

Running head: LAND-BASED FOOD INITIATIVES IN TWO RURAL AND REMOTE  
INDIGENOUS COMMUNITIES

Land-Based Food Initiatives in Two Rural and Remote Indigenous Communities

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THESIS

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### **Abstract**

The purpose of this thesis is to describe the harvesting and dietary practices of two rural and remote Indigenous communities. The ethnographic methods of participant observations and semi-structured interviews availed an abundance of rich and detailed data that allowed for a clear understanding of the barriers these two communities face when accessing food. This is an article-based thesis containing three parts. Part one is composed of a literature review that describes the barriers that have contributed to food insecurity problems in Indigenous communities. It finishes with a chapter dedicated to why the postcolonial perspective was chosen to best understand the historical forces that caused food insecurity in Indigenous communities and justify my position as a non-Indigenous researcher in the field of Indigenous health. The second part of the thesis is made up of two articles. Article one will describe the current situation of food access challenges and responses in Canada, more specifically in two rural and remote First Nations communities. The article illustrates how both First Nations are experiencing challenges obtaining healthy food from the market and from the land. The article concludes by pointing out how these initiatives are building more than just food capacity and why they deserve greater external support. The second article is focused solely in the community of Wapekeka, and is entitled *The Cost of Local Food Procurement in One Northern Rural and Remote Indigenous Community*. The purpose of the article is to provide a specific example of building local food capacity as strategy to address food insecurity. It documents the costs associated with traditional food procurement and compares these costs against the price of food available in the store. The final component of the thesis is the overall conclusion, highlighting the belief that the findings presented in this thesis will promote and emphasize the importance of land-based food initiatives as a way to foster positive health outcomes for all Indigenous peoples.

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**PART ONE**

## Introduction

Many Indigenous communities in Canada live well below the poverty line and live in places that are food insecure (Skinner, Hanning, & Tsuji, 2006). Health Canada (2007) stated that over 37% of Indigenous households in Canada are reported to be food insecure. The Food and Agriculture Organization of the United Nations (2007) describe food security as a state to which “all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (par.1). Several factors contribute to food insecurity among Indigenous communities, many of which are tied to the deleterious generational effects of colonialism. Chilisa (2012) wrote that colonialism destroyed traditional knowledge and created a culture of a *captive mind* in Indigenous communities. A *captive mind* refers to the “process of stripping the formerly colonized and historically marginalized groups of their ancestral culture and replacing it with Euro-Western culture” (Chilisa, 2012, p.9-10). The processes of colonization have stripped Indigenous peoples of their ability to access local and healthy foods, which led to a growing dependence on lower quality store bought foods. The total control of Indigenous people by the settler<sup>1</sup> Canadian state has led to a series of socioeconomic health problems (Damman, Eide, & Kuhnlein, 2008). Food security is just one of the many causes that has led to disproportionately high prevalence of obesity and obesity related diseases amongst Indigenous peoples in Canada. In response to the issues of food insecurity, Indigenous communities throughout Canada are

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<sup>1</sup> The word “settler” is employed for two reasons; the first is because it represents a specific set of “ethics, motivations, fears and desires”(Barker, 2009, 326). Second, many Indigenous and Indigenist scholars make use of the word (Sullivan, 2015). The use of the term does not imply moral or ethical judgment; it reflects a reality of the distinct differences in the modern-day lives of Indigenous peoples and late-comers (Barker, 2009, 329).



trying to rebuild their local food systems. In this thesis I will explore two rural and remote Indigenous communities and their efforts to re-introduce land-based food procurement and introduce new local food procurement through individual and family gardens as a means of improving local food access and food quality. Through the use of ethnographic research methods, I will document current challenges that members of the Gitxaala and Wapekeka First Nations<sup>2</sup> experience when getting regular access to nutritious foods and how their local food procurement programming are responding to these challenges.

At the forum for Food Sovereignty in Mali, the Declaration Nyéléni was adopted in 2007 by more than of 80 countries which says in part: “Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (Thompson et al., 2011). Furthermore, previous research (Patel, 2009; Wittman, 2009) has shown that possessing food sovereignty goes hand in hand with ensuring food security, thus a step towards one is step towards both for Indigenous peoples. In both Wapekeka and Gitxaala, their initiatives to procure local foods, were designed to increase their communities food security thus also taking steps towards food sovereignty.

Gitxaala and Wapekeka are rural and remote communities that cannot be accessed by road. A diet once totally composed of traditional foods has now been drastically reduced as a result of western land encroachment and gradual depletion of wild food resources. For the purpose of this paper, traditional food is defined as food obtained from the communities surrounding territory. This term does not only refer to food itself, but also to the customs around

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<sup>2</sup> First Nations are one of the Indigenous groupings that currently reside in Canada. It will be used for more accuracy in writing and to recognize their claims to self-determination.

harvesting, food preparation, sharing and eating the food. Community's members use this term and thus so will this thesis. Other terms such as wild foods, or seafood will also be used depending on who is the speaker. The efforts to procure food through agriculture are challenging in both communities. The Gitxaala community is on an island and has limited topsoil and barging topsoil from the mainland is expensive. Gardening in Wapekeka has been found to be difficult because their location experiences longer durations of cold temperatures, which makes for shorter growing seasons. Moreover, both communities' lack formal training in agricultural practices and community gardeners are learning through trial and error. As a result, both communities struggle to get regular access to affordable and nutritious food sources and face high levels of food insecurity. Research indicates that making healthy food choices is difficult even in the most affluent urban regions of Canada/North America, but healthy food 'choices' in regions with limited access to affordable nutritious foods is even more challenging (Popkin, Adair, & Ng, 2012; Popkin, Lu, & Zhai, 2002). In addition, nutrition guidelines are based on western notions of dietary practices that are not historically consistent with Indigenous food customs or consumption patterns. Efforts to improve food access and healthier diets must be aligned with local cultural practices of Gitxaala and Wapekeka. Within the context of this thesis, a postcolonial theoretical lens will allow me to consider how a community might seek empowerment through their own visions of food security and how locally devised strategies contribute to the community becoming food secure. As a community begins to determine through their own language and culture how to define food security, they can participate in the process of what is referred to as decolonization (2001). This research project is a critical-ethnography grounded in participatory-based research practices.

**Positionality**

As a non-indigenous researcher, a few questions may arise as to how I might have any place in this field of research and why I can address these issues. There is a long record of universities and research projects perpetuating harm. These projects have in part contributed to the remaining legacies of colonialism that continue to preserve the oppression and marginalization of Indigenous peoples. Part of the problem with research in an Indigenous context is how the research was conducted and for what purpose. It is my understanding that ethnographies cannot be done in a positivist manner no matter how objective the researcher believes they are; this belief is untrue. Therefore, from the beginning I would like to acknowledge that it is impossible for me to be entirely objective even though I rigorously practiced the do's and don'ts of the ethnographic research process (Aveling, 2013). Aware of my biases, I used critical reflection in terms of my presence; with this noted it does not change the fact that how I see the world will affect how I interpret events. Personal experiences and expressions are not typically composed in an academic paper; however, I want to conduct this thesis in a "good way" and inspired by Indigenous methodologies I will take time to introduce and place myself amongst the research.

My interest in the field of Indigenous health is due to the main tenants of my personal background that are driven by healthy lifestyle choices and social justice activism. As an athlete with a conscience, I sought ways to use my knowledge and experience to increase prosperity in others' lives. My first experience with rural and remote communities was in the Cree territory of James Bay Quebec where I was hired as a football coach thanks to my varsity football experience. I spent three consecutive summers working to create and maintain a football league for the youth in the First Nations of Chisasibi and Mistissini. During this time I enrolled in the

Aboriginal studies program at the University of Ottawa and joined the Student Association (ICSSA). I was part of an organizing committee dedicated to increasing the quality of the university experience for Indigenous students on campus and increasing Indigenous awareness into a settler space. During the *Idle No More* movement, we held a peaceful action in the main university building of Tabaret Hall with the help of the Indigenous Students Association (ISA). A “round dance” was held where Indigenous and non-Indigenous activists encircled all three levels of the Rotunda bringing forward five demands to the university Administration (Sullivan 2015). The connections that were made through ICSSA are what led me to join the Indigenous Health Research Group at the University of Ottawa (IHRG). Their main focus has been to work with Indigenous communities<sup>3</sup> to increase health outcomes based on local food initiatives that highlight intergenerational knowledge transmission. It was through this partnership that I developed the relationships that allowed me to conduct this Master’s research.

Although this research brings much personal and academic gain, it possesses firm roots that are based on principles of decolonization. Decolonization is based in the land, involves cultural revitalization, and includes settler participation (Sullivan, 2015). To my surprise, the majority of community members from both Gitxaala and Wapekeka did not attribute their food access challenges to colonialism. While some participants expressed and understood food insecurity as a result of state and church interventions (colonialism), they did not describe their attempts at increasing food access as decolonization methods. In Gitxaala and Wapekeka, the answers are more practical. These communities have identified multiple problems in regards to

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<sup>3</sup> For this point forward the term Indigenous peoples unless otherwise specified refers to Indigenous people residing in Canada (First Nations, Métis, Inuit). Choosing to not define communities and Indigenous Canadians was made because not all Indigenous peoples or Nations identify as Canadian.

food access and have understood that there are various negative health outcomes that come from not being able to access nutritious and affordable food. Their responses to these challenges are expressed as initiatives to increase land-based food access. A postcolonial theoretical lens will thus allow these steps to be understood as a part of the process of decolonization.

### **Objectives and Format**

The purpose of this paper is to describe the harvesting and dietary practices of the Gitxaala and Wapekeka First Nations. The ethnographic methods of participant observations and semi-structured interviews availed an abundance of rich and detailed data that allowed for a clear understanding of the barriers these two Indigenous communities face when accessing food. This is an article-based thesis containing three parts. Part one is composed of a literature review that describes the barriers that have contributed to food insecurity problems in Indigenous communities. What follows will be a description of the concepts of food security, food sovereignty, and decolonization. After these concepts are understood the research project methodology will be described. This chapter will provide justification why the ethnographic methods of participant observation and semi-structured interviews were best suited for this project. It then describes the use of the methods in a section titled project context and provides a description of how data was analyzed and participants were recruited. Part one finishes with a chapter dedicated to defining the postcolonial theoretical perspective and describing how and why it was employed during this research process. The postcolonial perspective was chosen to best understand the historical forces that caused food insecurity in Indigenous communities and justify my position as a non-Indigenous researcher in the field of Indigenous health.

The second part of the thesis is made up of two articles. Article one will describe the current situation of food access challenges and responses in Canada, more specifically in two

rural and remote First Nations communities. It starts with a description of what Samson and Pretty (2006) describe as the nutrition transition and how Indigenous food systems have gone from autonomous land based production to one that is dependent on mass-produced market foods. The article illustrates how both First Nations are experiencing challenges obtaining healthy food from the market and from the land. The article describes what is involved in acquiring food in both communities, and the responses each community is taking to increase food access. The article concludes by pointing out how these initiatives are building more than just food capacity and why they deserve greater external support.

The second article is focused solely in the community of Wapekeka, and is entitled *The Cost of Local Food Procurement in One Northern Rural and Remote Indigenous Community*. The purpose of the article is to provide a specific example of building local food capacity as strategy to address food insecurity. It documents the costs associated with traditional food procurement and compares these costs against the price of food available in the store. The paper provides a description and history of the community, barriers that people face when accessing food, and the results of what traditional food costs for a local hunter. It concludes by explaining why this type of food costing research is critical to gain a more comprehensive understanding of land based food procurement in the region, pointing to the need for more government support such as what is taking place in Northern Manitoba and Quebec. It is my hope that these articles contribute to the gaps in understanding about the challenges that Indigenous communities face in regards to food access. It is important to look at different regional responses to food access challenges as a way to better address them.

The final component of the thesis is the overall conclusion, followed by an Appendix, which contains the semi-structured interview guide that was used in the study. It is my belief that

the findings presented in this thesis will promote and highlight the importance of land-based food initiatives as a way to foster positive health outcomes for all Indigenous peoples.

## Literature Review

In this chapter I will first look at factors that have contributed to food insecurity, such as physical and fiscal barriers to obtaining healthy foods. I will then describe the differences between the concepts of food security and food sovereignty, followed by a description of decolonization. Once these concepts are defined I will outline critical periods of colonialism in Canada and how it caused food insecurity in present day. Finally this chapter will provide historical and cultural context about the Gitxaala and Wapekeka Nations.

### Food Security

Spiegelaar and Tsuji (2013) define food security as “access by all people at all times to enough food for an active, healthy life including availability of nutritionally adequate and safe food that can be acquired in socially acceptable ways” (p. 2). Conversely, food *in*security is the lack of ability to access adequate, nutritious, quality food through standard food channels or the uncertainty that one will be able to do so (Davis & Tarasuk, 1994). The term includes not only the current situation, but also potential vulnerabilities of the future (David & Tarasuk, 1994). Paci, Dickson, Nickels, Chan, & Furgal, (2004) define food security in a northern Canadian Indigenous context as constant and predictable access to food, developed from the physical environment and through Indigenous cultural practices. The concept of food security is important because it encompasses not only the physical but also the social and psychological aspects of food procurement and consumption. If a community is food insecure it will be classified as a place with low nutritional status (Kusumayati & Gross, 1998), which is most often linked to poverty. In northern remote Indigenous communities (NRI) poverty rates are high and nutritional status is low (Skinner et al., 2006).

The remoteness of Indigenous communities also plays a significant role in food security.



For instance, Kusumayati & Gross (1998) show that the farther away communities are from urban centers and district capitals, the farther away the communities are from resources and public services resulting in a low nutritional status. While remote Indigenous communities have permanent stores, they have limited nutritious food items. These stores mark healthy produce and other foods of high nutritional value at a very high price point. Fruits and vegetables are among the least purchased food, and when they are purchased, they are canned, frozen, or found in the form of surgery/sweet beverages (Spiegelaar & Tsuji, 2013). Conversely, foods with low nutritional value and high calorie intake cost the least. This leads to the over-consumption of such high calorie foods that has led to an increase in obesity and other diseases related to poor nutritional health such as Type 2 Diabetes (Bruce, 2000) and cardiovascular disease (Anand et al., 2001). These inequalities in food prices are well known in Canada and attempts have been made to subsidize the costs. Programs such as Nutrition North subsidize food costs for eligible communities, but as Spiegelaar and Tsuji (2013) explained, the “subsidy goes to the retailer supplying the goods in the Northern Communities rather the person or organization shipping the goods” (p. 2). Therefore, the costs of shipping are still very high and on the rise due to the increasing cost of fossil fuels and oil (Spiegelaar & Tsuji, 2013). The cost of nutritious food is a large contributing factor to the food security problems in NRIs as people are unable to afford the limited nutritious foods available in the stores.

Furthermore research has shown that the presence of supermarkets in a neighborhood decrease the likeliness that people become obese (Morland, Diez-Roux & Wing, 2002). NRIs do not have supermarkets in their neighbourhoods and are located in what has been defined by scholars as a food desert. Regions such as the subarctic Canada are considered a food desert that has been independently linked to multiple health diseases (Morland et al., 2002; Cummins &

Macintyre, 2006). Practical problems that coincide with food deserts are inadequate assortment of perishable foods, high food prices, ever-increasing transport costs, uncertainty of travel with winter roads not freezing over, elevated poverty rates and the decline in use of traditional foods have all led to high food insecurity rates in Canada's Northern First Nations (Thompson et al., 2011).

### **Food Sovereignty**

World Trade Organization's Agreement of Agriculture has recently critiqued the concept of food security and they have begun to use the concept of food sovereignty as a different way to address food access problems (Gonzalez, 2002; Patel, 2009). La Via Campesina, a global peasant movement advanced this notion of food sovereignty, defining it as "the right of each nation to maintain and develop its own capacity to produce its basic foods, respecting cultural and productive diversity" (Desmarais, 2007, p. 34). The "right of people to define their agricultural and food policy" was added to the definition (Desmarais, 2007, p. 34) after the turn of the century. Furthermore in Mali in 2007 at the forum for Food Sovereignty the Declaration Nyéléni was adopted and states that in part: "Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems" (Thompson et al., 2011).

Ellis, (2000) highlighted that food sovereignty means that people need to eat and also make a living sustainably, and it is determined by a households ability to use and access capital assets with mediation from institutions and social relations. Moreover, previous research (Patel, 2009; Wittman, 2009) asserts that food sovereignty represents authentic food security thus for Indigenous peoples steps toward one is steps towards both. However, it is important to

understand the distinction between the two. Initiatives to address food security tend to focus on improving food quantity and quality but rarely take into account the types of food brought in and from where the food is sourced (Myers, Powell, & Duhaime, 2004). On the other hand, food sovereignty projects work with communities in building local food capacity. Food sovereignty initiatives focus on local ownership of food systems and work with communities to develop a sustainable plan of action that is independent from outside factors, such as political influence (Patel, 2009). These efforts strive to make communities more food secure; however, food security projects are not necessarily striving for food sovereignty.

### **Decolonization**

Dene scholar Glen Coulthard (2014) wrote that, settler colonialism in Canada is maintained through capitalism, racial hierarchies and state power to dispose Indigenous peoples of their lands and erode their authority to self-determine. Mutua & Swadener (2004) described decolonization as a large spectrum that encompasses, guidelines, methods with distinct concerns, motivations and models that drive this type of work. At the most rudimentary understanding decolonization is about valuing, reclaiming Indigenous voices and epistemologies with the goal of psychologically, culturally, institutionally, and territorially ‘un-doing’ colonial oppression (Alfred 2009; Mutua & Swadener 2004; Smith 2001; Sullivan 2015). Scholars have described decolonization as way to destabilize current colonial legitimacy and transform colonial structures and institutions into systems that respect Indigenous sovereignty over territory and nationhood (Regan 2010; Wilson & Yellow Bird 2005). Decolonization involves cultural revitalization Indigenous peoples need to rebuild their culturally inherent practices of governance, education, healthcare, and economy (Hart, 2010). This cultural revitalization and continuity are known to be protective factors against suicide and other mental illness (Chandler & Lalonde, 2008). Others

call for a return to the traditional in order to decolonize (Alfred 2009; Wilson, 2005). They believe answers lie within traditions, language and culture. Paulette Regan (2010) encourages settlers to be responsible for decolonization, to reach reconciliation she calls for settlers to ‘ally’ themselves with Indigenous peoples to help “re-story” the dominant western understanding of history. Finally, some see Academia as the form of legitimating decolonization and the establishment of Indigenous worldviews (Kovach 2005; 2009; & Smith 1999).

It is clear there are variable conceptions of decolonization by scholars; however, there are three themes that link the ideas. It based in the land, involves cultural revitalization, and includes settler participation (Sullivan 2015). Sullivan (2015) wrote that decolonization includes settler participation for two main reasons. First, settlers are embedded in colonialism and benefit from this power relation in varying degrees. Therefore to properly challenge and disassemble the structures of colonialism settlers must participate in this process. Second, logistically to create meaningful change Indigenous people have to create alliances with settler populations because the magnitude of change that is needed cannot happen with out settler allies, Indigenous populations are just too small to address the challenges alone.

### **Legacy of Colonialism**

Indigenous people have suffered from dehumanizing, oppressive and violent experiences due to Canada’s colonial tactics (Churhill, 2004). Colonialism is defined by Czyzewski (2011) as “the control or governing influence of a nation over a dependent country, territory or people” (p. 1). Originally, colonialism was the act of European and other empires in controlling their own colonies on foreign soil; once these colonies became recognized states of their own with authority over their dominion, colonialism changed (Wolfe, 2006). The next step to colonialism is what Wolfe (2006) defined as “settler colonialism”. Settler colonialism is a structure of overt

and covert tactics of a settled state attempting to eliminate Indigenous populations from a territory (Wolfe, 2006). These settler colonial practices are aimed at eliminating Indigenous claims to land that supersede the settler state (Morgensen, 2011). To clarify, to eliminate Indigenous people is not limited to committing physical genocide, but attempting to change the legal definition of what it means to be Indigenous and to assimilate Indigenous people into the settler state (Churchill, 2004). Some of the main tools of assimilation in Canada throughout history have been the Indian act, reserve settlement, and imposed education from the church and state (Milloy, 1999).

The Indian Act originates from *the Royal Proclamation of 1763* where Britain established its hegemonic position in northern North America by proclaiming that only the British Crown could purchase land through treaties signed with Indigenous peoples. During the next 50 years the Crown attempted to maintain a close relationship with Canada's First Peoples, primarily for trading purposes and for military alliances. After the war of 1812 and the settlement of Upper and Lower Canada (Surtees, 1966) there was less need for First Nations alliances, making them more of a 'problem' for the Crown than a partner. Thus the Crown implemented the *Gradual Civilization Act* of 1857 (Flannigan, Dressay, & Alcantra (2010), which was an attempt to strip Indigenous rights guaranteed by *The Royal Proclamation of 1763*. The act stated that Indigenous people could voluntarily give up their Indian status through the process of enfranchisement, which is change in legal definition from Indian to British Subject. After confederation in 1867, Indian policy of Upper Canada became nationally implemented and led to the creation of the *Gradual Enfranchisement Act of 1869*. This act imposed more criteria on the legal definition of what it meant to be an Indian and ways an individual could lose Indian status such as marrying a non-Indigenous man, earning a degree, moving off reserve, etc. While these acts were all

voluntary, there is only record of one person that volunteered for enfranchisement between 1857 and the creation of the Indian Act (Flannigan, Dressay, & Alcantra 2010).

It was not until 1868 that Canada implemented the Indian Act. The Act introduced a federal policy that authorized intense government surveillance and control over the lives of Indigenous people in Canada (Carter, 1999). The Act gave the Crown authority over the land and its inhabitants, deeming Indigenous people wards of the Crown/State. The Act also gave government greater access to lands and the authority to exploit economic resources (Carter, 1999). The Act forced assimilation, prohibited participation in cultural traditions, and deemed the population inferior to ensure control to the self-declared ‘civilized’ westerners (Carter, 1999). At the very core of the Indian Act was the idea that “Indian” people needed to be saved from their ‘savage’ existence, and in order for this to happen they needed to become part of mainstream society (Francis, 1992). Under this assimilatory framework, life for Indigenous people’s radically changed. They were forced to discontinue their seminomadic lifestyles preventing them from following animal food/material sources, while also preventing Indigenous peoples from making commercial profit from hunting or fishing. With the creation of permanent settlements and restricted hunting access, Indigenous lifestyles became more sedentary and traditional food procurement declined. The inability to commercially profit from hunting and fishing limited the way Indigenous people could advance economically and helped create the over representation of Indigenous people in poverty.

Prior to contact with European colonizers Indigenous peoples had food systems that were dependent on local ecosystems and had a vast knowledge around harvesting techniques, including as Morrison showed (2011) “hunting, fishing, gathering and cultivating a vast number of plants and animals in the fields, forests, and waterways” (p.97). As well these systems could

also include agriculture production such as the Mohawks or Hurons that cultivated corn (Delabarre, & Wilder, 1920). In the beginning of colonial and Indigenous relationships these techniques were coveted by Europeans, the Indigenous peoples understood how to harvest from the land in a variety of regional ecosystems that had changing migration patterns and climates (Robidoux & Mason, Forthcoming). These techniques which were once welcomed by European settlers were now considered to be backwards and not as evolved as the agriculture techniques developed across the ocean (Kehoe et al., 1981) With the formation of British and French colonial governments and the Canadian State Indigenous food systems began to be systematically removed through economics, policy formation and the attempted mortification of Indigenous cultures (Mason 2014; Robidoux & Mason, Forthcoming; Snow, 2005).

The transformations of food systems that have been imposed on the Indigenous nations in Canada are part of a nutrition transition what Samson and Pretty (2006) described as a sudden transfer from consumption of foods from the land to processed store bought foods. Indigenous food systems have shifted since colonialism from wild foods from the land to foods that have been processed and are found at stores (Damman, Eide, & Kuhnlein, 2008; Popkin, et al., 2002; 2012). Indigenous people were bombarded with colonial practices aimed at eliminating their 'Indigenusness'. One of these tactics was the Euro-Canadian agrarian settlement of food systems in First Nations (Spiegelhaar & Tsuji 2013). For example, in Fort Albany, Ontario missionaries introduced agriculture in the area and set up western-based farms with cows, horses, pigs, and chickens (Spiegelhaar & Tsuji, 2013r). They also introduced crop production, primarily potatoes, turnips, beets, and carrots. Though this may seem beneficial within the context of food scarcity, the problem lay in the manner in which these initiatives were introduced. Western agricultural practices were imposed *on* Indigenous people instead of locating and developing

solutions *with* Indigenous people. In British Columbia, Indigenous people did not receive any aid in adjusting to new economic conditions. In fact they were prevented from acquiring the necessary skills to thrive in a sedentary environment (Cunningham, 1995). For example, if they wanted to take up farming they were forced to settle on small plots of land instead of commercial sized lots, and had to ask permission to buy and sell their food. In addition they were restricted to using hand tools while Euro-Canadian settlers used mechanized equipment (Cunningham 1995).

For the North West region of Ontario trade amongst First Nations people and the Northwest Company and Hudson Bay Company was very lucrative for all sides in the late 17<sup>th</sup> Century until the early 19<sup>th</sup> century (Bishop 1970). In the early 1800's with population influx and overconsumption of wild game, big game food shortages commenced (Pal, Haman, & Robidoux, 2013). Animals like moose and caribou were almost completely eradicated (Bishop, 1970). These shortage's lead First Nations people to become more reliant on small game for not only trade but also food, which broke up their traditional large family groups and lead them to live on small individual tracts of land (Bishop 1984; Morantz 1986; Sieciechowicz 1986). This disruption of food and material resources led to increasingly harsh living conditions and attributed to an increase of reliance on trading posts and western goods such clothing shelter and food (Pal et al. 2013). Alternatives modes of production began to replace pure subsistence activities (Ray 1998). This way of life continued into the beginning of the 20<sup>th</sup> century, leading the First Nations people of Wapekeka entering into Treaty 9 in 1906 (Long, 2010).

First Nations groups entered into Treaty because government representatives declared that the ceding land for provisions would alleviate periods and hunger and deprivation communities were facing. First Nations signed the treaty, with the understanding that in return a permanent reserve settlement with community amenities, infrastructure and financial aid would be created.



In 1932, permanent settlements and stores were built, this led to immediate access to supplies and food, rather than having to travel hundreds of kilometres to access the Hudson Bay post. The formation of the store had immense impacts on local ways of life, especially traditional harvesting practices. People now lived in permanent structures. Hunting and trapping did take place, but within an emerging modern socio-economic culture that has given rise to the current community existence (Pat et al. 2013). The settler colonial tactics of elimination and assimilation attempted to ‘civilize’ Indigenous people and create a western way of life.

While ways to cultivate the land and run farms were being resisted by many Indigenous people, policies were being implemented in order to destroy traditional food procurement practices (Milloy, 1999). Indigenous artifacts and behaviours that were considered traditional, such as living a nomadic lifestyle based on migrations patterns of animals they used for resources, were destroyed and made illegal. Spiegelaar and Tsuji (2013) stated that Indigenous people “were told their traditions followed the work of the devil” (p. 7). In the past, these traditions were integral to an Indigenous communities’ health. The Euro-Canadian colonial processes are what led to the lack of knowledge First Nation communities have about their traditional practices (Milloy, 1999).

The changes that were imposed on Indigenous populations in Canada contributed to the nutrition transition (Samson & Pretty, 2006,). This nutrition transition and disruption of traditional food systems have had tremendous impact on Indigenous peoples. These transitions left people without food and material resources which in turn led to dependency on western technologies and goods (Damman, Eide, & Kuhnlein, 2008; Popkin, et al., 2002; 2012;). It has also led to the stigmatizing of local food practices for generations of Indigenous people. The introduction of modern ‘civilized’ ways of eating and the demonization of procuring and

consuming foods from the land has resulted in the loss of traditional foodways in many communities. It has also led to negative effects on individual and collective self-esteem, health, and wellbeing (Kirmayer, Simpson, & Cargo, 2010). There has been a resurgence of land-based food practices throughout many indigenous communities, but for a variety of environmental and socio-economic factors, these practices make up only a small part of people's diets. Waldram, Herring, and Young (2006) found only ten percent of Indigenous people within Canada obtain their meat and fish through hunting and fishing.

The health implications of the nutrition transition have been well documented (Anand et al., 2001; Accurso, 2008; Census, 2001; Damman, Eide, & Kuhnlein, 2008; Dewailly, et al., 2001; Dyck, Osgood, Lin, Gao, & Stang, 2010; Fox, Harris, & Brough, 1994; Green, Blanchard, Young, & Griffith, 2003; Popkin et al., 2002; 2012). Popkin, Lu, and Zhai (2002) found that the sudden reliance on low quality market foods, high in sugar and starch have led to an increased burden of diet related diseases, in particular Type II Diabetes. This is supported by the research conducted by Imbeault et al. (2011) focusing on diet related disease in two northern and remote Indigenous communities which revealed that the prevalence of obesity and Type II Diabetes in this region was amongst the highest in the world.

### **Gitxaala/Wapekeka Profiles**

The Gitxaala First Nation is one of the first people in North America, dating back to almost 10000 years (Menzies, 2010). Their traditional territory, Laxyuup Gitxaala, covers the northern coastline of British Columbia, and extends from what we now call Prince Rupert southward over 160 kilometers. There are multiple reserves under the Gitxaala Nation originally being established in the late 1800's. These allotments were never agreed or consented to by the Gitxaala nation either by treaty or otherwise (Harris, 2008). The main village is located on

Dolphin Island at Latitude 53.774 and longitude -130.439. The Gitxaala Band number is 672.

The glossary of the Indian and Northern Affairs of Canada uses the term Band, to signify a body of First Nations whose collective use and benefit of lands have been set in trust and held by the Crown. Each band has its own governing band council, usually consisting of one chief and several councillors (INAC 2011). The Wapekeka Nation is located 26 km northwest of Kitchenuhmaykoosib Inninuwug (KI) and 451 km northeast of Sioux Lookout in northwestern Ontario. It was once considered part of the KI band that signed Treaty 9 in 1906, but obtained its own Band status in 1975, numbered 206 (Long, 2010). Wapekeka is located at longitude 53.721 and latitude -89.531.

The traditional dialect spoken by the Gitxaala people is Smalgyx. The Smalgyx name for the community is Lach Klan. Historically, Gitxaala people were referred to as part of the Tsimshian people that lived on the Kitkatla reserve; however, this was a definition determined by colonialists or k'umksiwah (Menzies & Butler, 2008). Though the two peoples' territories are in close physical proximity and have common places, Gitxaala is a separate and distinct nation. Wapekeka has a similar experience with KI band. Although they share a common language (Oji-Cree) and share kinship, Wapekeka is a distinct nation.

The Gitxaala Band has a registered population of 1963 band members with 423 band members registered and living in the village. This leaves approximately 1500 people living off reserve either in Prince Rupert or other urban centers. In contrast, Wapekeka has a much smaller registered population of 446 band members with 435 living in the community (INAC 2011). Although the total numbers of registered people are significantly different, the populations living in the communities are relatively the same.

The communities of Gitxaala and Wapekeka have various factors in common. Both communities have limited access to road transport. In Gitxaala, you must fly in or ferry, while in Wapekeka, you must fly in except for the two coldest months of the year, when a winter road is created. In 2016 because of the seasonably warm winter the road was only open for approximately 3 weeks and was only useable at night. There is a school located in both communities. In Gitxaala, there is the Lach Clan school which offers Primary and Secondary courses. In Wapekeka, there is just a primary school. The youths have to obtain secondary education in other communities. Wage labor force has similar trends in both communities, with rising employment rates, but decreasing participation rates (INAC 2011).

Both communities have basic western style homes with running water and either electric or woodstove heating. Most households have the common appliances, computers and some sort of wireless high-speed Internet. Both communities have Band council offices, health stations, Christian domination churches and community convenience stores. Wapekeka has a main grocery store run by community members, while Gitxaala has none. Wapekeka has its own police officer through Nishnawbe-Aski police service. Gitxaala has a Royal Canadian Mountain Police station that officer's visit weekly or upon community request.

## **Methodology**

The following chapter will describe the methods used during this research project. It will first provide a brief description of what ethnographic methods are, looking specifically at participant observation and semi-structured interviews. This will be followed by how I employed these techniques with an account of the project context. The section will finish with an overview of how standard issue-focused analysis was used to analyze the data and how participants were recruited to the project.

### **Ethnography**

Ethnographic methods utilize a variety of effective data collection techniques such as participant observation, informal discussions, interviews and focus groups (Della Porta & Keating, 2008). Using a combination of semi-structured interviews, informal conversations and participant observation I gained wide-ranging understanding of the participants perceptions without encumbering on the experience, allowing it to play out as it would naturally (Dewalt & Dewalt 2002).

### **Participant observation**

This is an important component of ethnographic research that involves researchers interacting and observing local cultural practices. Pure observation and pure participation are regarded as competing intentions; the more a researcher observes, the less they are able to participate and vice versa (Guest, Namey & Mitchell, 2013). Thus, it is important to strike a balance between being exceedingly observational or exceedingly participatory in the setting. Hammersly and Atkinson (1995) stated that, a researcher using participant observation should at all times be taking field notes and utilizing other types of documentation, whether it is still image recording or video/audio recording. The reliability of data collected in participant observation is

the method's greatest strength (Dewalt & Dewalt, 2002). It avails an abundance of valuable information on how the community members perceive the world. A study by Robidoux, et al. (2012) that documented food procurement practices in two northern remote Indigenous communities used participant observation as a method to learn about what community members thought about food. Their work has shown that using participant observation techniques, taking extensive field notes and using video documentation are useful ways to appreciate the complexities of local food procurement practices and the effort required to sustain them. Being aware that traditional western conceptions used in a university setting privilege European epistemological thought (Kovach 2010) used of informal conversation or "visits" was employed. These types of interactions are important because they are more true to Indigenous ways of knowing, knowledge sharing and culture (Kovach, 2009; 2010). It allows for naturally occurring information and participants seem more at ease then when interviewed formally.

### **Semi-structured interviews**

Louise, Barriball, and While (1994) suggested that semi-structured interviews are, "well suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues and enable probing for more information and clarification of answers" (p.330). Semi-structured interviews are commonly structured around a set of preset open-ended questions with additional questions that are established to probe for additional explanation and clarification between an interviewer and an interviewee (DiCicco-Bloom & Crabtree, 2006). Open-ended probing questions are critical to the semi structured interview process because they allow for more in depth explanation of phenomenon (Whiting, 2008).

## **Project Context**

My involvement in this project started as a volunteer with the Indigenous Health Research Group (IHRG) at the University of Ottawa. IHRG has been working in collaboration with the Gitxaala and the Wapekeka Nations for two years learning about issues around food access and striving to achieve strategies to help community members get regular access to nutritious food. Through the partnership with Gitxaala emerged a new partnership with heart and stroke Canada to build a formalized food plan that will increase local food capacity, primarily through community gardening and augmenting traditional food harvesting. My role within the project was to work with the community health director and a local elder to help develop the community garden and assist with the intergenerational traditional harvesting activities. I lived and volunteered in the community for a period of ten weeks in the spring/summer of 2015 to gather data through continuous involvement and dialogue with youth, community leaders, resource providers and elders.

My time in Wapekeka was shorter; I spent two weeks working with hunters during January 2016 as a way to familiarize with the community and its culture. This trip was made available through the agency Mictacs that sponsored my travel and stay. They also had us working on ways to sustain hunting practices in modern times with the cost of getting onto the land increasing. The first trip to Wapekeka was in January 2016 to work for Mictacs and the community to build relationships with members and hypothesize strategies to improve traditional food procurement techniques. Based on the success of the first trip, I was given the opportunity to return to Wapekeka in the Spring/Summer of 2016 to work again with the community to build capacity around food procurement strategies. One of these strategies in Wapekeka was to establish cost of harvesting traditional meat and set a price point per kilogram for each animal

harvested. One hunter was approached to see if he would be willing to record costs involved in his food harvesting activities. This hunter agreed to provide this information, which included the cost of fuel, oil, floatplanes, food and equipment maintenance on harvesting trips. The distance travelled, time spent on the land, and finally what was returned each time was also recorded. In some cases I participated and observed these trips, and in most other cases, records were exchanged via email and phone calls. For each yield, estimates were made regarding the size of the animal and quantity of edible tissue derived from each animal source. Average animal sizes were based on previous research done by Ashley (2002) and by Manitoba Hydro ([www.hydro.mb.ca](http://www.hydro.mb.ca)).

My primary responsibilities in both communities were to work in an elder run community garden and spend time on the land with people from the community, hunting, gathering and working in a camp setting. I participated in land-based food procurement activities and engaged in dialogue with community members to gain a comprehensive understanding of what food access means to the Gitxaala and Wapekeka culture. While practicing active listening, I kept extensive field notes to record all aspects and interpretations of the activities of food procurement, and looked at the challenges they faced. The first-hand experience of participant observation allowed me to gain an in-depth understanding of the context (Brass, 2004). I was continuously aware of the influence I had on the situation and understood the issues of people reacting to my presence (Bernard, 2006); I observed early spring, and late summer seasons within the Gitxaala community and the local food programming that happens within these seasons as well as winter, late spring and early summer activities within Wapekeka. My role in the community gardens was to aid in the planting and harvesting of the spring/summer crops. As



I participated as a laborer, it allowed me to observe the steps and decisions made by elders and community leaders as they pertain to the community garden.

Following a similar methodological design used by Robidoux et al. (2012), I lived in the Gitxaala and Wapekeka nations during the winter, spring and summer and learned firsthand about community food practices, such as hunting and fishing activities, food preparation and food distribution/sharing methods. In addition to documenting traditional food procurement practices, I also looked into the development and operations of the individual and community gardens recently established. As discussed previously, Euro-agrarian types of gardening were not well received in many indigenous communities because of the manner in which they were imposed on people (Milloy, 1999). However, in Gitxaala and Wapekeka, community leaders have expressed interest in gardening, recognizing its potential to addressing the ongoing food shortages the communities face. It is in this context that I examined the gardening practices used and the types of foods that are being grown. I focused on the intergenerational engagement that has been at the foundation of these garden initiatives. I conducted numerous informal conversations or (visits) geared towards understanding issues around food in each community. I found informal conversations and field notes the most useful for documenting and understanding each community's specific culture around food. It allowed for more naturally occurring information and participants seemed to be more at ease than when interviewed formally.

The use of semi-structured interviews accompanied my participation/observation methods. They were conducted with community leaders, heads of households, Elders, health officials, and Band Council members to learn about what is involved in organizing programs, challenges faced, resources required and levels of engagement amongst community members. Interviews were conducted in various settings depending on where participants feel most

comfortable. I used a digital audio recorder to conduct the interviews. The diversity of participants and the context of the research topic is the main reason semi-structured interviews are best suited for this type of research.

### **Standard Issue-Focused Analysis**

Weiss (1994) described standard issued-focus analysis as concerning oneself with what could be learned about specific ‘issues, events, or processes from any and all respondents’ (154). Robidoux (2000) noted that this type of analysis is different from a case focused approach, which focuses primarily on the individual’s experience instead of a general theme such as food access. Standard issue-focused analysis was employed to analyze the ethnographic data. The data recorded from visiting and the semi-structured interviews enabled a greater understanding of the main issues around food access in the communities of Gitxaala and Wapekeka. This method of analysis provides a rich, detailed, and complex description of the data (Weiss, 1994).

### **Participants**

Based on the relationships I have developed in the community and for a timely period of collection of data, participants were recruited using a combination of convenience and snowball sampling that was based on relationships I had developed in the communities. Subjects of my participation-observation included all land-based program participants, including staff, Elders, youth and local service providers. Attention to inform parents of the youth involvement was taken and verbal permission was sought before hand. The employment of the ethnographic methods of participant observation and semi-structured interviews availed sufficient and reliable data, and aided comprehensive accounting of food security initiatives being implemented by the Gitxaala and Wapekeka First Nations.

### **Theoretical Framework**

This chapter explains the justification for conducting research with the Gitxaala and Wapekeka First Nations. Postcolonial perspectives largely informed the research context and this section will describe why this theoretical lens is an ideal choice for this project.

The postcolonial perspective is committed to recognizing, being sensitive to and seeks to redress the marginalization of Canadian Indigenous communities due to colonization. In order to understand postcolonial theory and its potential application to food security in Canada's indigenous population, it is necessary to understand how postcolonial theory developed and how it is subject to critique. Colonialism is and was a lucrative commercial process, bringing vast capital to western colonial empires through the economic exploitation of others,

If concrete change is to take place in Indigenous communities research that is conducted needs to bring about change and at the same time attempts to stay away from perpetuating the *status quo*, research using postcolonial lens attempts this such act (Crotty, 1998). The research in this study has potentially transformative affects towards food sovereignty.

Colonialism manifests in many different ways, places and times, therefore it is hard to find a definition that is all encompassing. For this proposal I will use how Boehmer (2005) defined colonialism, which is "the settlement of territory, the exploitation or development of resources and the attempt to govern the Indigenous inhabitants of occupied land by force" (p.2). Since indigenous peoples in Canada remain subjects/wards of the Crown, it is essential to scrutinize the prefix 'post' and question how the term might be applicable when studying food security amongst Canada's Indigenous population. Postcolonial theory has developed through the concern and recognition of past events through many disciplines, such as cultural studies, political science, literary criticism and sociology (Browne, Smye & Varcoe, 2005; Bertrand &

Loomba, 1998). Framing this project within this theoretical lens enables me to see First Nations food initiatives not only as steps towards achieving food security, but also as an attempt to create cultural autonomy within the contemporary colonial framework.

Colonialism, as previously defined by Czyewski (2011), is the act of “control or governing influence of a nation over a dependent country, territory or people” (p.1). This expansion of colonies resulted in major exploitation and political domination of people and their resources. The ensuing concept of postcolonial has been greatly disputed and challenging to define. The problem regarding the prefix, post, is that it implies ‘after’ colonization that implies that colonization has finished. Though colonies such as Canada and Australia have managed to decolonize from their respective European empires and have obtained nation-state sovereignty (McLeod, 2010). These nation states became the colonizers; more specifically they became settler colonizer states that have used contemporary colonial tactics to attempt to control and then eliminate their Indigenous populations (Morgensen, 2011). In a Canadian context, Indigenous peoples have not decolonized, they have not obtained their sovereignty and are still wards of the state (Milloy, 1999). Within this colonial relationship Indigenous people are experiencing disproportionately high rates of poverty and chronic disease and are ranked lowest in Canada in terms of social statuses such as health, education, and employment (Shohat, 1992; Waldram, Herring, & Young, 2006). The term postcolonial in a literal sense is a poor representation of the current situation surrounding Indigenous people in Canada. Schwarz and Ray (2005) found that if researchers define postcolonial as events that have taken place after the initial contact between European empires and Indigenous people that the term and theoretical tradition has important value. In the paragraphs that follow I provide an overview of key elements of the postcolonial theory and explain how it will be employed in my research.

Edward Said, one of the leading authors in the postcolonial theory, introduced the concept of *Orientalism*. This concept can be indirectly linked to colonization in Canada because it attempts to understand the power relationships between colonial powers, those they rule over and the consequences of this power in the production of knowledge. Said (1978) criticizes the work of western modern scholarship that views the colonized other based on a fabricated sense of western superiority. In *Orientalism* (1978) Said speaks to the controlling and oppressive plan of the West that constructed its own superiority on the reverse portrayal of the Orient (or non-western colonized other) as primitive, irrational and substandard. Said wrote (1978) that this perspective gave justification for Imperial conquest and the subsequent colonization of peoples. Euro-Western powers thought it was their duty to force assimilation because they believed it would civilize the uncivilized (Moore-Gilbert, 1997). The reasoning was that western society was more evolved and that its imposition on Indigenous peoples would lead to the natural evolution of the 'primitive' (Wolfe, 2013).

Part of this civilizing process was to Christianize the savage and take their resources based on a false sense of entitlement (McEwan, 2008). The settler European depiction of the lesser other became so powerful that the oppressed populations began to recognize themselves as uncivilized (Moore-Gilbert, 1997) allowing for additional oppression from the dominating settler ideals (Schwarz & Ray, 2005). Said's (1978) work contributed to postcolonial theory by highlighting the links between Euro-Western settler perspectives of developing societies and the oppressive impact of colonization and imperialism. Said's work calls for a critical rethinking of the Orient (the occidental antithesis), through self-representation and voice given to those who were previously silenced through colonization (Moore-Gilbert, 1997; Said, 1978). In using this framework, the dominated location of Indigenous peoples in Canada can be similarly inspected,

exposing the artificial hierarchies of western superiority over the non-westernized Other.

Through the use of postcolonial theory I provide justification for my research as a non-indigenous researcher in an Indigenous research context and it allowed me to understand the historic forces that have led to the food insecurity problems in Indigenous communities. As well, the postcolonial lens explains why this type of research attempts steps toward decolonization. Pieterse and Parekh (1995) wrote that decolonization involves “not the restoration of a historically continuous and allegedly pure pre-colonial heritage, but an imaginative creation of a new form of consciousness and way of life” (p.3). Further, Pieterse and Parekh (1995) explained that decolonization “involves an engagement with global times that is no longer premised either on Eurocentrism, modernization theory or other forms of Western ethnocentrism passing for universal, or on Third Worldism, nativism or parochially anti-Western views” (p.4). Decolonization, instead, relies on accepting the domination of the colonized by the settler and attempting to understand and challenge how this affects popular discourse (McEwan, 2003), in my case, in relation to food security and food sovereignty, the problem with this form of decolonization is it only addresses decolonizing the mind.

Tuck and Yang (2012) argued that decolonization cannot be a metaphor; they wrote “that settler colonialism is built upon an entangled triad structure of settler-native-slave, the decolonial desires if white, non-white, immigrant, postcolonial, and oppressed people can similarly be entangled in resettlement, reoccupation and reinhabitation that actually further settler colonialism” (p.1). True decolonization is incommensurable with other social justice initiatives because these social justice practices are attempts at “settler moves to innocence” to alleviate guilt and make settlers feel better about their current standing in society (Tuck & Yang, 2012). True decolonization brings about the repatriation of Indigenous land and life (Tuck & Yang,

2012) and thus a research project using postcolonial theory written by a settler trying to decrease disease risk in Indigenous communities does not decolonize but uses the word as a metaphor (Tuck & Yang, 2012). The question now is if the research should actually have taken place if it does not truly decolonize, the answer is complicated.

Aveling (2013) may provide some insight into the question. He wrote that researchers should not talk about what we do not know. Researchers cannot escape the realities of our time and if our research can alleviate pains and oppression being experienced by Indigenous peoples it can take place (Aveling, 2013). This type of research must follow certain guidelines such as those Indigenous peoples' interests; experiences and knowledge must be at the center of the research methodologies (Porsanger, 2002). Researchers must observe cultural protocols that include the 'R words' of research: Respect, Relevance, Reciprocity and Responsibility (Kirkness & Barnhardt, 1991). 'R words' may also include: Relationships, Relationally, Resistance, Reflexivity, and Representation (Houston, 2008; Jackson-Barret, 2010; Kovach, 2009). If research follows these protocols it allows the researcher to act as an ally and more ethically sound research is conducted (Aveling, 2013), thus giving justification for this research study. Furthermore, decolonization includes settler participation (Coulthard 2014, Sullivan 2015) the institutions and structures that maintain oppression are too large to respond to effectively without settler participation and because settlers benefit in varying degrees from the dispossession of Indigenous land they should be involved in the decolonization process (Coulthard, 2014, Sullivan 2015).

Based on what has previously highlighted on postcolonial theory and the impact colonialism has had on the nutrition transition, this theoretical approach informed the direction and the way I have conducted my research. Through the assimilative and oppressive agenda of

settler colonial states, there has been a long history by the government of Canada undermining the traditional beliefs and lifestyles of Indigenous peoples. The devastating generational effect residential schools have had on Indigenous people has led to the loss of traditional knowledge surrounding food procurement and increased reliance on more modern food procurement. The problem is that the modern techniques have led to the over consumption of unhealthy foods and thus have led to increase in obesity and obesity-related disease in Indigenous communities.

Succumbing to the position of the Other, Indigenous traditional food procurement techniques were deemed savage in comparison to the superior Western colonizers. Acknowledging these changes through a postcolonial lens enabled me to understand the historical forces that have led to the high rates of food insecurity in the both in both Gitxaala and Wapekeka. Instead of making space for Indigenous perspectives in my research, which implies I have power to create space, I deconstructed my own settler colonial space in an attempt to be an ally in the process of decolonization.



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**PART TWO**

Article One

Food Access Challenges in Two Rural and Remote Indigenous Communities

**Abstract**

Gitxaala, a First Nation in Coastal British Columbia, and Wapekeka, a First Nation in Subarctic Ontario, are two rural and remote Indigenous communities experiencing high levels of food insecurity and consequent dietary related disease. Both communities have diets compromised of locally procured and market based food, but are increasingly dependent on low quality and minimally available market food. The objective of this paper is to describe the food security challenges in these distinct regions of Canada and the challenges community members face getting regular access to nutritious foods. The communities are from vastly different regions and have distinct cultures but share similar responses to their food insecurity problems, primarily focusing on promoting traditional hunting and fishing practices and creating and maintaining alternative agriculture projects. The article illustrates how land-based food initiatives do not only increase access to nutritious food but also foster a sense of community pride and increase autonomy over food choices.

## Introduction

Prior to European Contact, Indigenous peoples' food systems were intricately connected to local ecosystems, and survival depended on knowing and working with what the land offered (Morrison, 2011). However, after the arrival of Europeans the ways in which Indigenous people accessed food changed, which has led to an ever-increasing dependency on mass-produced market-based foods. This process of moving away from land-based diets to more highly processed energy dense market foods is described as the nutrition transition (Samson & Petty 2006; Popkin, Lu & Zhai, 2002). In addition to the high levels of food insecurity amongst indigenous peoples, the nutrition transition has also contributed to a multitude of social, economic and health disparities (Damman, Eide, & Kuhnlein, 2008; Kirmayer, Simpson & Cargo, 2010; Kusumayati & Gross, 1998; Popkin, Adair & Ng, 2012; Popkin, Lu & Zhai, 2002; Robidoux & Mason, Forthcoming). It must be understood that the nutrition transition was not experienced evenly amongst Indigenous peoples, depending on the amount of influence Euro-Canadians had in the region and the relative abundance of local foods. While the degree of change and date varied, the disruption of local food systems has led to heightened levels of food insecurity amongst Indigenous peoples, in particular those living in rural and remote regions of Canada (Chan et al. 2006; Lambden et al. 2006; Pal, Haman, & Robidoux, 2013; Popkin et al., 2012; Spiegelaar & Tsuji, 2013). The World Health Organization suggests that "food security exists when all people at all times have access to sufficient and safe nutritious food to maintain a healthy and active life. This includes both physical and economic access to food that meets people's dietary needs, as well as their food preferences," (2015). In a Canadian context, food insecurity is the lack of ability to access adequate, nutritious, quality food through standard food channels or the uncertainty that one will be able to do so (Davis & Tarasuk, 1994). The

term refers to the current situation, but also the potential vulnerabilities in the future (David & Tarasuk, 1994).

Many First Nations<sup>4</sup> in Canada are starting to turn to land-based food initiatives to address food security challenges by attempting to make locally procured food more readily available for community members. Most of these initiatives are not meant to subsidize market food or change government policy, but rather to find local alternatives to supply food, either from traditional<sup>5</sup> harvesting practices or alternative agricultural projects (Haman et al., 2016, Pal et al., 2013). The purpose of this article is to explore the variety of food acquisition and dietary practices in two Canadian rural and remote First Nation communities. These communities are from different geographical regions; the Gitxaala First Nation is a Coastal-Island community off the North West Coast of B.C., and Wapekeka First Nation is a subarctic mainland community in northwestern Ontario. Community profiles will be given, followed by a description of the efforts in each community at acquiring food both from the land, and at the market. It will finish with a description of initiatives geared at increasing local food autonomy by each community through promoting land-based food acquisition practices. Since food access challenges are experienced differently in each First Nation, we can understand the unique challenges each community faces by learning about two very different regions and two very distinct nations attempting to build local food capacity. It is crucial to recognize and understand the diverse challenges in order to

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<sup>4</sup> First Nations are one of the Indigenous groups currently residing in Canada.

<sup>5</sup> Traditional food is defined as food procured from the land that each community has eaten in previous generations, this term is chosen because that is how community members define their harvesting practices.



devise potential solutions to reduce the high levels of food insecurity and the multitude of health problems

### **Food Systems in Transition**

Previous to contact with Europeans Indigenous peoples in Canada were entirely reliant on land-based food resources. Coming from a diverse array of local ecosystems, Indigenous groups survived by making use of what the land provided, whether it was through hunting/gathering, agriculture, or as in most cases, a combination of the two (Morrison 2011). After contact and the increased encroachment of Europeans on Indigenous lands, Indigenous peoples were forced to modify and in some cases abandon traditional food harvesting methods and diets. For example, First Nations living in the boreal forest were greatly depleted of big game animals due to the presence of the fur trade and the overhunting and trapping that were necessary for supporting the industry, (Bishop, 1970). These shortages made First Nations people more reliant on tertiary food sources, which forced the break up of their traditional large family groups and compelled them to live on small individual tracts of land (Bishop, 1984; Morantz, 1986; Sieciechowicz, 1986). This disruption of food and material resources led to increasingly harsh living conditions and contributed to an increase of reliance on trading posts and western goods such as clothing, shelter and food (Pal, et al. 2013). After the formation of British and French colonial governments, the ways in which Indigenous peoples obtained their food were systematically removed through the creation of the Indian Act, the implementation of the reserves system, and the establishment of the residential schools system (Carter, 1999; Churchill, 2004; Francis, 1992; Mason, 2014; Milloy, 1999; Morgensen 2011; Snow, 2005; Wolfe, 2006). The church and state decreed that Indigenous peoples were in need of civilization and required an adoption of western mainstream food systems to ensure their survival (Francis,

1992). Under this assimilatory framework, Indigenous lives endured radical changes by becoming more sedentary and witnessed the rapid deterioration of their traditional food practices. (Popkin, et al., 2002; 2012).

The imposed transformations in the ways Indigenous people have acquired food is part of a nutrition transition that is described as a sudden transfer from the consumption land-based food, to the processed food bought from stores (Popkin et al., 2002; 2012 Damman et al., 2008). This nutrition transition and disruption of traditional food acquisition have had tremendous impact on Indigenous peoples. These transitions led to a dependency on western technologies and goods (Popkin et al., 2002; 2012; Damman et al., 2008). It has also led to the stigmatization of local food practices for generations of Indigenous peoples. The introduction of modern ‘civilized’ eating habits and the demonization of procuring and consuming foods from the land have resulted in the loss of traditional feeding in many communities and a reliance on market based foods. It has also led to negative effects on individual and communal self-esteem, health and welfare (Kirmayer et al., 2010). The health implications of the nutrition transition have been well documented (Anand et al., 2001; Accurso, 2008; Census, 2001; Damman et al., 2008; Dewailly, et al., 2001; Dyck, Osgood, Lin, Gao & Stang, 2010; Fox, Harris, & Brough, 1994; Green, Blanchard, Young & Griffith, 2003; Popkin et al., 2002; 2012). Popkin, Lu and Zhai (2002) found that the sudden reliance on low quality market foods, high in sugar and starch, has led to an increased burden of diet related diseases, particularly Type II Diabetes.

### **Methods**

The research for this project is grounded firmly in community based research principals and is the result of a long partnership with the Indigenous Health Research Group and the Gitxaala and the Wapekeka First Nations. Throughout all stages of the project, researchers

actively engaged with community leadership and community project members to determine the scope and direction of the research. All research activities underwent an ethics review by the University of Ottawa's Research Ethics Board.

Ethnographic methods were employed during the project; participant observation, informal conversations, and semi-structured interviews were used to collect data. Thematic analysis was employed to analyze the data. Two trips (total of four) were conducted in both communities. The first set of trips took place in Gitxaala in 2015 where I conducted the field research during the months of April, May and August. The second set of trips took place in 2016 in the Wapekeka First Nation during the months of January and June. I participated/observed in local food procurement practices (hunting, fishing and gardening). I was involved in day-to-day community activities, shared in local meals and community feasts. At all times, field notes and photo documentation were taken, describing in detail the practices around food harvesting and preparation techniques. The reliability of data collected in participant observation is the method's greatest strength (Dewalt & Dewalt 2002). It avails an abundance of valuable information about how the community members perceive the world.

I conducted numerous informal conversations or (visits) geared towards understanding issues around food in each community. These types of interactions are important because they are more true to Indigenous ways of knowing, knowledge sharing and culture (Kovach, 2009). Informal conversations and field notes proved to be most useful for documenting and understanding each community's specific culture around food. It also allowed for a more 'natural' method of sharing information; participants seemed to be more at ease in this type of conversational exchange, than when being formally interviewed.

The use of semi-structured interviews were, however, utilized to accompany the participation/observation methods. They were conducted with community leaders, heads of households, Elders, health officials, and Band Council members to learn what is involved in organizing programs, the challenges faced, the resources required and the levels of engagement amongst community members. The diversity of participants and the context of the research topic is the main reason semi-structured interviews were best suited for this type of data collection. Participants were recruited using a combination of convenience and snowball sampling that was based on relationships I had developed in the community. Interviews were conducted in various settings depending on where participants felt most comfortable. I used a digital audio recorder to conduct the interviews. The employment of the ethnographic methods of participant observation and semi-structured interviews availed rich data, and aided in acquiring comprehensive accounts of food accessibility initiatives being implemented by the Gitxaala and Wapekeka First Nations.

Standard issue-focused analysis was employed to analyze the ethnographic data. The data recorded from visiting and the semi-structured interviews provided an understanding of the main issues of food access in the communities of Gitxaala and Wapekeka. This method of analysis is ideally suited to capture main ideas provided by the participants and provide a rich, detailed, and complex description of the data (Weiss, 1994). Weiss (1994) described standard issued-focus analysis as concerning oneself with what could be learned about specific ‘issues, events, or processes from any and all respondents’ (154). Robidoux (2012) noted that this type of analysis is different from a case focused approach, which focuses primarily on the individual’s experience instead of a general theme such as food access.

## **Community Profiles**

### **Gitxaala First Nation**

The people of the Gitxaala First Nation are amongst first to arrive in what is now North America, dating back almost 10,000 years (Menzies, 2010). Their traditional territory, Laxyuup Gitxaala, covers the northern coastline of British Columbia, and extends from Prince Rupert southward over 160 kilometers. The main village is located on Dolphin Island at Latitude 53.774 and longitude -130.439. The Gitxaala Band number is 672. (INAC, 2011). The languages spoken in the community are Smalgyx and English. The Gitxaala Band has a registered population of 1,963 band members with 423 band members registered and living in the village. Access to Gitxaala is by air or by ferry from Prince Rupert. The community has basic western style homes with running water and either electric or woodstove heating. Most households have common appliances, computers and some sort of wireless high-speed Internet. It has a Band Administrative building, a Nursing Clinic, a primary and post-secondary school, and Christian domination churches.

### **Wapekeka First Nation**

The Wapekeka Nation is located 26 km Northwest of Kitchenuhmaykoosib Inninuwug (KI) and 451 km northeast of Sioux Lookout in northwestern Ontario. It was once considered part of the KI band that signed Treaty 9 in 1906, but obtained its own Band status in 1975, numbered 206 (Long, 2010). Wapekeka is located at longitude 53.721 and latitude -89.531. It is accessible by air throughout the year, and can be accessed by a winter road during the coldest winter months. Wapekeka has a registered population of 446 band members with 435 living in the community (INAC 2011). There is one primary school which means youths must leave the community to attend secondary school in Sioux Lookout or Thunder Bay. The community has

basic western style homes with running water and either electric or woodstove heating. Most households have the common appliances, computers and some version of wireless high-speed Internet. It has a Band Administrative building, a Nursing Clinic, Christian domination churches, and a main grocery store run by community leadership. The languages spoken are Ojibwe and English.

### **Food Access in Two Rural Remote First Nations**

In both Gitxaala and Wapekeka community members eat a combination of market based and locally procured food. The amount of locally procured food consumed is dependent on a variety of factors such as family situation, economics, regional geography and climate (Damman et al., 2008; Kusumayati & Gross, 1998; Kirmayer, et al., 2010; Popkin et al., 2002; 2012; Robidoux & Mason, Forthcoming; Thompson et al., 2011). In this section descriptive details are provided about what is involved in getting food to both communities, separating food that comes from the store and those that are locally procured.

#### **Gitxaala**

**Market based food access.** Gitxaala does not have a grocery store and shipping groceries and other commodities to the community is extremely difficult. In the community, there are small makeshift convenience stores that are situated in people's homes. These makeshift stores typically sell junk food and only occasionally can community members buy bags of milk or canned goods. Those healthier food items that are available are typically expensive and sell out quickly. As a result, community members must travel to Prince Rupert to purchase groceries. There is a weekly ferry that connects Gitxaala to Prince Rupert, either leaving the community on a Thursday and returning on Sunday, or leaving the community on Friday and returning Monday. The ferry costs \$50 dollars round trip. When someone needs to

access Rupert on other days they have to hire a floatplane that costs \$125 one way. The Band administration also organizes their own ferry for the purpose of picking up community guests or people travelling to work in Gitxaala. When seats are available community members can purchase seats to gain access to Prince Rupert. The Band run ferry is much smaller than the public ferry, thus limiting the amount of people it can carry. Most families will send a person in on the ferry biweekly (typically on pay day weeks) to pick up groceries and return them to Gitxaala. Once in Prince Rupert, people usually stay with family members or close friends. Renting rooms in the small town is expensive and is not worth the cost. Families typically shop at the Safeway or the Overweightea Foods. They purchase food for their whole household, put them in boxes and ship them to the docks so that they can be added to the freight on the ferry. To put a box of groceries on the ferry it costs five dollars per box of food for the freight. Households have three and up to four generations of family members living together, thus requiring six to seven boxes of groceries per household which makes the cost of accessing market food high.

The costs of ordering groceries are expensive and people need to have the flexibility to leave their homes to access them. For the families that cannot travel, or in certain cases where travel is not possible, a friend or family member living in Prince Rupert is called on to purchase the food for them and have the groceries shipped by ferry on its return. For most families, whatever the circumstance, they are only able to acquire groceries on a biweekly basis. In a household where three to four generations of families reside, it is difficult to purchase enough food to feed everyone. Moreover, the fact that on average only one or two people are working full time, make it almost impossible to acquire a suitable amount of food, let alone affordable nutritious foods. By the end of the second week of their grocery run people must be creative in

what they eat. For instance, a common meal is a bowl of Raman noodles and a grilled cheese sandwich (informal conversation with Chris<sup>6</sup>, May 3<sup>rd</sup> 2015).

**Land-based food access.** The hunters and fishermen in Gitxaala refer to locally harvested food as seafood because most of their locally sourced food comes from the sea. The majority of food consumed by the community are marine animals: crabs (*Cancer Productus*), spring salmon (*Oncorhynchus Tshawytscha*), halibut (*Hippoglossus Stenolepis*), lingcod (*Ophiodon Elongatus*), eulachons (*Thaleichthys Pacificus*), herring eggs (*Clupea pallasii*), harbor seal (*Phoca Vitulina*), sea lion (*Eumetopias Jubatus*), and octopus (*Enteroctopus Dofleini*). They also eat land mammals: white tail deer (*Odocoileus Virginianus*), moose (*Alces Alces*), and birds: Canadian geese (*Branta Canadensis*), and mallards (*Anas Platyrhynchos*). Finally, the community harvests seaweed at low tide and pick different types of wild berries depending on the season. Based on informal conversations with community members, there are approximately ten households that harvest seafood year around. Maintaining a hunting/fishing lifestyle is difficult because one must own or have access to the tools to do so. In Gitxaala you need a boat, crab traps, a gun, trolling rods, jigs and nets. The cost of gas, oil and maintaining machines is a large obstacle in accessing seafood. If a motor breaks down in Gitxaala, there are no mechanics on the island which forces people to send them away for repairs or simply replace the part/machine altogether. At one point during the fieldwork a hunter's boat motor broke, which not only affected this one individual but also his entire food network that depended on him for food. The boat motor was broken for almost a full year until a new one was purchased for

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<sup>6</sup> Pseudonyms are used to maintain participant anonymity.



\$6,200 dollars. During this time he was reliant on other harvesters if he wanted to gather seafood, and he was only able to join if there was extra space in their boats.

The time and expense of maintaining/repairing equipment pose considerable barriers to regularly hunting/fishing, and with fewer people getting the opportunity to get on the land/sea, fewer people are acquiring the requisite skills to hunt and fish. For example, Joe and Steve, brothers and local harvesters, whenever possible, bring their sons and daughters out on the land to teach them what they had been taught by their fathers and grandfathers. The knowledge of how to harvest is only one part of the picture; there is also the knowledge and skill needed to prepare the meat. This ancestral knowledge is applied to choosing which parts of the animal to eat, how to use a knife effectively so that the meat is prepared properly, and finally how to preserve the meat safely. On occasion these hunters will bring their catch to the community youth centre and show the children how to safely clean and prepare the meat. One other critical knowledge dimension is the physical geography surrounding Gitxaala, which can be fatal if one is not properly taught the necessary skills to go out on the water and/or traverse the landscape. In Gitxaala, a hunter must know how the tides work, when they are at the lowest or at the highest so that they can avoid rocks and other obstacles. They also need to be aware of the weather patterns; being on the ocean during severe weather can be deadly even for the most experienced hunters.

Over the course of this research I was able to witness firsthand this knowledge and skill by participating/observing in various fishing and sealing excursions. For seal hunting it requires strong teamwork and getting out at the right time. According to one local hunter, it is advisable to have three hunters during a seal hunt, one to shoot, one to drive the boat and one to grab the kill to prevent it from sinking. When a seal is spotted, the person shooting is brought to shore or a big rock with a stable base for better aim. The other harvesters in the boat must be ready to

rush to the seal once it is shot because as soon as the seal is hit it will sink within seconds. An experienced hunter knows that it is good to shoot the seal after it has taken a big breath so that it will stay afloat longer. The person driving the boat must be highly familiar with the water to avoid rocks while pursuing the seal. I was able to experience this unfold on one occasion when I was asked to grab the shot seal and fasten it to the vessel. The seal was then towed back to the community, prepared and later shared with local community members.

### **Wapekeka**

**Market based food access.** Wapekeka is a remote First Nation only accessible by air, other than the two-month period in the winter when a winter road is constructed. There is a dirt road that connects Wapekeka to their neighbouring community of KI. Unlike Gitxaala, Wapekeka has a grocery store in the community where members can purchase a limited selection of fresh produce, frozen meat and vegetables, dried goods and boxed/canned goods. In all the northern and remote grocery stores, food prices are significantly higher than in the south. For example, in Wapekeka 4-litres of milk costs \$14 dollars compared to the nearest urban centre of Thunder Bay where it costs approximately \$4 dollars. The store is not part of the Northern/North Mart Corporation that is the primary food supplier throughout northern Canada. It is instead owned and operated by members of the community, with profits going back into community development. The store, however, is limited in size with only four rows of shelving measuring about four meters long, two freezers and one fridge. As a result there are limited food options, especially in regards to fresh produce. To obtain a better variety of produce some community members will drive to the larger community of KI (Big Trout), which has three stores with more variety and larger quantities of food. It is a 30-minute drive from Wapekeka and depending on the season, the price of food can be either higher or lower than in the local store of Wapekeka.

The drive increases the cost because gas is around two dollars per liter. Therefore, even if food prices are slightly lower, the commute negates any savings.

**Land-based food access.** In Wapekeka, food that is harvested from the land is typically referred to as “traditional food”, referring not only to the food itself, but the customs around harvesting, food preparation, sharing and eating the food. There is a wide range of animal food sources that people historically ate in this region, including muskrat (*Ondatra Zibethicus*), mallard (*Anas Platyrhynchos*), and black bear (*Ursus Americanus*), but today primary food sources consist of: beaver (*Castor Canadensis*), rabbit (*Sylvilagus Sp.*) moose (*Alces Alces*), caribou (*Rangifer Tarandus*), geese [Canadian geese (*Branta Canadensis*) and snow geese (*Chen Caerulescens*)], while also fishing for walleye (*Sander Vitreus*), sucker (*Catostomous Commersonii*), whitefish (*Coregonus Clupeaformis*), pike (*Esox Lucius*), lake trout (*Salvelinus Namaycush*), burbot (*Lota Lota*) and sturgeon (*Acipenser Fulvescens*). There are wild edible plants that are available in the summer, including blueberries, raspberries, cloudberries and gooseberries. These are never sold in the community because local harvesters have been taught to give the food away to community members in need (Elders, single parents or welfare clients) or trade them for other types of food or tools needed for hunting i.e. gas, oil or bullets.

Traditional foods remain an important part of the culture and diet in the Wapekeka First Nation; however, there are critical barriers that community members face to access these foods. The barriers include costs of tools necessary to harvest, the knowledge around where and when to hunt certain animals and the time spent out on the land. These barriers have resulted in fewer people hunting and fishing, and as is the case in Gitxaala, fewer people acquiring land based skills. There are approximately ten households in Wapekeka that harvest in all four seasons. In order to do so, a hunter requires a snowmobile, a gun, a boat, beaver traps, rabbit snares, a blind,

fishing rods and nets, and an ATV. These materials are expensive and costs continue to rise. For example, when Pal et al., (2013) worked with local harvesters, snowmobile costs were estimated to be \$6,000 dollars, whereas as today, it would be difficult to get a snowmobile for under \$10,000. The costs for oil and gas are also high, with residents paying \$2/litre—approximately one dollar more per litre than what is being paid in Thunder Bay. In some cases floatplanes are chartered to bring harvested game back to to the community. One trip costs approximately \$4,500 dollars. For instance if a significant amount of geese is harvested in the spring a, or a moose is shot far from the community, harvesters charter the plane to bring the game back rather than making multiple day trips by boat.

As is the case in Gitxaala, many Wapekeka community members lack knowledge around land-based food practices. Only a small percentage of people know enough about the techniques to be able to yield all seasons. A proficient harvester knows when they can hunt for certain animals based on migration patterns. For instance, caribou is typically hunted twice a year during major migration trips, once in the fall and once in the early winter. The same applies to geese hunting, which happens in the spring when the geese return north and in the fall when heading back south. Moose hunting is most complex, as hunters need to know where to go, how to track and chase and then be a good enough shot to take the animal. The winter hunt is even more challenging as hunters try to get the animals in the deep thick snow because it makes it difficult for them to run away. Moreover, it is necessary for a hunter to have knowledge about the regional geography and ice conditions because a harvesting trip can turn deadly if one is not safe, especially during the early spring and late fall when the temperatures fluctuate. Hunters drive snowmobiles over the rivers and lakes and they need to know the safest routes at different times of the year. They also need to know how to approach patches of slush and open water, which

requires drivers to maintain or increase speed to keep the machine afloat. The more knowledgeable the hunter is, the more productive the hunt is, while staying relatively safe in the process.

Land-based food gathering is time consuming and does not guarantee returns. It is not unusual for a hunter to spend a full day on the land without success and return empty handed. Hunters will often work in teams to try and maximize their harvesting capacity. For instance, when a group of hunters seek out a moose, a few hunters will chase the moose on a specific path while other hunters are waiting for its arrival ahead. After the moose is shot, teamwork is involved in extracting the meat. With more hunters there is greater success in getting a moose and less labour getting the meat back to the community. For community members who value traditional harvesting but do not have the means to regularly get on the land, they resort to hunting in around the community, which on occasion can be successful. Most community members practice land-based harvesting during the spring for the annual geese hunt or during some winter weekends for derby fishing in KI. The barriers to harvesting local food are so great that there are just handful harvesters that hunt more than once a week.

### **Responses to Food Access Challenges**

In Gitxaala and Wapekeka it is evident that community members face significant challenges obtaining regular access to nutritious food, whether it is from the market or from the land/sea. In both Gitxaala and Wapekeka, leadership understands that food accessibility is a problem that must be addressed. With seemingly less control over the high costs of shipping food from the south, efforts tend to focus on building local food capacity to make locally procured foods more readily available to the community members. How these local food initiatives manifest are unique to each community, but share an emphasis on both traditional and alternative

modes of local food production. This section will describe the coordinated attempts by community leaders in both communities to development and implement local food initiatives and build awareness and participation around local food procurement.

### **Gitxaala**

Leadership in Gitxaala has focused on initiatives that promote intergenerational learning and fostering local food procurement. One such initiative was the creation of alternative agriculture<sup>7</sup>. It began as a partnership between the Band administration and the Community Health Centre. They approached an Elder named Jane to take the lead in the project because she had experience with her own gardening project outside her home. Jane's resilience and drive to make positive change in the community is what has helped the project grow. The garden project began with Jane travelling door-to-door to help construct and maintain personal garden plots. As the Community Health Centre secured more funding with partnerships from outside funding agencies such as the Heart and Stroke foundation, they were able to build two community garden locations. Rather than individual homegrown gardens, members could now choose plots in the larger common garden, where Jane would help with planting and maintaining crops.

The community garden started small in its first years of creation with Jane, who had no formal agriculture training, experimenting with whatever she felt would grow best. Jane developed more gardening knowledge by reading what was available online and attending food capacity building conferences in the province. The Band administration and the Health Centre secured the funding for Jane's trips out of community. In the first year of the community garden

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<sup>7</sup> Alternative agriculture project are gardening projects that were not historically practiced in the community.

they were able to successfully grow potatoes and strawberries. These yields were then given out to community members, prioritizing Elders and single parent families.

During the fieldwork for this project, a small greenhouse was constructed with funds supported by the Community Health Centre and Housing Program. By building the greenhouse, important weeks were added to the growing season, allowing Jane to get a head start planting seeds and seedlings without the risk of frost killing the plants. The same year, additional funding was provided by the University of Ottawa's Global Engagement Center to help pay for the shipment of soil from the mainland to Gitxaala. The fact that the community is on an island with very limited soil, outside soil is required to build raised garden beds. The cost of shipping soil is exorbitant and labour intensive. While conducting field research I assisted in moving and sifting the soil as well as constructing/raising garden beds. By the end of the harvest season the community harvested potatoes, tomatoes, green peppers, lettuce, peas, green onions, strawberries, cabbage, broccoli, carrots, herbs, beans, beats and pumpkins. The produce was given to the Health Centre, which was used for the prenatal care program and food was given to new and expectant mothers. Food from the garden was also given to the school to help with a healthy breakfast program that offers school children a nutritious breakfast every morning.

Gitxaala has put considerable effort into intergenerational learning and land-based food procurement techniques. The community runs cultural teachings at the youth centre such as basket weaving, mukluk making and bark pulling trips<sup>8</sup> with the youth. They also spend time to ensure that the youth are speaking their language by running language workshops. Furthermore, the partnering of the Community Health Centre with the University of Ottawa's Global

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<sup>8</sup> Bark pulling is a cultural practice, where community members harvest bark from cedar trees to make baskets and other tools.

Engagement Center has provided funding for seafood procurement trips that were designed to take youth out on the water to learn how to harvest food. Jane's family and families like hers are catalysts to these initiatives. This is because land-based food programs need teachers that already possess the knowledge around harvesting practices so they can effectively share these teachings with subsequent generations. Jane and her extended family hold this type of knowledge; they are for lack of a better word community champions<sup>9</sup>. Her partner and grandchildren help her in the garden and her two sons have significant understandings of seafood procurement and are always willing to share their knowledge. During my time in the community both of Jane's sons conducted harvesting trips with the youth and would take their yields to the youth centre to teach the youth how to properly prepare the meat. Their children, who are now young men with families, are also willing to pass on the knowledge. One grandson allowed me to accompany him on multiple hunting/fishing trips. He is employed seasonally and was on a work break during my stay. These trips always involved his younger cousins and kids who were very eager to get on the water and learn how to harvest seafood. While observing this exchange of knowledge, it was clear that both sides benefitted from this experience: on one hand the student acquired knowledge, while and on the other, the teacher felt a sense of pride giving back to his people.

One harvesting trip in particular demonstrates these benefits. Jane's grandson, Sam, allowed me to accompany him on a harvesting trip with two youths (thirteen and sixteen years of age). While the group was jigging for halibut the youngest youth seemed to have snagged something. At first Sam was sceptical that the boy had really caught a fish because prior to this, he had

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<sup>9</sup> Community/Family champions are community members that have knowledge around traditional cultural practices i.e. hunting and fishing practices. They also understand that for the survival of this knowledge they must transmit what they have learned.



repeatedly snagged the ocean floor. Sam asked the youth if he had caught something while the youth stared back at Sam with wide eyes. The rod then bent and the youth was yanked from his seat. “Do you need help?” asked Sam. Again the youth just looked back at him amazed. We paused to see what was going to happen next but after another pull from the fish, the youth was nearly taken over board. Sam could now see that the fish was too big and if he did not step in, the situation could turn dangerous. Quickly, Sam took the rod from the boy and started reeling in the fish but it was large. He ended up having to fight for fifteen minutes before finally exhausting the fish and bringing it to the surface. Although the fish was exhausted, it was still alive and resisted by pulling and yanking on the line. Sam then realized he had forgotten his gaff hook; we learnt at this very moment, that it was an essential tool for halibut harvesting. Without the gaff hook, there was no convenient way to stun the fish and pull it into the boat. This however did not deter Sam; he told one youth to hit the fish on the head with a club he had in the boat while also directing me to grab the halibut by its gills and pull it in to the boat. Just after the boy wacked the fish, I shot my hands out of the boat securing the gills. The fish’s strength and size made it very difficult to pull in and I was unable to pull it into the boat alone. Sam seeing my struggle quickly gave the fishing rod to one of the younger boys and grabbed the gills too. We then managed to pull the 36 kilogram halibut into the boat. The smile on everyone’s face was unforgettable. It was a true team effort, and the first halibut catch for the youngest boy on the boat. We returned to Gitxaala where Sam’s dad cleaned and deboned the fish in front of us and other youth. The steaks were then distributed to families in the community.

### **Wapekeka**

Community leadership in Wapekeka, similar to Gitxaala, have taken a two-pronged approach to building local food capacity, focusing on gardening projects and promoting traditional food

procurement practices. These initiatives are dedicated to increasing locally harvested food in the community. Through partnerships with the Sioux Lookout Area Aboriginal Management Board and other capacity building groups, the community has secured funding for knowledge exchange trips where youth are taken on the land to learn how to hunt and fish. For these initiatives, local harvesters and keepers of traditional knowledge are chosen to lead these intergenerational teaching trips. These teachers come from champion families who understand that they need to maintain land-based food practices in order to gain better access to nutritious food, but also to maintain and to increase participation in traditional cultural practices. After the youth return from hunting, the yields are shared with community members at large. During the summer community harvesters hold feasts by the lake in a structure that was built by the Band. These feasts are held to increase participation and pride in traditional food, while taking concrete steps to provide community members with nutritious food. Everyone in Wapekeka is invited and even people from KI will make the 30-minute drive to attend. These initiatives are sustained not only by community leadership but also by champion families who are leading the charge to build greater food capacity.

Peter's family is one of the prominent families leading many of the local food initiatives, which involve traditional harvesting practices and garden projects. The Band administration, in partnership with the Nishawbe-Aski Nation (NAN) and other outside agencies, has created a community garden. Peter's daughter Danielle, who works for the Band administration, has taken the lead in the garden project. The garden is still in the beginning phases and because the local temperature is colder than Gitxaala, they have greater difficulty growing produce. Despite the short growing season they have been able to grow cherry tomatoes, potatoes, beans, carrots, brussels sprouts and strawberries. The food was shared with community members who had

participated in the growing season as well as Elders and families in need. In 2016, Danielle secured funding to purchase a greenhouse and it will be erected by the spring of 2017. The greenhouse was purchased with the intention of prolonging the harvesting season. Danielle and her family have also expressed interest in starting a community compost system, where community members would pick up buckets of food scraps from each house and bring them to the garden. Maintaining the garden is not without challenges since there is no fulltime gardener and people work on a volunteer basis. Despite these challenges, Danielle and her husband Nick managed to plant over 250 potato seeds, carrots, onions, beats and strawberries this season. Furthermore, there was funding that was secured this year to aid community members in creating personal garden plots outside their homes. Each member who participated in this project was given a gardening bag, shovel, rake, potato, herb and beat seeds, seedling trays, fencing and permaculture soil. Building food capacity requires champions that have both the knowledge around harvesting techniques and the drive to increase the prosperity of their nations. The ability for these initiatives to spread out beyond the champion families is critical for sustainability.

### **Conclusion: Building More than Just Food Capacity**

The First Nation communities of Gitxaala and Wapekeka both have experienced radical changes in their food systems and food traditions since European contact. The transition has led to a dependency on mass-produced market food that has contributed to the multiple health disparities that many Canadian Indigenous peoples now face. Despite the distinct culture, histories and environments of the Gitxaala and Wapekeka First Nations, they both share similar food access challenges and similar strategies to address them. Leadership in both communities have established initiatives geared towards creating more autonomy in locally procured food. These responses do not focus on store bought food and pricing, but instead on ways to gain better

access to food found on their land. They highlight the importance of connecting to local ecosystems, and depend on knowing and working with what the land offers. These responses to local food capacity are more than about increasing food security, but also about fostering community pride and a greater sense of autonomy over food choices. Current research has shown that cultural continuity, such as land-based food harvesting practices, help protect against critical health problems, such as suicide and other mental illness (Chandler and Lalonde 2008; Damman, et al., 2008; DeWailly, et al. 2001; Haman, et al. 2010; Johnson-Down & Egeland, 2010; Kelm, 2001; Kusunoki, et. 2003; Robidoux & Mason, Forthcoming). The land-based food initiatives employed by both communities can be used as templates for other communities and help to further the discussion on how and why programs are effective. What is clear is that champion families who are dedicated to change are crucial to ensuring the continuity of these programs. As funding and experts come and go from communities, it is these keepers of knowledge that are the catalysts who will ensure the reliability and sustainability of these projects. Their efforts need to be supported through research that is focused on gaining a better understanding of how food is acquired from different regions. Doing so will allow regional specific responses that can be used to help create and implement programs that are focused on locally acquiring food with the goal of increasing health outcomes. Finally, more research focus needs to be conducted into quantifying how the local food procurement initiatives improve access and availability in rural and remote Indigenous communities.

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Article Two

The Cost of Local Food Procurement in One Northern Rural and Remote Indigenous Community

**Abstract**

Northern Rural and Remote Indigenous Communities in Canada are experiencing disproportionately high rates of diet related diseases such as Cardio Vascular Disease and type 2 diabetes due to the limited access of nutritious food. They have experienced a rapid nutrition transition that has lead to an over reliance on low quality market-food. The objective of this article is to continue upon the work conducted by Pal, Haman, & Robidoux (2013) to illustrate the costs of locally procuring food for the Wapekeka First Nation. Wapekeka leadership has looked to land-based food as a way to increase food choices in the community. As well the paper will compare land-based food costs with market foods of similar energies and dietary values. It is concluded that acquiring land-based foods requires significant time, energy and financial stability but is still economically comparable to market foods. Considering the tremendous costs of importing market food to remote northern communities, land based food procurement is a viable and culturally valuable option to help increase local access to healthy foods.

## Introduction

Throughout much of northern Canada, Indigenous Peoples are increasingly facing challenges gaining regular access to nutritious foods (Chan et al. 2006; Lamden, Receveur, Marshall, & Kuhnlein, 2006; Pal, Haman & Robidoux. 2013; Robidoux & Mason, Forthcoming; Spiegelaar & Tsuji, 2013). The issue of northern food security is receiving considerable public attention in Canada, with reports such as *Food Banks Canada Calls For Action To Fight Hunger In North* (Zerehi, 2015), *New Campaign Aims To Shed Light On The High Cost Of Food In Canada's North* (Judd 2016) and *Helping Our Northern Neighbours Explodes With Offers To Pitch In* (Harowitz 2015), exposing the deplorable nutritional status of northern Indigenous populations. In northern Ontario, researchers have done much to expose the food access challenges rural remote communities are facing, and the poor nutritional status of the Ojibwa, Oji-Cree and Cree populations that live in the region (Dyck, Osgood, Lin, Gao & Stang, 2010; Green, Blanchard, Young & Griffith, 2003; Pal, et al., 2013; Popkin, Adair, & Ng 2012; Popkin, Lu, & Zhai. 2002; Robidoux & Mason, Forthcoming; Thompson et al., 2011; Young, et al. 2000).

## Context

This research article provides insight into the costs of locally procuring food in the Wapekeka First Nation as a means of improving local food access and quality. It continues to build on the research conducted by the University of Ottawa's Indigenous Health Research Group (IHRG). The Wapekeka First Nation and IHRG have worked together for over a decade studying northern food security issues and the impacts of poor nutrition on the disproportionately high burden of dietary related disease (Haman et al., 2010; Imbealut et al., 2011; Robidoux et al., 2012; Pal et al., 2013). Community leadership has prioritized initiatives geared towards

increasing the use of locally harvested food as an alternative to the high priced and low quality food available in the community run store. As lead author for this paper, I have been involved with the IHRG since 2015 documenting local food practices in rural remote First Nations communities in coastal British Columbia and northern Ontario. This article focuses on ethnographic research conducted in the winter and spring of 2016 estimating costs associated with local food procurement and to build on previous food costing research conducted by Pal et al., (2013) in Wapekeka in 2010-2011. During a period of eight months, one extended family's food harvesting activities were documented to be able to understand what was involved in harvesting local food and what costs are incurred as a result of (primarily) hunting and fishing. Through this research it is revealed that while there are significant costs and skills required to get on the land and harvest foods, these costs, when averaged out over the course of the year, are comparable to food prices in the local store. While this research can only provide a snapshot of one family's cost over the course of an eight-month period, repeatedly estimating food harvestings costs (as done by Pal et al., 2013) will provide more accurate readings of what is required to source food from the land and how viable it is as a local food strategy.

### **Health effects related to Food Access**

Limited assortment of perishable foods, high food prices, ever-increasing transport costs, uncertainty of travel with winter roads not freezing over, elevated poverty rates and the decline in use of traditional foods have all led to high levels of food insecurity in Canada's northern rural and remote Indigenous communities (NRRI) (NFSPC, 2003). The transformation of food systems that have been imposed on Indigenous nations in Canada are part of a nutritional transition that Samson and Pretty (2006) describe as the sudden shift from consuming foods from the land to processed store bought foods. Since the earliest stages of European contact,

Indigenous food systems have been eroded to the extent that land-based diets have almost all been replaced by highly processed energy dense diets (Damman, Eide, & Kuhnlein, 2008; Kirmayer, Simpson & Cargo, 2010; Popkin et al, 2012; 2002). The health implications of the nutritional transition have been well documented and diet related disease continue to rise (Anand, et al., 2001; Accurso, 2008; Census, 2001; Daniel, Rowley, Herbert, O’Dea, & Green, 2011; Damman et al., 2008; Dewailly, et al., 2001; Dyck et al. 2010; Fox, Harris & Brough, 1994; Green et al., 2003; Popkin et al., 2012; 2002). In the specific region in which this research takes place, Imbeault et al., (2011), found that prevalence of obesity and Type 2 diabetes are amongst the highest in the world. To address these health problems community leadership such as Band council members and health directors have spent time and resources trying to improve access to healthy food alternatives. These responses have not focused on challenges in regards to market food, but instead emphasize increasing land-based food practices. Communities, outside agencies and levels of government all promote land-based initiatives but how viable they are as food security solution remains to be seen. As a starting point, understanding the costs of accessing the land is key to conceptualizing how viable these local food initiatives are in helping to improve dietary challenges First Nations people face.

### **Methods**

The research for this project is firmly grounded in community based research principals and is the result of a decade long partnership with the Indigenous Health Research Group and the Wapekeka First Nation. Throughout all stages of the project researchers actively engaged with community leadership and community project members to determine the scope and direction of the research. All research activities underwent ethics review by the University of Ottawa’s Research Ethics Board.



The community involved in this project is Wapekeka (Angling Lake) First Nation, which is located 26 km northwest of Kitchenuhmaykoosib Inninuwug (Big Trout) (KI) and 451 km northeast of Sioux Lookout in northwestern Ontario. It was once considered part of the KI band that signed Treaty 9 in 1906, but obtained its own Band status in 1975, numbered 206 (Long, 2010). Wapekeka is located at longitude 53.721 and latitude -89.531. It is accessible by air throughout the year, and can be accessed by winter road during the coldest winter months. Wapekeka has a registered population of 446 band members with 435 living in the community (INAC 2011). There is a single primary school and youths have to obtain secondary diplomas in other communities. The community has basic western style homes with running water and either electric or woodstove heating. Most households have common appliances, computers and some sort of wireless high-speed Internet. It has a Band Administrative building, a Nursing Clinic, Christian domination churches, and a main grocery store run by community leadership. The languages spoken are Oji-Cree and English.

The research for this article was conducted over an eight-month period in which ethnographic methods were employed. During the months of January and June 2016, fieldwork in the community was conducted which involved participating/observing in local food procurement practices (hunting, fishing and gardening), being involved in day to day community activities, sharing in local meals and community feasts. At all times, field notes and photo documentation were taken, describing in detail the practices around food harvesting and preparation techniques. Numerous informal conversations took place with community participants and researchers. These conversations proved to be a valuable way to gather information from local community members, where people seemed relaxed and conversations flowed easily. In addition to the informal conversations, semi-structured interviews were conducted with local hunters, elders,

band councilors, band office workers and other community members at large. These interviews were focused on the people's dietary practices and how they have changed over time. Questions focused on how much land-based foods are consumed versus store bought foods, how often people go out on the land to hunt and fish, and what values are associated with land-based food practices.

In order to estimate costs associated with harvesting land-based foods, methods employed by Pal, et al. (2013) were utilized. These methods involved working with local hunters to record the costs of all food harvesting activities during peak harvesting periods. In Wapekeka there are approximately ten households with one person per family who regularly gets on the land and harvests food for his extended family and shares it amongst the community whenever possible. One hunter was approached to see if he would be willing to record costs involved in each food harvesting activity. This hunter (Allan<sup>10</sup>) along with his wife were willing to provide this information which included the cost of fuel, oil, float planes, food and equipment maintenance on harvesting trips. The distance travelled, time spent on the land, and finally what was returned each time was also recorded. In some cases researchers participated and observed these trips, and in most other cases, records were exchanged via email and phone calls. For each yield, estimates were made regarding the size of the animal and quantity of edible tissue derived from each animal source. Average animal sizes were based on previous research done by Ashley (2002) and by Manitoba Hydro ([www.hydro.mb.ca](http://www.hydro.mb.ca)). For each trip, costs for fuel, oil, floatplanes charter fees, food and equipment maintenance were recorded.

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<sup>10</sup> Pseudonyms are used to maintain participant anonymity.

## Results

The research period began in January 2016 and finished in August 2016. During the winter season from January to April, Allan on average conducted hunting and trapping trips twice a week. During these trips he was able to combine beaver trapping along with hunting caribou and moose. These harvesting practices consisted of day trips in close proximity to the community, where he would travel by snowmobile in the surrounding territory for periods of time lasting no more than eight hours. Allan also conducted overnight trips at his family camp once a week during the winter. This resulted in about 36 hours spent out of the community. The camp is about 50 kilometers away from Wapekeka and in the winter can only be accessed by snowmobile or floatplane. Although the primary purpose for these trips were for trapping, he would also use this time to do maintenance and repairs at his camp to prepare for hunting during the spring and fall, when the family stays at the camp for extended periods.

Depending on the type of harvesting being done, there are essential items that hunters/anglers require to hunt/fish and to traverse the landscape. Table 1 provides base estimates of essential materials and costs as identified by Allan. These costs, totaling over \$25,000 are comparable to what was documented by Pal, et al. (2013). The total costs for the winter hunts are shown in Table 2. Food, fuel, oil and maintenance costs amount to nearly \$10,000. These winter hunts returned 1 moose, 10 caribou and 20 beaver. It must be noted that these costs do not take into account the time and labour involved in harvesting and preparing wild food. For the purpose of this research project, it was decided to measure only the hunter's costs when on the land procuring food for the community, to provide a better understanding of the financial requirements and overall viability of these techniques. However, costs must be considered in a larger context of labour and time involved in food preparation and procurement.

Table 1

| Equipment                 | Optimal Price |
|---------------------------|---------------|
| Boat                      | \$4,000.00    |
| Radio                     | \$500.00      |
| Life Jacket               | \$18.00       |
| GillNets                  | \$381.00      |
| 25 HP Motor               | \$800.00      |
| Jerry Can                 | \$50.00       |
| Fishing Reel              | \$100.00      |
| Fishing Rod               | \$40.00       |
| Rope                      | \$60.00       |
| Ski-doo                   | \$10,000.00   |
| Trap                      | \$40.00       |
| Shot Gun Bullets          | \$250.00      |
| Rifle Bullets             | \$40.00       |
| Snare                     | \$7.00        |
| Snowmobile Slides         | \$95.00       |
| Boggan Hitch              | \$500.00      |
| Tarps                     | \$95.00       |
| Sleigh                    | \$800.00      |
| Axe                       | \$75.00       |
| Skinning Knives           | \$150.00      |
| Satellite phone           | \$2,850.00    |
| 25 HP Outboard Motor      | \$4,500.00    |
| Guns (Rifle and Shot Gun) | \$900.00      |
| Total                     | \$26,251.00   |

Table 1: Base expenses at optimal prices for hunting and fishing during the 2016 harvest.

Table 2

| Supply                                    | Cost       |
|---|------------|
| Fuel 2\$/L                                | \$5,600.00 |
| Oil                                       | \$480.00   |
| Maintenance: Replaced Magneto on Ski-doo. | \$2,000.00 |
| Food                                      | \$1,600.00 |
| Total                                     | \$9,680.00 |
| Yields                                    | 1 Moose    |
|   | 10 Caribou |
|   | 20 Beaver  |

Table 2: Breakdown of costs associated with the winter hunting in 2016, and animal yields returned.

Table 3

| Expense            | Cost       |
|--------------------|------------|
| Float Plane Rental | \$4,535.00 |
| Provisions         | \$300.00   |
| Total              | \$4,835.00 |
| Yield              | 250 Geese  |

Table 3: Breakdown of expenses for spring geese hunt in 2016 and yields

Table 4

| Food                             | Energies from edible meat, Raw, (kcal/100g) | Protein (g) | Fat (g) | Carbohydrates (g) | Price Per Kg or Uni (CDN \$) |
|----------------------------------|---|-------------|---------|-------------------|------------------------------|
| Ground beef                      | 332   | 14.35       | 30      | 0                 | 12.99                        |
| 12 Large Eggs                    | 143   | 12.56       | 9.51    | 0.72              | 6.6                          |
| Pork Loin                        | 172   | 20.85       | 9.84    | 0                 | 12.29                        |
| 4L 2% Milk                       | 50  | 3.3         | 1.98    | 4.8               | 14                           |
| Rotisserie Chicken Bone in Whole | 111   | 20.33       | 2.7     | 0                 | 20                           |
| Moose                            | 102   | 22.24       | 0.74    | 0                 | 21.71                        |
| Beaver                           | 146   | 24.05       | 4.8     | 0                 | 37.89                        |
| Canadian Geese Breast            | 133   | 24.31       | 4.02    | 0                 | 9.04                         |
| Whitefish                        | 134   | 19.09       | 5.86    | 0                 | 23.25                        |
| Sucker                           | 92  | 16.76       | 2.32    | 0                 | 6.27                         |
| Walleye                          | 93  | 19.14       | 1.22    | 0                 | 18.71                        |
| Woodland Caribou                 | 127   | 22.63       | 3.36    | 0                 | 6.99                         |
| Fresh Water Lake Trout           | 148   | 20.77       | 5.22    | 0                 | 19.09                        |
| Sturgeon                         | 105   | 16.14       | 4.04    | 0                 | 12.67                        |

Table 4: Estimated cost/kg of harvested meat procured over an 8-month period. Reported cost of store bought-animal products from the Wapekeka community store. Energy outputs (kcal/100g) and dietary values for each food product.

During the spring harvest of 2016, due to the unseasonably warm weather and the limited amount of yields, Allan had to hire a floatplane for both his trips. Table 3 accounts for the costs associated with the floatplane, the provisions used in Allan's goose hunt and the amount of geese it yielded. In the summer harvest of 2016 Allan and his family were able to catch: 6 Whitefish, 20 Walleye, 19 Suckers, 22 Lake Trout, and 26 Sturgeon. Table 4 shows the final costs per kilogram of animals harvested and their energy outputs and dietary values based on recordings done by the research team and average animal yields found by Ashely (2002). The dietary values were based on averages provided by the USDA (2016). It also shows the cost of local animal based foods at the local store in Wapekeka that best serve as price comparators.

The results show that for beaver (*Castor Canadensis*), moose (*Alces Alces*), whitefish (*Coregonus Clupeaformis*), walleye (*Sander Vitreus*), and lake trout (*Salvelinus Namaycush*), the price per kilogram is more than store bought meats of similar energy quantities and dietary value. There are exceptions because some animals found locally have lower price points than the store bought meat products. Food sources such as caribou (*Rangifer Tarandus*), estimated at \$6.99/kg, geese (*Branta Canadensis*), estimated at \$9.04/kg, sucker (*Catostomous Commersonii*) estimated at \$6.27/kg, and sturgeon (*Acipenser Fulvescens*) estimated at \$12.67/kg were all cheaper than comparable store items.

### **Discussion**

The results of this study point to high variability in yields that make it difficult to estimate costs. There are a host of factors determining how successful trips are, which requires ongoing monitoring of harvest activities to obtain a more complete picture of land-based food costs. The 2016 harvest pointed out that it is expensive to procure food from the land but that these costs are not dramatically different than what one pays in the store for similar types of food. For example,

at the store ground beef costs \$12.99/kg, which is more expensive than harvested caribou (\$6.99/kg), geese (\$9.04/kg), and two types of fish: sucker (\$6.27/kg), and sturgeon (\$12.67/kg). In many cases the hunt provides food sources at a cost comparable to what one pays in the store, but in addition offers a richness and diversity that is not available at the store. Effectiveness of the trips varies depending on the distance travelled and yields returned. Based on the results provided by Allan and through interviews with other local hunters, one is required to travel further and further from the community to attain higher yield results. For example, Jacob is a local hunter who is known for his proficiency in harvesting food, but this past year he had stay closer to the community due to health problems and only managed to harvest approximately 15 geese. In contrast, Allan, who travelled to his camp over 50 km from the community twice during the season, was able to harvest approximately 250 geese.

The discrepancy between distance travelled and total yields is perhaps even more evident when it comes to fish harvesting. When Allan and his father-in-law set up a gillnet in Angling Lake to try and harvest whitefish (approximately 10 minutes from Wapekeka) they only caught six whitefish, which breaks down to \$23.25/kg. Furthermore, during the summer of 2016, Allan travelled out of his community twice a week, either trolling for lake trout or casting for walleye. He does this up the Fawn River on Big Trout Lake, which takes over an hour to reach. After costing Allan's yields on these trips it was found that walleye costs were \$18.71/kg and lake trout was priced at \$19.09/kg. Finally, Allan made two overnight harvesting trips to fish for sturgeon. The first trip was 30 km down the Fawn River, where he camped for two nights and the second trip was to Ghost Lake, a 45-minute floatplane flight. Based on the data collected, sturgeon was priced at \$12.67/kg. These prices are a concrete example that typically the further one travels from the community the greater the return, which therefore reduces the overall cost of



food. There are however exceptions to this rule. For instance suckers were priced at 6.27/kg and this is almost half the price of other meat based protein items. In recent years, fewer community members keep suckers because they cannot be deboned and unless smoked (which takes hours), and few people like the taste. Allan only harvested suckers caught in his gillnet while fishing for whitefish. It is also of interest that for geese and sturgeon, floatplanes were called to collect the yields and return them to the community. Even if this increases the trip cost significantly, it is still cost effective due to the high yields and massive amounts of edible meat, in contrast to the minimal yields available when hunting/fishing adjacent to the community.

Local food harvesting practices are important to Wapekeka because they offer a variety of food items with important nutritional content that is not available in the store. Community members in Wapekeka eat a combination of store bought and locally procured food. There are meat protein sources in the store but they are of higher fat and salt content compared to the fresh protein sources harvested from the land (Haman et al., 2010; Samson, & Pretty, 2006). For example, over the course of this research, other than battered fish sticks, not one variety of fish was available in the store. With such limited options at the store, community members supplement diets with food from the land. The amount of locally harvested food consumed per household varies dramatically, as those who have the financial means, land-based knowledge or family connections tend to have more regular access to land-based foods. Even for those community members wishing to increase local food intake, the time, costs, and knowledge to successfully hunt and navigate the complex terrain and waterways, make hunting and fishing formidable. Hunting and fishing trips can take a full day or multiple days, without guaranteed yields. For Allan, he was afforded the opportunity to learn land-based skills from his parents, grandparents and extended family. He learned how to hunt, fish, navigate and survive on

the land when he was young and he has maintained this way of life into adulthood. His family has not lost the knowledge around local harvesting techniques and he made a point of sharing this knowledge with his own children and with people in the community. Important within all this is the large extended family Allan comes from and has now married into a family who support and participate in local food practices by either harvesting or preparing the yields. The knowledge and experience Allan and his family have around traditional harvesting techniques is not the common experience in Wapekeka. With approximately ten households with family members who regularly get on the land, Allan and his extended family make up over half of the households that hunt year round. As a result, for most community members, the consumption of land-based foods is limited to what is available during community or when trades can be made with local hunters for wild game. Community leadership has put considerable effort and focus on initiatives that try to increase the participation of local harvesting practices, but it is clear that more support is needed.

Important in all of this, is that even for hunters who have the knowledge and means to get on the land, the amount of local food they are able to procure remains somewhat limited in terms of what is required to feed a household. While it is certain that the greater the yield proficiency the less time and costs are required to harvest food. However even for the most proficient hunters, there remain considerable costs in accessing the land. Startup equipment costs and maintenance of equipment greatly impacts overall cost but have not been fully taken into consideration in this article. As a result their needs to be increased support for local procurement, not unlike what is taking place in northern Manitoba. The Nisichawayasihk Cree Nation started a wild food distribution program called the Nelson House Country Food Program. The program has seven community members, that include a coordinator, a technician, and five

hunters who harvested food throughout the year. The food is given out to community members at no cost, prioritizing those in need such as elders, low-income single parent families and the ill. The program is financially supported by the Nelson House Trust Office through the Northern Food Implementation Agreement (Thompson, et al., 2011). Support for land-based food initiatives is also seen in Northern Quebec where more than four million dollars was allocated to community hunting and support programs in the James Bay and Northern Quebec regions (Kativik Regional Government, 2008). The “Act respecting the Support Program for Inuit Beneficiaries of the James Bay and Northern Quebec Agreement for their hunting, Fishing, and Trapping Activities” created an Inuit Hunting, Fishing and Trapping Support Program (Kativik Regional Government, 2008). The province of Ontario has not invested in this type of programming, which has made communities such as Wapekeka especially vulnerable to high levels of food insecurity and dietary related diseases (Imbeault, et al., 2011). For this reason land-based foods are not the cheaper food alternative many believe them to be (INAC, 2009). What role the Federal government will play in supporting northern food development is yet to be seen, but until then Wapekeka continues to struggle putting together piecemeal funding to support their land-based food initiatives. While important strides have been made in building local food capacity, these efforts, on their own, are not enough.

### **Limitations**

The first limitation to this study is that the costs of only one hunter in one household were documented. This is followed by the limitation that animals harvested were not measured and weighed, but instead average animal sizes and edible portions were derived from secondary sources. Asking hunters and or family members to conduct these tasks is not possible without providing proper financial compensation that was not available with the funds for this project.

The discrepancy of yields between families and the variation in yield amounts from to year are considerable. Therefore further studies need to be conducted with a larger sample size and conducted over multiple years. Finally, in estimating total costs, more focus must be placed on the hunter's and food preparer's time, which was not taken into consideration in this study. If time and energy exceed what can be returned from the land, the disincentives to get on the land will be too great, even further reducing the potential impact of local food procurement as viable food strategy for northern, and rural remote indigenous communities.

### **Conclusion**

The high cost of food in NRRIs in Canada has received a great deal of attention from media and academic sources (Dyck et al. 2010; Green et al. 2003; Harowitz 2015; Judd 2016; Pal, et al., 2013; Popkin et al., 2012; 2002; Robidoux & Mason, Forthcoming; Thompson et al., 2011 Young, Young, Reading, Elias, & O'Neil, 2000; Zerehi, 2015). There are many barriers when attempting to increase access to nutritious food. An extensive amount of work and skill goes into locally procuring food and based on the data collected, it is not supplementing costs from purchasing the same types of food at the local store. However, some harvests do seem to be worth the cost compared to the store if yields are high enough. During this project these successful yields came from trips that were further away from the community and though costs are more, the yields are greater. The results of this research must be contextualized as a continuing process to better understand the cost of locally procured foods in Canada's north, and as done by Pal et al., (2013), continued efforts are necessary to gain a more comprehensive understanding of the costs associated with land-based food initiatives. Critical in all this is getting more accurate information about local yields in terms of quantities and weights of animals harvest and how much food is being consumed by local community members. The

resulting cost of accessing the returned yield is useful when creating new programs because it gives better understanding of the price points for wild foods and it can aid in the creating of preliminary budgets of new programs geared at increasing local harvesting techniques.

Acutely aware of the costs of more traditional food harvesting practices, the Wapekeka First Nation continues to explore other avenues of local food procurement. Most notably, local food champions in the community have started by creating and maintaining a local community garden. The garden was created in partnership with Nishawbe-Aski Nation (NAN) and it is now in its fifth year of production. In the spring of 2016, they planted over 250 potato seeds, carrots, beets and onions. They also ordered personal gardening kits for community members interested in harvesting their own crops. When an individual in Wapekeka wanted to start personal garden plots at their homes they were given a gardening bag, a shovel, a rake, potato, herb and beat seeds, seedling trays, fencing and permaculture soil. Another current initiative has Allan teaching the youth in community about local food procurement practices. Funding was secured by the Band in partnership with the Sioux Lookout Area Aboriginal Management Board. The disproportionate health effects faced by NRRI because of their limited access to nutritious food is significant and the challenges are abundant. Strategies to respond to these challenges must therefore be equally robust. Community champions work tirelessly to increase healthy food availability but they need support if there is going to be a real change. How this support will manifest is yet to be determined but what is certain is that simply pointing out that food costs are high in the north is not enough. Concrete actions are required and it will be interesting to see if and how investment in local food production capacity can reduce the high levels of food insecurity and dietary disease currently evidenced in northern rural remote communities.

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**PART THREE**

### **Thesis Conclusion**

The challenges to procuring food in rural and remote Indigenous communities are multi-dimensional (Dyck, Osgood, Lin, Gao & Stang, 2010; Green, Blanchard, Young & Griffith, 2003; Pal, et al., 2013; Popkin, Adair, & Ng 2012; Popkin, Lu, & Zhai. 2002; Robidoux & Mason, Forthcoming; Thompson et al., 2011). Canada, as a settler colonial state, has used tactics of elimination to assimilate Indigenous people into a ‘civilized society’ (Morgensen, 2011). The main tenants of these elimination tactics were the creation of the reserves system, the implementation of the Indian Act, and the enforcement of a church and state led education system (Carter, 1999; Churchill, 2004; Francis, 1992; Milloy, 1999; Morgensen, 2011; Wolfe, 2006). These institutions were designed to dismantle traditional practices and lifestyles of Indigenous peoples. These events have contributed to the nutrition transition and resulted in significant health disparities between Canadian settlers and Indigenous peoples (Samson and Pretty 2006).

It has been well publicized that the cost of market food in the north is so high; it is nearly impossible for working families, let alone families on social assistance, to afford to eat a health diet. Eating from the land has been cited as a more affordable and healthy alternative to eating from the store, but in reality the costs of getting on the land are making hunting and fishing prohibitive. As a result communities such as Gitxaala and Wapekeka First Nations are seeking ways to increase local food capacity and to promote the consumption of locally procured foods. These communities are not only aware that land-based food contains a higher nutritional value than food found in the market, but also that these are meaningful practices that require preservation. Participating in land-based food procurement practices generates a sense of cultural pride. Harvesters feel a sense of duty to not only feed their community but to preserve these

practices. Food procurement champions in both Gitxaala and Wapekeka maintain these initiatives because of the positive health impacts these programs are having for their people. Cultural practices and land-based knowledge have been linked to the enhancement of spiritual, mental and emotional health and has been a stepping-stone in the process of decolonization. Leaders in both communities have seen these benefits and have worked hard to increase their implementation. These initiatives are reliant on champion families, as they are the catalysts to program continuation and success. Finding ways to support these programs is essential to counter the growing dietary challenges each community is facing.

During my research process I was afforded with the irreplaceable opportunity to submerge myself in the day-to-day life of two First Nations communities that take the health and wellness of their people seriously. The time I spent in Gitxaala and Wapekeka allowed me to learn more about the importance of food access, which would not have been possible simply by reading about these issues. I witnessed firsthand, the challenges that community members face when trying to acquire their food and how each community is responding to their specific challenges. Community champions who have dedicated their lives to ensuring positive health outcomes for their nations have inspired me. Even though their efforts sometimes go unnoticed and unappreciated, they continue unabashed and undeterred; I hope that this thesis will valorize their efforts and provide the important recognition they deserve. I will be forever appreciative of how willing community members were to teach me their cultural skills, their harvesting practices and how accommodating they were in welcoming me into their community. I obtained a vast amount of knowledge about the people of Gitxaala and Wapekeka and the colonial effects that are still present in the community. I am grateful for the visits, meals and feast that I was able to have with local community members and Elders who consistently encourage the continuation of

traditional practices in the modern world. They know the numerous benefits that these practices can have for their people.

In the first article my objective was to describe the regional specific food access challenges that Gitxaala and Wapekeka face, and describe the initiatives each community has implemented in an effort to improve local access to healthy foods. My experience living in the communities provided me with a unique perspective on understanding local food procurement practices. I witnessed that community members in both Gitxaala and Wapekeka eat a combination of market and land-based food. Their food security efforts focus on promoting participation in traditional harvesting practices and the implementation of agriculture projects. I highlight to the reader that these responses are more than just initiatives aimed at increasing nutritious ways to feed people, but also foster a sense of pride and autonomy. I provided tangible examples in the article to explain what is involved in these practices—in terms of knowledge and work involved—but to also demonstrate how these practices benefit overall community health.

Article two provides a specific example of building local food capacity as strategy to address food insecurity. Working with the local harvesters in Wapekeka to track costs and yields returned over an eight-month period provided an estimate of how much traditional food costs and how these prices compared to market foods of similar energy and dietary values. The results show that food harvested from the land is comparable to store food prices. As well, the findings suggested that the further a hunter travels from the community the greater their harvest. Food costing exercises must be conducted in successive years to gain a more detailed understanding of land-based food costs because of the high variability of yields from year to year. Moreover, future research is needed to get average yield sizes and returns to understand the amount of edible food that is being yielded and the contribution these yields have on total energy intake. By

gaining a more accurate assessment of what is involved in local food procurement, it can be determined how effective and how viable local food strategies are at reducing food insecurity and the disproportionately high burden of dietary related disease.

Throughout my research, I was influenced by postcolonial theory, thinking critically about the historical trauma that has led to compromised food systems in rural remote Indigenous communities, but also about my own positioning as a non-indigenous researcher working in an Indigenous context. I had to continuously question my role as a researcher making myself aware of my position in a dominant group. I am a young, straight, white, privileged, male from a middle-class family, with an undergraduate degree from a Canadian university. During my fieldwork I learned the importance of reflexivity and how my background influences my research and volunteer work. I understand that much of the research on Indigenous people has perpetuated colonial oppression, and over the course of my research I had to contend with my own doubts about research and if I should continue with this research endeavour. After many discussions, with colleagues, friends, and teachers, Indigenous and non-indigenous, I reaffirmed my place as an ally and advocate for Indigenous rights. Though the community participants did not define their efforts in responding to food insecurity problems as steps towards decolonization, my postcolonial lens allowed me to view the research process as a way to ally myself in the decolonization process. This is justified because the efforts the community has taken for greater food autonomy fits a decolonization definition, as they are based in the land, involve cultural revitalization and include settler participation (Coulthard 2014, Hart, 2010; Kovach 2005: 2009; Smith 2001; & Sullivan 2015). I learned that my reflection on and positionality in my research makes my arguments stronger and more relevant. Following the direction of research conducted by Aveling (2013), I did not speak about what I did not know.



While volunteering and researching in the communities I was not an expert but a student whose primary task was to learn and borrow knowledge about food access challenges participants faced. I listened empathetically only speaking when necessary and always expressed gratitude and constantly volunteered my services to help in whatever way was possible. The completion of this thesis project has left me incredibly humbled and thankful but also proud of the work I have accomplished.

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## Appendix A Interview Guide

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### Section A: Background Information

In this section, I am going to ask you questions about yourself

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A1. Name: \_\_\_\_\_

A2. Age: \_\_\_\_\_

A4. How long have you resided in Gitxaala?

A5. Have you ever lived anywhere else?

If yes, where and for how long?

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### Section B: Food Culture

In this section, I am going to ask you questions about the foods that you eat.

Through these questions we are hoping to understand four main things:

- 1) What does hunting consist of in the Community (who hunts, how many, and what does it involve)
- 2) How much does hunting/fishing contribute to household/dietary intake?
- 3) How do you see hunting and fishing continuing/persisting in today's culture?
- 4) How has food procurement changed?

5) How many hunters are there here in Wakepeka?

6) What does it mean to be a hunter?

7) Do you meet this definition?

8) How is someone able to become a hunter?

Prompt: Where do they learn the skills? From whom? What Age Follow up:

A) What are some of the reasons why you think other people are not hunting in the community? Prompts: Why don't people hunt? Challenges they face? Cost, Access, Knowledge?

9) How has the way people eat changed?

Prompt: Since you were a kid?

Was the store built when you were born?

10) How often in a week would you be able to get out to harvest from the land?

Prompts: Ok in December/Fall how many times did you go out?

What did you return in December?

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- 11) How often on average do you return something back?  
Prompt: Lets say you go out 3 times this week, how many times would you bring something home?
- 12) How much does it make up of your families daily food intake?  
Prompt: Are you eating it everyday/some sort of wild food?
- 13) How realistic is it to think that this can make a significant change in the community?  
Follow up: A) Do you think get everyone could start eating off the land?  
B) Would they want to?  
C) Why do you think it can? Why don't you think it can?
- 14) What do you think needs to happen for this to be improved?  
Prompt: To increase harvest and increase food distribution?
- 15) How do you think the community can make locally procured food a regular food source for families and community members?  
Prompt: Is it possible?
- 16) How do you see a hunting and gathering survive in todays world?  
Follow up: A) Do you think everyone should everyone hunt?  
B) But the majority people don't have the means? Access to gear, knowledge around how to hunt?  
C) Should there be hunters in every household?  
D) Should only some people hunt for the community?
- 17) What are the benefits of being on the land?
-