurel Gardiner, who is on my research committee, has introduced me to some of the interview participants and they have indicated a willingness to participate. These participants were chosen based on the rational criteria highlighted above. I will ask the participants, as well as Chief and Council, how to share research results with them and with others in their communities in a way that may positively impact their communities in respect to Indigenous-led forestry. The participants involvement in this study, along with sharing of the results will adhere to each communities' respective guidelines. Throughout this research, Indigenous autonomy, culture and values will be treated with the utmost respect.

### **Reimbursement and incentives:**

An honorarium for Indigenous participants in this study will be provided in the form of \$40 cash to show support for their valuable knowledge and contribution. Thank-you letters will also be sent to participants after interviews are conducted. I do not plan on interviewing Elders or Knowledge Keepers for the purposes of this study.

### **COVID-19 Safety Plan**

This research will be conducted in adherence with the University of Winnipeg's COVID-19 protocols, as well as participating First Nations community protocols. Participants will be made aware of their risk for contracting COVID-19 during face to face interactions, and through the consent form, would agree to participate freely, knowing their potential level of risk. A safety plan to minimize these risks, outlined below, will be followed by the researcher. This safety plan will be adapted to reflect each individual community COVID-19 protocols. Participating First Nations are aware of the potential health risks associated with participating in this research and has provided approval for this research to take place, so long as it continues to adhere to the community's COVID-19 protocols at all times.

The following checklist outlines the procedures put in place by the principal investigator to minimize the potential of the participants and the researcher from contracting COVID-19:

- Face to face interactions are to be conducted in well ventilated or outdoor spaces.
- The researcher will be fully vaccinated.
- Social distancing and masking will be used in indoor spaces.
- Face to face interactions are to be rescheduled or held virtually if the researcher or participants feel unwell or are showing any symptoms of COVID-19 or have tested positive for COVID-19 within the last ten days.
- Once First Nations participants have consented to this study, the research will be conducted in accordance with participating First Nations community COVID-19

protocols and guidelines.

Should these community protocols change, the researcher will amend the safety plan to ensure it meets the standards of the community, to ensure the safety of all participants. Not all COVID-19 community protocols are made public, therefore, they will be obtained once participant consent has been given.

For any questions regarding the safety plan, do not hesitate to contact me:

**Principal Investigator**

Patrick Carty

Phone: 204-880-6327

Email: [carty-p@webmail.uwinnipeg.ca](mailto:carty-p@webmail.uwinnipeg.ca)