WHOSE KNOWLEDGE MATTERS?
SHIFTING KNOWLEDGE SYSTEMS AND GENDER ROLES IN MANOOMIN (WILD RICE) REVITALIZATION IN THE GREAT LAKES

By

Marie Schaefer

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Community Sustainability – Doctor of Philosophy

2020

ABSTRACT

WHOSE KNOWLEDGE MATTERS?
SHIFTING KNOWLEDGE SYSTEMS AND GENDER ROLES IN
MANOOMIN (WILD RICE) REVITALIZATION IN THE GREAT LAKES

By

Marie Schaefer

Manoomin is an essential component to the survival and identity of the Anishinaabeg people. Manoomin, or wild rice as it is called in English, is evidence of the fulfillment of the migration prophecies of the Anishinaabeg. However, Anishinaabeg capacities to subsist from manoomin have diminished greatly in the Great Lakes region due to multiple factors including dams and logging for the timber industry, forced removal to reservations, loss of knowledge due to boarding schools, the need for wage labor, commodification of wild rice, and the breakdown of kinship and gender systems (Child 2012 and Noorgard 2014). Even with these circumstances and the challenges they pose many Anishinaabeg are engaged in the restoration of wild rice habitats and the revitalization of the cultural practices and knowledge systems that are part of ricing. However, while the literature presents wild rice revitalization as the restoration of a "traditional" system of ricing, it is often missed that today's ricing efforts are very different than what occurred historically. In fact, in certain areas, scholarly critics have pointed out that ricing is now a masculine activity where it was not previously (Child 2012 and Noorgard 2014), or that certain rice stories actually emanate from Anishinaabeg commercial ricing, and not the historical seasonal round (Noorgard 2014), or that most ricing programs are managed by the governments of federally-recognized Tribes whose structures differ drastically

from the management regimes that would have governed ricing historically (Bureau of Indian Affairs 2014).

Through three articles this dissertation shows: 1) the impacts of settler colonialism on manoomin in the Great Lakes including how manoomin became a commodity grown on a farm outside of the Great Lakes, 2) how the shifts in gender roles are impacting a group of Indigenous women today and how those women created a regenerative space called the Indigenous Women's Manoomin Collective that wrote Article 2 of the dissertation as a Collective. The members of the Collective are seven Indigenous women from across the Great Lakes in both the United States and Canada. 3) Through a systematic analysis of newspapers in the Great Lakes in Canada and the US that show the shifts that are occurring in systems of knowledge with Indigenous and scientific knowledge systems for people that are participating in manoomin restoration projects and the silencing of Indigenous women experts in those roles.

This dissertation is dedicated to manoomin that plant relative for guiding me on an adventure I never expected through time and space.

This dissertation is also dedicated to the other members of the Indigenous Women's Manoomin Collective (Sherry Copenace, Aimée Craft, Simone Senogles, Jennifer Gauthier, Jennifer Ballinger, and Allison Smart) miigwech for making this more than a dissertation and for being my other dissertation advisory committee. I cannot wait to see what we do in the future!

I want to also dedicate this to every supporting partner and family member and ancestor out there of a PhD or graduate student. As graduate students we do not do this work alone. I would not be where I am without the support of my partner, Pete Gregg, and my family.

I would also like to dedicate this to my parents. My father, Jim Schaefer, passed while I was writing the dissertation. He was able to come to my dissertation proposal defense but not the final defense. Education was always very important to him and I know that he would have loved to see me complete this. I dedicate this to his own dream of a PhD and his dreams for his children. My Mom, Karen, always showed me how to get through the hard times no matter what is thrown at me. Your strength and humor is what has helped our family gotten through many things. Thank you.

ACKNOWLEDGEMENTS

I want to acknowledge my partner Pete Gregg. He truly has gotten a PhD right alongside me not only in Community Sustainability but also in how to survive your partner's PhD. The coursework included: how to make your partner laugh when they are crying, how to survive the comprehensive process when with your relationship intact, dissertation defense Zoom cat wrangler during a pandemic and a million small and large things. Pete you have been an amazing source of strength and love throughout this journey! Thank you!

I also want to acknowledge my advisor Dr. Kyle Powys Whyte without whom I would not be graduating. He is not only an amazing scholar but also is truly an amazing mentor. Miigwech for choosing to take the time to teach me a million lessons on everything from how to write an academic paper to how to fight for students to how to change the world. I will always keep your lessons close to my heart and I hope to teach those lessons to others…with humor because that was always another lesson that I learned.

Thank you to my dissertation committee both past and present: Estrella Torrez, Shari Dann, Julie Libarkin, and Wenona Singel. You each have been amazing guides on this journey. Thank you to each member of the Indigenous Graduate Student Collective (IGSC) that was formed during my first year at Michigan State University. IGSC and the American Indian Studies Program have been a home away from home for me. Miigwech Dylan Miner for working so hard to keep AIIS an amazing place and for being not only an amazing artist and scholar but a great boss.

Thank you to my family for being understanding and giving me the support to accomplish this. Thank you to my brothers, sisters-in-laws, nieces, and nephews. It meant more than words can say to have your support.

There is also a group of essential friends that I was blessed that I could call on at a drop of a hat that I want to acknowledge: Future Dr. Wendy Dorman, Dr. in Life and Common Sense Jennifer Gauthier, Dr. Carla Dhillon, BFF Writing Group (Dr. Lillie Williamson, Dr. Rocío Mendoza, Soon to be Dr. Elena Costello, Dr. Rashda Likely), AnthroRogue Squad 8 (Dr. Kehli Henry, Dr. Ying-Jen Le, Soon to Be Dr. Brian Geyer, Dr. of Art and Friendship Meenakshi Narayan, Soon to be Dr. Nikki Klarmann, Dr. Sabrina Pearlman, Soon to Be Dr. Eddie Glayzer). Your encouragement was essential in seeing me through many difficult times.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Introduction

Wild rice has been an essential component to the survival and identity of the Anishinaabeg people of the Great Lakes and figured prominently in our 13 moons seasonal round (Child 2012, Noorgard 2014, Stiles et. al. 2010, Vennum 1988). Wild rice is evidence of the fulfillment of our migration prophecies. The Anishinaabeg prophecies told us to travel westward from the northeastern corner of what is now the United States "to the place where food grows on water". When we reached the Great Lakes region, we found wild rice, or manoomin (the good berry), as it is called in Anishinaabemowin the language of the Anishinaabeg. Manoomin's contemporary significance can be seen in that it is still used in ceremonies and feasts and is still one of our staple foods like maple syrup. Manoomin is used in a wide range of dishes including soups and casseroles. Yet Anishinaabeg capacities to subsist from wild rice have diminished greatly in the Great Lakes region due to multiple factors including a loss of habitat from dams and logging for the timber industry, loss of knowledge due to forced removal to reservations, boarding schools, the need for wage labor and the breakdown of kinship and gender systems (Child 2012 and Noorgard 2014). Habitat loss has led there to being only about a dozen places in Michigan for example where you can get a harvest that could feed a family for a year. The need for wage labor instead of subsistence economy is a constant pressure for many Anishinaabeg who previously would have been found in seasonal wild rice camps in August and early September but now are found in jobs that can take them far away from the rivers and lakes that are the home of manoomin. However, even with these challenges, Anishinaabe are finding creative ways diversify our economy without compromising our values.

Research Questions

To better contextualize these tensions, I conducted a dissertation project, in collaboration with the Indigenous Women's Manoomin Collective (for question 2), based on the following questions:

1. What sources and systems of knowledge (e.g. Indigenous knowledges, western scientific knowledges, Indigenous women's knowledges) do people participating in Anishinaabe wild rice restoration initiatives use as authoritative guides for their restoration strategies?

a. Are privileged sources and systems of knowledge correlated with how gender relations operate within these initiatives?

2. How are Indigenous women in the places where manoomin grows creating regenerative spaces where they identify and work on gender-based challenges they are experiencing in wild rice restoration work?

a. Can a collective, consisting of Indigenous women from where manoomin grows, yield insights into the previous two questions (question 1 and question 1a)?

These research questions were chosen through an extensive academic literature review and through conversations with the Indigenous Women's Manoomin Collective over the years in places where manoomin grows. (More details on how each of these research questions where chosen are given in each of the individual Articles below.)

Methods

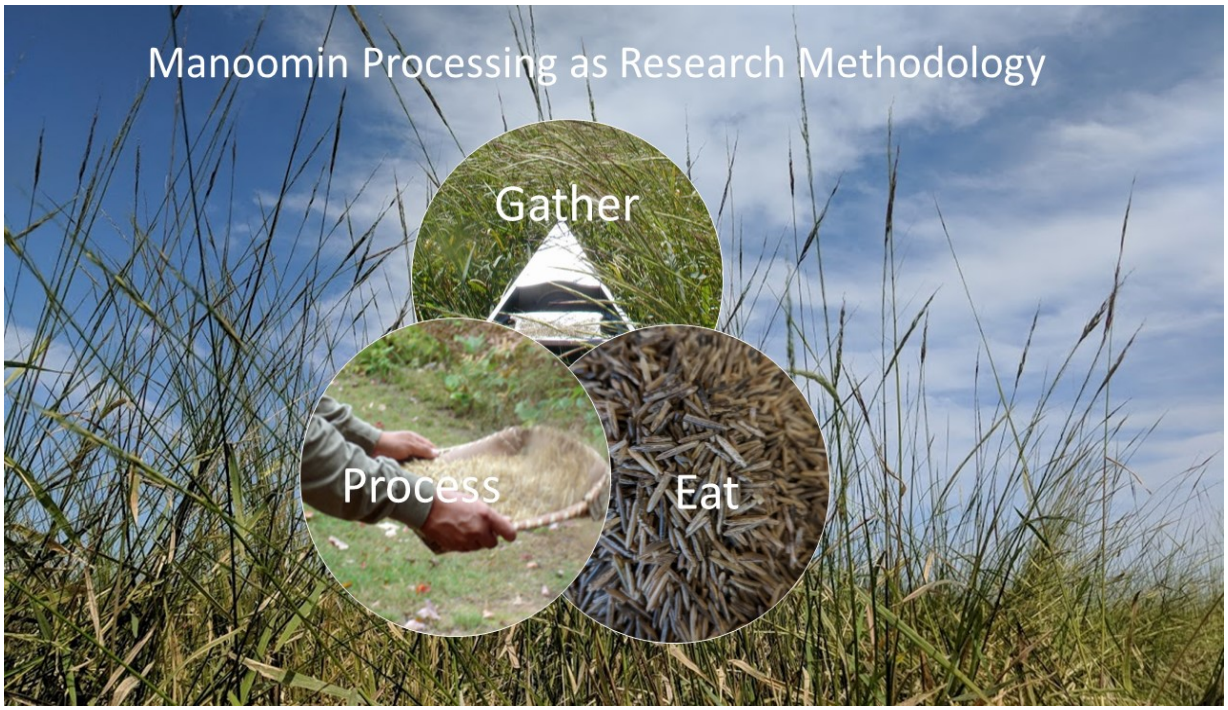
Throughout the dissertation research process, I used the steps that manoomin goes through to be harvested and processed as my overall organizing methodology. The first step is gathering or harvesting the rice in a canoe, then parching, dancing, winnowing and finally picking larger pieces from smaller pieces by hand.

Figure 1: How to process manoomin

The three major steps of the manoomin research methodology is: 1) gathering and drying 2) processing and 2) eating. Step 1 or gathering is the harvesting or gathering of the "data". This includes building relationships with human and nonhuman relatives. Research questions and design should be done in close collaboration from the beginning with the communities that you

are working with. Step 2 is processing or analyzing of the qualitative or quantitative data and maintaining relationships and trust. Step 3 is eating or making sure the communities you work with benefit from the research you work with.

Figure 2: Manoomin Processing as Research Methodology



Within the manoomin methodology, the dissertation uses two main methods and sources of data to address the above outlined research questions. The first source of data came from a systematic analysis (Borrego et. al. 2014) of a manoomin newspaper articles from the United States and Canada. A systematic analysis was utilized here for its ability to analyze a great amount of written word in a short amount of time, therefore giving a research project such as this dissertation a wide base of data from which to work from. The second source of inquiry will come from the Indigenous Women's Manoomin Collective including three Gatherings (January 2019,

May 2019, and October 2019) with members of the group. These members are a collective of seven Indigenous women from across the Great Lakes in both the United States and Canada. The Collective has some of the characteristics of participatory-action research. However, we use a distantly Indigenous research methodology including Indigenous standpoint approach (Moreton-Robinson 2000) that it is not only consisting of and run by Indigenous women but also builds its foundation from a place where we are building reciprocal relationships with one another.

Format of Dissertation – Three Article Dissertation

This dissertation is a three-article dissertation with an introduction that gave an overview of the research questions and unique manoomin research methodology used and a conclusion that reflected on the dissertation as a whole. Each of the three articles answered a different research question with the first article giving a historical background on issues related to settler colonialism and manoomin. Specifically, Article 1, explores what the impacts of settler colonialism is on manoomin in the Great Lakes by examining three key turning points in the commodification of manoomin. Article 2, examines what systems of knowledge (i.e. Indigenous knowledges, scientific knowledges) the general public uses when talking about wild rice through a systematic analysis of newspapers in the Great Lakes region. Article 3 was written together with the Indigenous Women's Collective reflecting on how on research question 3 and specifically the reasons why Indigenous women's voices seem to be ignored in spaces where manoomin is being revitalized which is why we created a space where we could support ourselves in the work we do in our communities.

Article 1: The Impacts of Settler Colonialism on Manoomin (wild rice) in the U.S. and Canada

As I walk through the aisles of a grocery store in East Lansing, Michigan I continue to frantically search for manoomin or wild rice. I am hosting Indigenous graduate students and faculty at my house for a feast tonight and I just realized that I'm out of the key ingredient for the feature of the feast – manoomin or wild rice. "Why do I keep doing this to myself?" I think to myself. As I search another aisle. As a PhD student at Michigan State University, it seems like I am always running behind or rushing to complete a million tasks. If I had looked at how much manoomin I had earlier in the week I would have been able to order some online from my normal supplier and not be rushing to a store when I should be at home cleaning and setting up for the feast. After searching many aisles unsuccessfully, I turn the corner on the last aisle and finally see an employee. I rush over to the employee. "Hi, do you know where I can find wild rice?" I ask. "Ummm. Let me check the bulk food section" He says. Of course, that is the only section that I haven't checked yet. We walk over to the bulk food section and I frantically search for the dark grass in any of the binds. "Here's some!" The employee tells me. "Yay!", I exclaim, as I walk down the aisle to where he is and look at the label for the rice. "Oh, that's farm rice grown in California. That's not actual wild rice grown on a lake or river. I need actual wild rice." I tell him. At this point I'm a mix of volatile emotions. I'm both angry and sad that the only "wild" rice that we find is one that has been taken out of its home in the Great Lakes, modified to be grown in a completely different habitat so that farmers can get a dependable harvest. Many Anishinaabe I know wouldn't even call this manoomin. I can't host a feast with Indigenous peoples with this non-wild rice. I really want to ask the store employee, "Who orders your bulk food? Is there someone I could talk to about ordering actual wild rice?". But I don't have time. I'll have to come

back another day and try to get them to order actual manoomin. I thank the employee and leave to continue on to the next grocery store on what is turning into a futile mission for manoomin from a river or lake from the Great Lakes.

Introduction

One of the quickest and most heart-breaking ways to see how settler colonialism has affected a landscape is to try to find Indigenous foods that used to be everywhere on that land. The rivers and lakes of Michigan used to be filled with Anishinaabekwe (Anishinaabe women) leading wild rice harvests during late August and early September. However, now there are few places in Michigan that you can find it and fewer yet that you can get enough of a harvest that could sustain your family for the year.

Manoomin is an essential component to the survival and identity of the Anishinaabe people. Manoomin, or wild rice as it is called in English, is evidence of the fulfillment of the migration prophecies of the Anishinaabe. The Anishinaabe prophecies told our ancestors to travel westward from the northeastern corner of what is now the United States "to the place where food grows on water" (Benton-Banai 1979). When they reached the Great Lakes region of what is now the states of Michigan, Wisconsin, Minnesota and the Canadian provinces of Ontario, Manitoba, they found that food in the form of manoomin.

Manoomin figures prominently in the Anishinaabe 13 moons seasonal round (Child 2012, Noorgard 2014, Stiles 2010, Vennum 1988). Each of the 13 moons refers to the 13 Anishinnabe cycles of the moon that occur throughout the year. During the year, Anishinaabe would migrate to different ecosystems depending on what plant or animal relative would be

ready to be harvested at that time. As they migrated for their seasonal rounds their forms of governance changed with different leaders for different harvests. The names of the different moons in Anishinaabemowin (the language of the Anishinaabe) describes what should be harvested during that month. August is Minoomini Giizis or manoomin moon and that is the month that manoomin should be harvested. Anishinaabe migrated both to the Great Lakes region and then annually in the seasonal rounds. After migrating to the Great Lakes, manoomin became a staple part of the Anishinaabe diet as well as playing a key role at ceremonies such as naming ceremonies Many times, it is given babies as their first solid food and is also given to elders as their last food.

Many Anishinaabe in Michigan, that are able to be active in participating in their communities, now encounter wild rice in the form of one or two day Tribally hosted wild rice camps or as food at feasts or powwows. At wild rice camps participants learn how to harvest, process and reseed the wild rice as well as participate in ceremonies surrounding the rice. The camps in Michigan usually start with a prayer and an offering of *sayma* or tobacco. Then participants use canoes to harvest the rice. Two people at a time go out in a canoe. One person stands up and pushes the canoe slowly through the wild rice with long cedar poles like a gondolier in Venice, Italy. While the other person sits holding two sticks, one to pull the wild rice into the canoe and the other to knock against the first stick to knock the rice into the bottom of the canoe that has been covered in a tarp. Once the tarp is full the canoe is taken back to the camp area and given to those people who will be working to get the wild rice out of its hull. The first step is to heat the wild rice up, then someone with moccasins dances or jiggs on it in a shallow dirt pit where the warmed manoomin is placed. This is how the outer hulls is

rubbed off, then it is winnowed or thrown up in the air and finally picking through with tweezers or by hand to find the hulls that are still there or broken pieces of rice and putting them in separate bowl.

It is during the wild rice camp that elders pass on their knowledge to the next generation. Without rice camps and the time and space they give to pass on knowledge, Anishinaabe believe their culture breaks down and there is a loss of identity. At a wild rice workshop, I attended in 2013, Roger LaBine, from the Lac Vieux Desert Tribe, explained that "one of the greatest gifts at rice camp is the bonding that happens between people. It happens every year" (Personal communication 2013). As well, at previous workshops Roger has spoken about the importance of wild rice to Anishinaabe identity when he said, "wild rice is part of the identity of our people, very much like our language, it is how we came to be located on this spot of Mother Earth". White Earth tribal member Joe LaGarde from Minnesota agrees and summed up how many Michigan Anishinaabe have described their relationship to manoomin when he said, "we stand to lose everything. If we lose our rice, we won't exist as a people for long" (LaDuke 2007).

Anishinaabe capacities to subsist from wild rice have diminished greatly in the Great Lakes region due to multiple factors that the disappearances and dilemmas settler colonialism (Whyte 2016) brought including dams and logging for the timber industry, forced removal to reservations, loss of knowledge due to boarding schools, the need for wage labor, the breakdown of kinship systems and shifting gender roles (Child 2012 and Noorgard 2014). As manoomin is an essential part of Anishinaabe identity (LaDuke 2017), even with these circumstances and the challenges they pose many Anishinaabe are engaged in the restoration

of wild rice habitats and the revitalization of the cultural practices and knowledge systems that are part of ricing.

In this paper, I will explore the question: what are the impacts of settler colonialism on manoomin (wild rice) in the Great Lakes region of North America? I will do this by examining two major impacts of settler colonialism on manoomin: 1) how wild rice became a commodity grown outside of the Great Lakes and 2) the shift in gender roles that occurred due to settler colonialism's creation of wild rice as a commodity. Although other scholars such as Raster and Hill (2016) have explored the history of commodification of manoomin, no one has provided a scholarly overview of the historical events telling the story of how manoomin was commodified. By commodity I mean the transformation of manoomin into an item that can be bought and sold and the introduction of a commercial relationship, by settler colonialism, to those relationships between Anishinaabeg and manoomin (Wright 2000). By bought and sold, I would also add that such transactions occur within the cultural, economic, and political frameworks of the U.S. and Canada. As a result, commodification represents an overtaking of Anishinaabe cultural, economic, and political frameworks for relating to manoomin.

Settler Colonialism

What are the impacts of settler colonialism on manoomin in the Great Lakes? Settler colonialism is fundamentally a system of erasure that seeks to erase Indigenous peoples including their food sovereignty and gender roles from their own homelands (Meissner and Whyte 2017, Whyte 2016). By erasure, I mean a type of oppression where the colonizers or settlers remove Indigenous peoples from their lands through the erasure of not only the actual people but also the removal of the history and any other traces of Indigenous peoples on the

land (Meissner and Whyte 2017). Settler colonialism is a type of colonialism that is done with the main purpose for settlers to create their own homelands on Indigenous lands (Tuck and Yang 2012)[1].Settler colonialism is able to facilitate the removal of Indigenous peoples their food sovereignty and gender roles through two main ways: 1) disappearances and 2) dilemmas (Whyte 2016). Disappearances, according to (Whyte 2016),"are direct productions of ignorance that render Indigenous peoples invisible in their own homelands" and therefore disrupts Indigenous peoples relationship with the land and with plant relatives like manoomin (Tuck and Yang 2012). This type of oppression can be seen when looking at the United States public school curriculum and how it either excludes lessons on Indigenous peoples or has discriminatory materials regarding Indigenous peoples (Whyte 2016).

The other major way settler colonialism operates is through dilemmas. "Dilemmas involve impositions on the choices of Indigenous peoples in which each decision will produce erasure" (Whyte 2016: 13). This type of erasure can be seen when looking at the policy on federally recognized Tribes in the U.S. Tribes can become federally recognized only when they go through a process where they create a form of government that the U.S. will recognize but these forms of governance are not necessarily based on ones the Tribe already has. This creates a dilemma where Tribes many times need the resources that being federally recognized will give them but if they changed their form of government in order to become federally recognized there can be detrimental effects for their people (Whyte 2016).

Dilemmas can be seen in how settler colonialism changed gender roles around

[1] I recognize that there is a large literature on settler colonialism however for the purposes of this dissertation I am only referencing select examples of that literature.

manoomin where in some Anishinaabe communities in the U.S. if you needed to get your rice sold during the Great Depression to a settler you used a man to sell it (Child 2012). Before the 1930s Great Depression in the U.S., Anishinaabekwe lead the manoomin economy. Due to the interference of state and federal government through such programs as a state sponsored wild rice camp at White Earth Nation (Child 2012) those gender roles changed. In other words, settlers in the form of state and federal work programs created a settler colonial dilemma for Anishinaabe men. They could continue to struggle, or they could participate in the work programs that did not recognize who were the leaders of the manoomin economy which had the consequences of changing gender roles eventually.

Impacts of Settler Colonialism on Manoomin (wild rice) in the Great Lakes

The impacts of settler colonialism on manoomin are widespread in the Great Lakes. Due to settler colonialism, manoomin was commodified, gender roles have shifted from a more fluid construction of gender to a more patriarchal one (Child 2012 and Norrgard 2014), and manoomin has disappeared from many habitats where it used to grow. One of the most effective tools that settler colonialism used in relation to manoomin was the commodification of manoomin**.** However, Indigenous peoples throughout the Great Lakes are working on revitalizing manoomin. The revitalization of manoomin and the knowledge systems surrounding manoomin is an example of an Indigenous food sovereignty strategy (Whyte 2017) used by Anishinaabeg to adapt and mitigate the damage done by settler colonialism.

History of Commodification of Manoomin in the Great Lakes

The commodification of wild rice is an example of the disappearances and dilemmas that occur with settler colonialism (Whyte 2017). Wild rice has almost completely disappeared from Michigan where it used to be found in many rivers and lakes. Now Anishinaabe from Michigan have the dilemma of needing to go to neighboring states to find manoomin or eating wild rice that is not "wild" anymore in that it is grown in a paddy on a settler owned farm located most likely in California and not found in a river or lake.

This paper will use the frameworks of settler colonialism (Whyte 2017) and food sovereignty (Whyte 2017) to take a comprehensive examination of each of those steps of commodification and organize each of them around three key turning points in the commodification of manoomin. These three steps are: turning point 1) wild rice being grown on a farm in Minnesota for the first time, turning point 2) involvement of the University of Minnesota especially when it created shatter- resistant varieties of wild rice and genetically mapped the wild rice genome, turning point 3) wild rice being grown on farms in California. Then this paper will examine how Anishinaabe gender roles were affected by this commodification process.

The frameworks of Indigenous food sovereignty and settler colonialism will be used. Indigenous food sovereignty acts as a strategy for responding to settler colonialism as it assists Indigenous peoples in the U.S. and Canada in responding to the dilemmas and disappearances of settler colonialism. One of the major ways food sovereignty can respond to the disappearances aspects of colonialism is through the centering of Indigenous ways of understanding food systems. These ways are no longer erased from the land but instead are

featured. As well, one of the ways food sovereignty can respond to the dilemmas of settler colonialism is to center the reciprocal Indigenous relationships to land and nonhuman relatives. When this type of relationship is the center of food sovereignty, Indigenous peoples do not have to choose between their responsibilities to their nonhuman relatives and participating in such things that are detrimental to their nonhuman relatives such as extractive energy projects in order to get enough money for food to survive.

Fertilizing the Paddy: Government involvement in the creation of the conditions that allowed for the commodification of manoomin

The conditions for settler colonialism in relation to commodification were created very early on. The need for the "modernization" of wild rice harvesting is a constant theme in wild rice reports from state officials and researchers in both the United States and Canada during the late 18th and early 19th centuries. It was thought by settlers on both sides of the U.S. and Canadian border that the way the Anishinaabe depended on "natural processes" to harvest wild rice was "primitive" and "incompatible with modern agricultural production" (Child 2012: 180). During the 1920s, U.S. Department of Agriculture agent Charles E. Chambliss called for the modernization of the wild rice harvest through "the entry of non-Indian participants who would cultivate the wild grain, not just rely on natural processes, and who would employ machinery rather than obsolete knocking sticks to gather the rice" (Child 2012: 180). Ironically, as further explored below, mechanical harvesting would become illegal in 1939 in Minnesota and throughout the Great Lakes due to its destruction of the ecosystem.

The U.S. federal government and the State of Minnesota's interest in manoomin grew in the 1930s. This can be seen in that the Civilian Conservation Corps (CCC) Indian division in the

1930s “engaged in extensive lake re-seeding in the Great Lakes region” (Hayes et. al. 1989: 204). The CCC, also called the Emergency Conservation Work, was a program created by U.S. President Franklin Roosevelt in his first 100 days of office to create employment opportunities through federally funded work programs during the Great Depression in the U.S. (White 2016). The Bureau of Indian Affairs had its own CCC Division during the 1930s that “employed thousands of Native Americans” for conservation projects on reservations especially in the west (White 2016). As well, this interest can be seen in state funded rice camps such as the “Indian Public Wild Rice Camp” on the White Earth Nation in the 1930s that was a collaboration with the U.S. Indian Service (Child 2012: 113). The Minnesota State Forest Service used five acres of nontribal land near the Rice River for the camp. It employed only Anishinaabe men and not women to harvest wild rice as part of program that they hoped to reinvigorate the depressed economy of the reservation (Child 2012). It was ironic that after decades of trying to destroy the Anishinaabe manoomin habitat and subsistence economy the state of Minnesota in the 1930s it stopped it’s active settler colonialism and tried new forms of settler colonialism in the form of commodification of manoomin.

Key Turning Point 1: Wild Rice Grown on a Farm in Minnesota for the First Time

Prior to the 1950s, manoomin could only be found in the rivers and lakes of what is now the states of Michigan, Wisconsin, Minnesota, and North Dakota and the Canadian provinces of Ontario and Manitoba. It did not grow on farms. Before being growing on a farm in Minnesota, manoomin caught the imaginations of Europeans and they tried their own hand at cultivating it for commodification. In Europe, in the late 1600s-1800s are filled with stories of missionaries, botanists, and others coming across it in lakes or buying or bartering for it (Zilberstein 2015). In

1681, Jesuit missionary, Jacque Marquette, published the earliest descriptions of wild rice's habitat as "a kind of grass that grows naturally in the bottom of the mud in small rivers and in marshy places" (Zilberstein 133: 2015). In John Mitchell's 1767 essay *The Present State of Great Britain and North America* there is some of the first published writings from Europe about creating wild rice as a commodity that would allow the settlers to not be dependent on imports (Ziberstein 2015). In his essay Mitchell inserted a footnote regarding wild rice that said, "once improved for commercial cultivation…wild rice would also provide a unique commodity for the imperial trade, one that would not interfere with the mother country's own produce. If wild rice were "duly cultivated" like white rice, Britain "might have rice from our northern as well as our southern colonies" (Zilbertstein 2015: 129). In a lecture to the Horticultural Society of London in 1805, Sir Joseph Banks described how wild rice from Canada could possibly be cultivated to endure the climates of both England and its colonies (Zilberstein 2015). Banks had been interested in wild rice's possibilities for adaptation to different climates since the 1770s (Zilberstein 2015). The irony [need a better word] is that wild rice has been shown now to be affected by impacts of issues related to climate change such as water levels (Lynn et. al. 2013).

Into this background of Europeans trying to cultivate wild rice, Euro-American settlers to the Great Lakes had been exploring the possibilities of growing wild rice on a farm in the U.S. since at least 1828 (Aiken et. al. 1988). In 1852 Joseph Bowron from Wisconsin suggested that wild rice be grown on a farm (Oelke et. al. 1982). Then a year later in 1853, Oliver H. Kelley of Minnesota also suggested that wild rice be grown as a field crop (Oelke et. al. n.d.).

The first cultivated or farm raised wild rice was grown in Minnesota in 1950. That year, farmers James and Gerald Godward started producing cultivated wild rice using seeds from

natural wild rice in a “one-acre diked, flooded field (paddy) at Bass Lake near Merrifield, Minnesota” (USDA 1996 and Oelke et. al. n.d.). Eight years later, in 1958, James and Gerald Godward’s one-acre of cultivated wild rice had grown to 120 acres (Oelke et. al. n.d.). This paddy rice still shattered and fell into the water when it ripened therefore “losing” some of the harvest according to the farmers. This was not a problem to Anishinaabe as this was part of the natural reseeding process for manoomin. However, the settlers saw this as a major challenge to domesticating wild rice and making it a commodity as in their minds they could not get a dependable harvest every year. Soon after this University of Minnesota researchers actively became involved in working on this “problem”.

Key Turning Point 2: Involvement of University of Minnesota

The University of Minnesota had some interest at commodifying manoomin since at least 1918 as shown in Beatrice Larson’s University of Minnesota Master’s thesis on “The Embryology of Zizania palustris L.” which starts with the sentence “Zizania palustris is a wild plant of great economic value” (1). The university’s interest in commodification, was brought to a head in January 1951 when a conference was held at the University of Minnesota to: “review the potentials and problems associated with human use of wild rice” (Pearson 1997: 510). The conference was attended by “23 botanists and other specialists” who “created an agenda for the development of the wild rice agricultural industry” (Pearson 1997: 510). The agenda for the conference included 12 items including an “investigation of methods of cultivation after the pattern of domestic [white] rice” and a discussion on mechanical harvesting of natural stands (Pearson 1997: 511). As soon as settler harvesters saw they could make a profit from wild rice they started using mechanical harvesters and broad boats in natural stands (Hayes et. al. 1989).

The discussion at the conference regarding mechanical harvesting centered around the difficultly of wild rice stands to regenerate when mechanically harvested (Pearson 1997). The impacts of mechanical harvesting on wild rice stands was being felt throughout the Great Lakes as a result, mechanical harvesting was made illegal in Minnesota in 1939 and then it was made illegal in Manitoba, Ontario, and Wisconsin shortly thereafter and the focus of how to grow a wild rice commodity crop went from rivers and lakes to farms (Pearson 1997, Hayes et. al. 1989).

The hardest issue the farmers and University of Minnesota researchers had to overcome in order to get a dependable wild rice crop on a paddy farm was the issue of seed shattering. According to Hayes, et. al. (1989), "seed shattering, even more than brown spot epidemics, caused the most obvious and consistent annual economic losses in the incipient wild rice agroecosystems, and deliberate selection for shattering resistance initiated the plant breeding efforts" (208). As a result, the 1950s also saw the creation of shatter-resistance varieties of wild rice by University of Minnesota researcher Ervin Oelke which made growing wild rice on farms profitable (LaDuke 2007). In 1968, Oelke used the germ plasm he collected from the 1837 treaty area in the Great Lakes in the U.S. to start creating the first strand, which was called, the Johnson strand (LaDuke 2007, Hayes et. al. 1989). Throughout the 1970s and into the 2000s many more strands followed. The Manomin 1 (M1) strand followed in 1970, then the M2 in 1972, M3 in 1974, Netum in 1978, Voyager in 1983, Meter in 1985, Franklin in 1992, and Purple Petrowski in 2000 (LaDuke 2007).

Before these shatter-resistance varieties, 100 lbs. of wild rice an acre was considered a good harvest (Edamann 1969: 3). The shatter-resistance varieties can have a harvest of 1,500 to

2,000 lbs. per acre by preventing wild rice from falling into the water when it ripens (Edamann 1969: 3). The introduction of shatter-resistant variety of wild rice and the introduction of a variety of wild rice that can be grown on a farm allowed wild rice to be turned into an agricultural commodity that is grown far away from the Great Lakes. “Production in Minnesota increased from 900 acres in 1968 to 18,000 acres in 1973. Most wild rice from natural stands was harvested by hand prior to this time using the traditional canoe-and-flail method.” (Oelke et. al. n.d.)

Tools of Settler Colonialism: Corporations and State Legislature

Corporations and state governments were also key actors in the creation of a market for wild rice as they worked with different forms of governments. Uncle Ben’s, Inc. was a major contributor to the commodification of wild rice. In the early 1960s, Uncle Ben’s created a wild rice and rice blend (Wincell and Dahl 1984). However, in 1965, there was a “routine failure in the harvest of hand-harvested wild rice” and Uncle Ben’s Inc. bought an estimated 80 percent of the world supply (Winchell and Dahl 1984: 6).. Uncle Ben’s Inc. saw that there was a market for a dependable cultivated wild rice. As a result, in 1967, the company contract with two farmers in Minnesota for 900 acres of cultivated wild rice as well as funding scientists to develop cultivated wild rice (Pearson 1997, Wincell and Dahl 1984). Uncle Ben’s also hired an agronomist to work with the two farmers on growing the cultivated wild rice (Wincell and Dahl 1984). Seeing the success of this new cultivated crop, the Minnesota state legislature stepped in 1969 and 1971, and provided funding for cultivated wild rice research by the University of Minnesota’s Agricultural Experiment Station (Wincell and Dahl 1984). By 1969, most paddy rice that was grown went to Uncle Ben’s, Inc. which the company put in its highly commercially

successful wild rice mix and sold on a national level (Edamann 1969). This provided the farmers with a dependable and national market for their product (USDA 1996). By 1972 cultivated wild rice was a key Minnesota state commodity and by 1977 wild rice became adopted by the Minnesota state grain in 1977 (Pearson 1997).

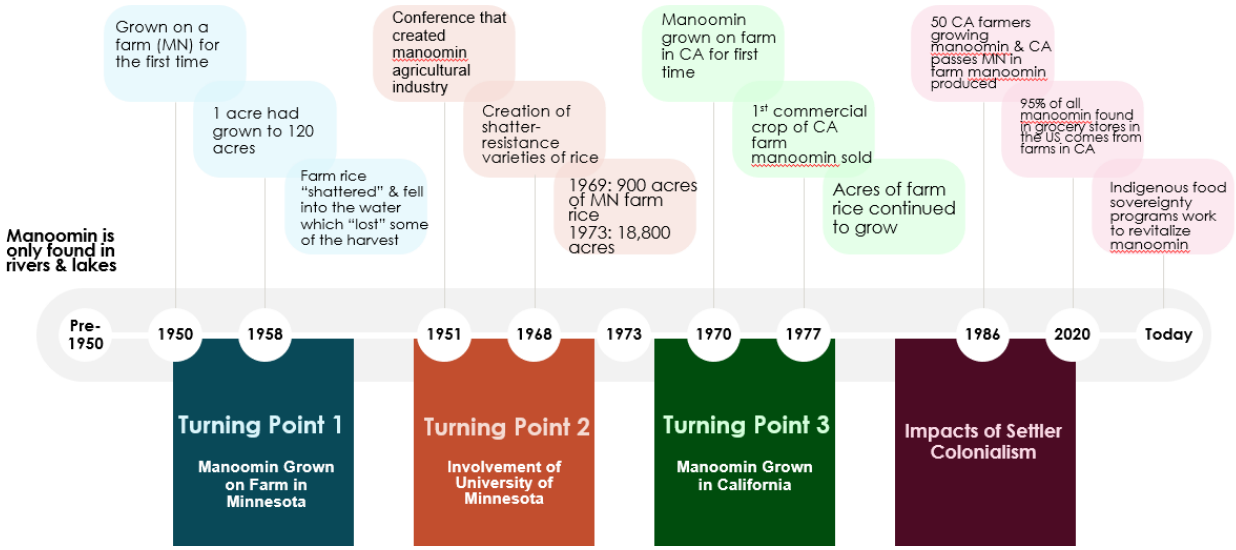
Key Turning Point 3 – Wild Rice Grown in California For the First Time

One of the most essential turning points in the commodification of wild rice was when it was taken from the rivers and lakes of the Great Lakes and grown on farms in California. Wild rice from the Great Lakes reached California in 1970 when Vince Vanderford, a regular rice farmer from California, planted Minnesota wild rice seeds on his farm in Yuba City (Karp 1999). Vanderford got access to the Great Lakes wild rice through a friend who brought him two coolers of wild rice seed from Minnesota (Karp 1999). Apparently, word had reached California farmers of the success that Minnesota farmers had in turning wild rice into a commodity in Minnesota and Vanderford was interested in seeing if he could make a profit growing it in California. Little did anyone know at the time that this would be one of the key turning points in the story of the commodification of manoomin.

That first year of planting in California, Vanderford had the same problem that those farmers in Minnesota had when they first planted river and lake rice on a farm in 1950 in that the seed also shattered (Karp 1999). Vanderford and his partners kept the seed that stuck to the stalk each year and each year got better returns. By 1975, the fifth year of manoomin being grown outside of its homelands of the Great Lakes, Vanderford was getting enough of a crop to see that growing wild rice on his farm would be commercially viable (Karp 1999). In 1977, the first commercial crop was sold in California by Vanderford and his partners (Karp 1999). When

other California farmers saw that wild rice could be extremely profitable, they jumped at the opportunity to plant the grain.

Figure 3: Timeline of The Commodification of Manoomin



Canada

Manoomin does not recognize the political border between the U.S. and Canada. It also grows in what is now known as Canada. Unlike in the United States, most of the wild rice production in Canada is still from natural stands that are on rivers and lakes leased from the government and not on paddies on farms (Oelke et. al. n.d.). However, just like in the U.S., the 1930s were also a turning point for the commodification of manoomin in Canada. It was during this time that "businessmen were purchasing processed rice from Aboriginal communities for sale to interested buyers" (Avery and Pawlick 1979).

In addition, while universities, states, and corporations were and are the major agents of settler colonialism in the U.S., the federal government's agencies in Canada are the major

agents of settler colonialism. This is shown in the Wild Rice Harvesting Act that passed in 1960 that gave authority to the Department of Lands and Forests to manage harvesting of manoomin. The following year the act was revised to give Indigenous peoples harvesting rights through the creation of 10 block areas but with oversight by the federal government (DeLisle 2001).

Impacts of Commodification on Anishinaabeg Gender

Beyond the three key turning points in the history of the commodification of the other area that was impacted by the commodification of manoomin was Anishinaabeg gender roles. In many Anishinaabeg communities before settler colonialism occurred, women were generally responsible for harvesting wild rice while the men were generally responsible for hunting however in many communities' gender systems were fluid and women would also engage in hunting and men could engage in wild ricing (Norragard 2014, Raster-Hill 2016, Meissner and Whyte 2017). As one of only a very few scholars to write about shifting gender roles and wild rice especially, Child (2012) argues that at rice camp "Ojibwe women constructed an extraordinary legal framework and an orderly system of ecological guardianship to manage the wild rice economy" (103). Specifically, women lead the rice camp including determining the correct time to harvest and which individuals harvested plants (Child 2012). This type of gender system "positioned men and women differently as stewards of key environmental resources with gendered knowledge as well as gendered connections to the landscape – but also admitted of fluidities that are impermissible in some more rigid gender systems" that came with settler colonialism (Meissner and Whyte 2017: 4).

Through introduction of the disappearances and dilemmas of settler colonialism (Whyte

2017) during the fur trade era, gender roles around manoomin harvesting started to shift however Anishinaabekwe during this time always found ways to adapt to changing times as their labor in the manoomin seasonal economy was essential to the survival of their families (Child 2012). During this time, Anishinaabe society "considered gender roles to be mutually supportive, valued collective labor practices of women, and respected their legal rights, especially in regard to water (Child 2012: 46). However, with trading with French and other fur traders came the introduction of European gender roles. These gender roles would influence who these European men would want to trade and barter with. However, it wasn't until the Great Depression in the 1930s that manoomin harvesting became a more masculine responsibility and activity. As a result, the Great Depression in the U.S. was a defining moment in the shifting of gender roles in regards to manoomin (Child 2012).

The shift in gender roles can be most clearly seen how the Anishinaabekwe tradition of binding strips of basswood fiber around manoomin had disappeared by the end of the Great Depression (Densmore 1929 & Child 2012). "For centuries in the Great Lakes, binding rice was a way for women to protect the crop in its unique ecosystem, as well as a significant part of their Indigenous legal system" (Child 2012: 103). Each woman had a unique way of tying the basswood fiber strips that would identify it to her clan or family. This system acted as a way to organize the harvest so that different families and clans knew where to harvest on the same lake. However, by the end of the Great Depression this practice had disappeared in the Great Lakes which indicates a shifting in gender roles (Child 2012).

In Minnesota during the Great Depression, one of the key methods settler colonialism used to shift gender roles was through state created and controlled wild rice camps where

settlers did not want to work with or recognize women's labor (Child 2012). This was another type of Whyte's (2017) disappearances of settler colonialism. In order to sell their rice and as a result survive during this time, women's leadership of manoomin camps was made invisible to at least the settlers. As a result, Anishinaabe were faced with yet another dilemma of settler colonialism (Whyte 2017). If they did not participate in the state run manoomin camps or sell to settler men, that did not want to work with women, they could face hard times including have less access to a scared food system including the lakes and rivers that it grew in. If they did participate in the camps, then their gender roles and governance system would be forever changed. As a result of this dilemma, men, at least to the settler public, became the primary manoomin harvesters in order at least have someone bring in the harvest for their families and communities. The impacts of this gender shift are still seen in the Great Lakes today with a majority of those who are working on manoomin restoration projects or the public face of Tribally run wild rice camps are men.

However, just like in the Great Depression, while men seem to be a public face to manoomin restoration and wild rice camps, women have always and continue to always play essential roles with the harvest and restoration of manoomin. During and after the Great Depression, this role can be seen in Minnesota with the wild rice cooperative at Leech Lake Indian Reservation (Child 2012). While the manager of the cooperative was a man there are three women are listed as harvesters (Child 2012).

Even during the many changes they faced during the late 19th century and early 20th century, Anishinaabekwe continued to hold things together. "The deeply ingrained traditions of women's lives served as a rock that stood proudly against the winds of change and helped

sustain family and community life in the face of racial hatred, exploitation, and a desolate reservation economy of the post-allotment Great Lakes region" (Child 2012: 82). The full long-term impacts of the shifting gender roles surrounding manoomin is one area needs to be further investigated. Indigenous food sovereignty approaches are one way that Tribes in the Great Lakes can mitigate the damage done to gender roles going forward.

Discussion

This paper used the frameworks of settler colonialism and food sovereignty to show how manoomin was commodified through three key turning points and then examined how Anishinaabe gender roles were affected. By taking manoomin from the Great Lakes and growing it on a farm in California, the first farmer to grow manoomin on a farm in California, Vanderford and his partners participated in a form of settler colonialism that erased Anishinaabe communities in the Great Lakes' relationships to manoomin. Settler colonialism "directly targets relationships that create collective continuance" or the "overall degree of adaptive capacity a society has" (Whyte 2018: 358 and 347). Unfortunately, the erasure of an Indigenous people's food system is one of the most common tools settler colonialism has (Whyte 2018). This erasure is the reason why when anyone looks for manoomin in a grocery store in Michigan they will find wild rice from California and not from the Great Lakes Indigenous peoples around the world have been involved with the food sovereignty movement since before its creation in the English language. From the knowledge of the land where they got their food, to which genders are responsible for different types of food, to the actual food they eat, colonialization has changed and continues to change every aspect of North American Indigenous peoples' knowledge of and relationship to their food systems. Indigenous peoples

have used food sovereignty as a strategy to revitalize this knowledge and relationships. Through a further exploration of the food sovereignty movement it can help provide insights into how it can be a strategy fight the commodification of manoomin.

While the term "food sovereignty" has been shown to have been used for the first time in 1981 in discussions of Canada's food aid program (Edelman 2014) and in 1983 by Mexico's government's new National Food Program (Edelman 2014, Whyte 2016), it didn't gain traction until 1996 when La Via Campesina, a transnational organization of Indigenous and small farmers, coined the term at the World Food Summit in Rome (Huambachano 2015). However, Indigenous peoples for hundreds of years have been "using English-language concepts and frames associated with concepts of inherent sovereignty, self-determination, cultural integrity, subsistence harvesting, and treaty rights as ways of justifying their own control over foods that matter culturally, economically, and nutritionally" (Whyte 2016). This legacy can be seen in the U.S. with different Indigenous groups fighting to protect their treaty rights to harvest foods in their ancestral territories that they ceded to the US (Whyte 2016). Internationally, Indigenous peoples have utilized the term food sovereignty to describe their own struggles with the neoliberal industrial model of agriculture and settler colonialism.

Some scholars argue Indigenous food sovereignty is a rights-based framework (Wittman et. al. 2010). In 1996 La Via Campesina defined food sovereignty as, "the right of nations and peoples to control their own food systems, including their own markets, production modes, food cultures and environment." (Wittman et al. 2010: 2). While other scholars argue that Indigenous food sovereignty goes beyond the boundaries of "rights" to include the restoration

of Indigenous peoples' relationships with the land and plants and animals that are their food (Raster and Hill 2017) as well as their very identity (Grey and Patel 2015: 439). At its core, food sovereignty can be classified as "a practical response to a particular structure of oppression that seeks to erase the ecologies that constitute Indigenous homelands" (Whyte 2016: 20).

Indigenous food sovereignty is also not strictly about food systems or agricultural practices. It is based on restoring the relationships made with humans and nonhumans in each area of the food system as well as the knowledge of how to participate in "environmental maintenance activities" that sustain the land where food is grown (Morrison 2011, Grey and Patel 2015: 439). These relationships can be restored through the restoration of the unique role food plays in Indigenous communities. Food is a "hub, it is able to "bring together…many of the relationships required for people to live well and make plans for the future" (Whyte 2016: 10).

Settler colonialism changed essential aspects of many Indigenous peoples' interaction with their food systems in North America including gender roles (Grey and Patel 2015). Before settler colonialism, gender organization in Anishinaabeg communities was connected to their 13-moon season migration and harvesting rounds and was a lot more fluid construction of gender then the settler colonialists' frameworks for gender. People today coded as women were considered equal but also specialists in certain areas. As well, there is evidence that Anishinaabeg respected more than two genders and that the relationships between someone's gender and their responsibilities could change (Meissner and Whyte 2017). Colonialism imposed a ridged definition of gender equity and fluidity that led to determinantal impacts on women. Women went from having roles as harvesters and ethnobotanists with "land management practices including wild and cultivated plots to control competition between

species; transplanting cultivars; coppicing and selective harvesting to increase yield; creating micro-environments at various elevations or latitudes/longitudes; promoting advantageous patterns of seed dispersal; cross-breeding to encourage particular characteristics; and manipulating soil quality" to being displaced by men for some of those roles (Grey and Patel 2015: 438). As explored earlier, this role change can be seen when examining the Anishinaabeg gender shift as a result of the commodification of manoomin in the Great Lakes. These impacts are still affecting Indigenous communities across the Great Lakes. Indigenous food sovereignty is a strategy for responding to these shifts as it centers Indigenous ways of constructing gender.

Conclusion

In conclusion, settler colonialism is a system of erasure of Indigenous peoples that operates through disappearances and dilemmas. Indigenous food sovereignty allows for the exposure of colonialization in Indigenous peoples' food systems while allowing for strategies of self-determination and survival of Indigenous people. As Grey and Patel (2015) explain, "food sovereignty is…a day-to-day mode of resistance informed by the demands of a long history of anticolonial struggle" (441). This can be seen when the connections are exposed between colonialism and such health issues like diabetes that disproportionately affect Indigenous people (Whyte 2016). Once these connections are exposed, North American Indigenous peoples can then combat their effects through such work as done by the Intertribal Agricultural Council and various Tribal sturgeon and wild rice restoration programs. These programs show how Indigenous food sovereignty is a strategy that allows for the resurgence of Indigenous food systems that are able to resist the effects of colonialism.

Article 2: Systematic Analysis of Knowledge About Manoomin (Wild Rice) in Newspapers in the Great Lakes

Introduction

A review of different restoration and revitalization projects suggests important complexities surrounding manoomin restoration projects in the Great Lakes (Bureau of Indian Affairs 2014, David 2013, and White Earth Nation 2011). There is no baseline year or practice that can be used to determine what forms of ricing to restore. The transatlantic fur trade, development of the U.S. settler state, the treaty era, allotment era and termination era all featured massive changes in rice habitats and the displacement of Indigenous peoples. As a result of these changes, some Anishinaabe do not have current memories of ricing yet wild rice features prominently in their origin stories and they are trying to restore rice in areas such as Michigan where there is little habitat that can support it. Other Anishinaabe are seeking to maintain ricing practices despite perceived current threats from climate change, mining, University research, and commercial rice grown nearby (White Earth Reservation 2011, Vennum 1988). These threats can be seen since the early 1900s when logging and mining drastically reduced the acres of wild rice habitat (Cozzetto et. al.2013). For the wild rice habitat that is left, climate change is destabilizing the rivers and lakes that wild rice grows as the temperature of the water is warming and the water levels are changing through flooding and droughts (Cozzetoo, et. al. 2013). As well, since the 1950s, the University of Minnesota has been supporting efforts to create farm raised or cultivated wild rice (LaDuke 2007, Raster and Hill 2016). The impacts of the University of Minnesota's role in commodifying wild rice and creating cultivated or farm raised wild rice can be seen in that a majority of wild rice that is sold today is from farms in California not the rivers and lakes of the Great Lakes (White Earth Nation

2011).

Biskaabiiyang and Shifts in the Production of Knowledge

These complexities raise questions about what is being restored and revitalized. These questions strike at some of the core issues of literatures on indigenous knowledges, revitalization, and sustainability. Within Anishinaabe theoretical foundations about knowledge, there is the concept of biskaabiiyang (Genisuz 2009). In the case of Anishinaabe, biskaabiiyang means to return to ourselves (Genisuz 2009: 9-10). However, as Simpson (2006) explains, **"**biskaabiiyang does not literally mean returning to the past, but rather recreating the cultural and political flourishment of the past to support the well-being of our contemporary citizens (51). Biskaabiiyang also occurs at both the individual and community levels and is a process that "means reclaiming the fluidity around our traditions, not the rigidity of colonialism" (Simpson 2006: 51)

In the case of manoomin, one particular question about biskaabiiyang projects concerns a shift in the production of knowledge. As a plant requiring particular habitats that are affected easily by challenges from pollution and climate change, people interested in ricing see knowledge of habitat, ricing techniques, etc., an issue. Historically, Anishinaabe relied on their own knowledge systems for guiding their harvest of wild rice.

Today, most Anishinaabe promote biskaabiiyang as requiring and engaging traditional knowledge systems, which range from harvesting techniques to ecological knowledge of rice habitat that comes from stories, memories and practices that are passed down through the generations. Yet given the extreme and repetitive habitat changes for rice and the displacement and adaptation of Anishinaabe for centuries, Anishinaabe have needed to seek

out additional sources of knowledge to maintain rice habitat and restore wild rice. One of the key sources they have sought is science which has come from a number of sources including U.S. federal and state agencies and universities, but most interestingly, from biologists and other scientists working for newly created Tribal natural resources and environmental departments of federally recognized Tribes.

In this way, there is a tension that Tribes are constantly working between biskaabiiyang and western science concepts of restoration and revitalization. This tension occurs when the project is denoted as biskaabiiyang but at the same time requires reliance on forms of scientific research that are much newer instruments than the Tribes use and are created for contexts that differ from what Tribes perceive as their own knowledge systems. This tension can be seen in that Tribal Natural Resource departments have been critical of Tribal members for not knowing varieties of rice and planting the wrong ones, or Tribal governments have promoted men's leadership in ricing without sensitivity to gender dynamics within Tribes (Child 2012). In some cases, Tribal members have rejected science as a legitimate source of knowledge or have expressed concerns about how traditional knowledge is articulated by scientists in ways perceived to be disrespectful.

In order to understand these rejection and concerns, examining how science has treated Indigenous peoples brings some insights. For much of the history of the U.S., western science has treated Tribal members as guinea pigs to experiment such as the case when the Havasupai Tribe's blood was used by Arizona State University researchers for research without consent **(**TallBear 2013**)** or the mass sterilization of Native women by the federally funded Indian Health Service (HIS) in the 1960s and 1970s without consent or with coercion (Ralstin-Lewis 2005). This

happened in both the U.S. and in Canada (Stote 2012). Tribal members themselves are often not considered scientists such as in the case of the Mohawk Akwesasne First Environment Restoration Initiative, where toxicologists did not respect Indigenous Haudenosaunee knowledge regarding such issues as the holistic adverse health impacts of how not consuming fish that had been exposed to PCB could also could lead to higher rates of health problems such as heart disease, and Type II diabetes (Arquette et. al. 2002). While the western scientists recognized that that Akwesasne waters and lands had been polluted they did not consider Haudenosaunee knowledges at the same parity as western science (Arquette et. al. 2002). Research on manoomin has not been immune to this treatment. Researchers at the University of Minnesota (Article 1 of this dissertation) are directly responsible for the removal of manoomin from the Great Lakes as they assisted in the process of creating shatter resistant varieties that could be grown on farms in California.

Indigenous knowledges and science knowledges

This dissertation research project filled in a gap by exploring the tensions between Indigenous knowledge systems and science. There are several arguments that the research questions will explore on relations between Indigenous knowledge systems and science. The first view, or more extreme view, argues that science is a Western practice that only disrupts Indigenous knowledge systems and is not open to or is opposed to Indigenous worldviews**.** On the other end of the spectrum is the view that Tribes, as always adapting societies, see no issues in incorporating science into their environmental stewardship. In between these extremes on the spectrum is a middle ground are scholars like Carroll (2014) and Moon Stumpf (2000). In their examination of National Parks, they show ways that integrate both sides of the

argument. Kimmerer (2002 & 2013) suggests that collaborations between Western and Indigenous knowledges can be braided together in collaborations that benefit both western and Indigenous trained scientists In her examination of Indigenous knowledge and scientific knowledge Kimmerer (2002 & 2013), shows how they have more similarities really then differences and therefore have a strong foundation to build from for collaborations. In Kimmerer's (2013) description of the three sisters (corn, bean, and squash) is her vision of collaboration between the knowledge systems:

"The Three Sisters offer us a new metaphor for an emerging relationship between indigenous knowledge and Western science, both of which are rooted in the earth. I think of the corn as traditional ecological knowledge, the physical and spiritual framework that can guide the curious bean of science, which twines like a double helix. The squash creates the ethical habitat for coexistence and mutual flourishing. I envision a time when the intellectual monoculture of science will be replaced with a polyculture of complementary knowledges. And so all may be fed." (90)

In my research, I saw the need to contextualize better these literatures on the relations between Indigenous knowledge systems and science. Based on reviewing rice restoration projects, the available literature and my own experiences, I have seen that for many Anishinaabeg Tribes in the Great Lakes there is not a strong dialogue between the scientific research that informs rice restoration and the other sources of knowledge that Tribal members cite as being important for ricing. Beyond the idea that the science is supposed to support a tradition, there seems to be no real integration between the knowledge systems. My original research question for my dissertation was:*: What systems of knowledge (e.g. Indigenous knowledges, western scientific knowledges) do people participating in wild rice restoration initiatives use as authoritative guides for their restoration strategies?* However, Tribal natural

resource management plans from the Great Lakes were going to be a key data source used to answer this question. As became over time difficult to access the plans the research question shifted into: *What systems of knowledge does the general public use in discussing Great Lakes wild rice initiatives? In other words, when the public refers to wild rice are they associating it with Indigenous peoples and knowledges or are they referring to it as a weed or something/non-Indigenous? In this paper, I will explore this later question in this paper* I did this by conducting a systematic analysis of newspapers in the Great Lakes region from 1980-2020. Newspapers were chosen to answer this research question due to my ability to access them through my university's library and their ability to access the breath of historic and contemporary public's knowledge.

Method: Systematic Analysis of Newspapers Articles

In order to answer these research questions, I used a systematic analysis approach (Borrego et. al. 2014) to review newspaper articles from the Great Lakes region. Steps within the Borrego et. al (2014) approach are: 1) developing inclusion and exclusion criteria, 2) finding and cataloging sources, 3) critiquing and 4) appraising those sources, 5) synthesis of sources, 6) critique across studies, and 7) reliability concerns. In the next section, I'll describe my inclusion and exclusion criteria which includes how I found, cataloged those sources and then critiqued them. Then I'll discuss how I used the qualitative software MAXQDA to code the newspaper articles.

I used Michigan State University's Library's subscription to the Access World News Research Collection data base (https://infoweb-newsbank-com), which goes back to 1980. I conducted systematic analysis searches of newspaper articles from the Great Lakes region. This

database allows users to first search by using a locator map.So, I first chose to refine my search by source location of North America, then U.S. then the Great Lakes states of Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, and New York. Then I searched for terms: “wild rice” in “all text” and “Great Lakes” in all text (Table 1). Then to avoid recipes and food related articles, as those would not assist in answering the research question, I choose these terms: not recipe* in all text, not menu* in all text, not breakfast* in all text, not lunch* in All Text, NOT dinner* in All Text, NOT dessert* in All Text, NOT meal* in All Text, NOT soup* in All Text, NOT dish* in All Text. Then I choose: newspapers and all dates.

With those inclusion and exclusion parameters in place, I found 396 newspaper articles from the U.S. During the coding process 20 duplicates were identified for a final number of 376 newspaper articles from the U.S. Newspaper articles from Canada were also searched for. The only difference for that search was the location the database allowed me to select in the Great Lakes region of Canada was Ontario. There were only 7 newspaper articles found for the Canadian search. The total number of newspaper articles was 383 (Table 1).

Table 1: Inclusion and Exclusion Criteria for Systematic Analysis of Newspapers from 1980-2019

Inclusion Criteria	Exclusion Criteria	U.S.	Canada
"wild rice" in "all text"		x	x
"Great Lakes" in all text		x	x
	NOT recipe* in all text	x	x
	NOT menu* in all Text	x	x
	NOT breakfast* in all text	x	x
	NOT lunch* in all text	x	x
	NOT dinner* in All Text	x	x
	NOT dinner* in All Text	x	x
	NOT dessert* in All Text	x	x
	NOT meal* in All Text	x	x
	NOT meal* in All Text	x	x
	NOT soup* in All Text	x	x
	NOT dish* in All Text	x	x
	Totals	**376**	**7**

Coding

After downloading the newspapers as Adobe Acrobat pdf files from the Access News Research Collection, I uploaded them into the qualitative software program MAXQDA I then proceeded with coding of the data. Coding for a content analysis is very similar to coding for qualitative interviews in the sense that the coding processes involves reviewing written words to find similar themes and creating a code book based on those themes or codes. After those codes are identified, then those codes are examed those codes for patterns and the relationships between codes and working to get interceding reliability (Schensul and LeCompte 2013). An advantage of using a systematic analysis is that it can analyze a great amount of written word in a shor amount of time, therefore giving a research project such as this dissertation a wide base of data from which to work from. Systematic analysis is used

commonly in disciplines like public health in order to review large amounts of literature and find patterns in those studies in an orderly way (Mullen & Ramirez 2006).

As the research question was based on 1) knowledge systems and 2) wild rice, I used these two major codes to tag segments of the articles: knowledge systems and wild rice. There were 350 coded segments related to knowledge systems and 687 related to wild rice (Tables 2 and 4). Indigenous knowledges were operationalized to mean those articles that mentioned a Tribal nation or intertribal organization. Scientific knowledges were operationalized to mean those articles that mentioned a scientific institution like a university.

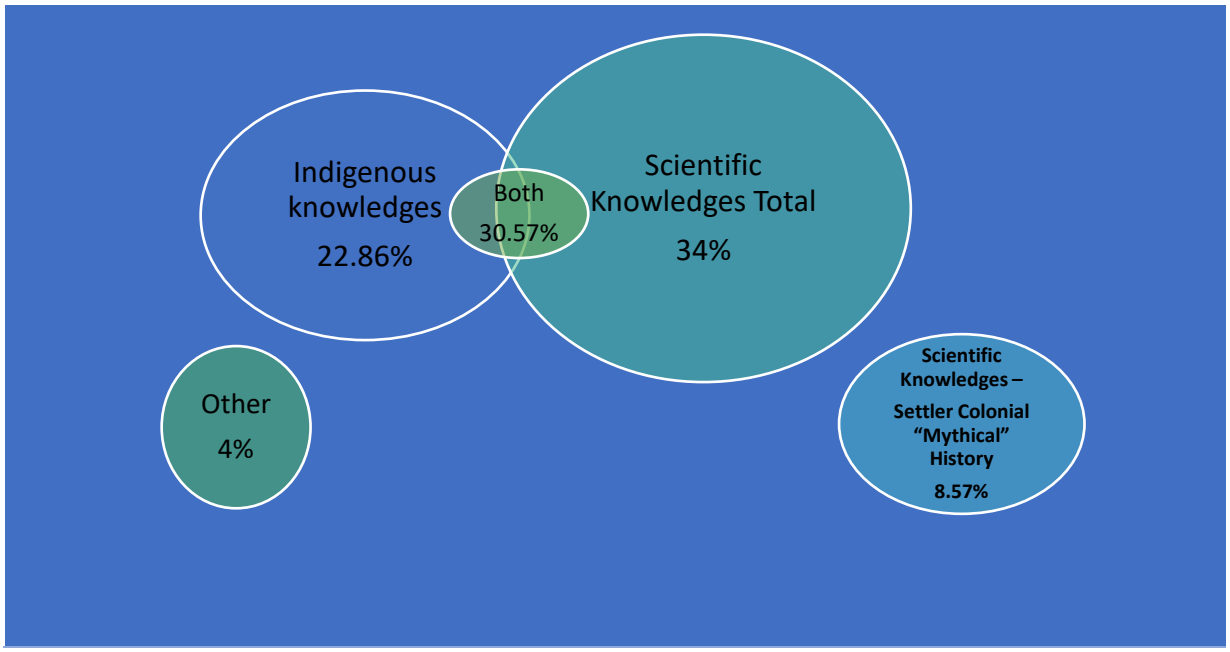
Results: Knowledge Systems

Out of 376 total newspaper articles, scientific knowledges codes were found 119 times in the newspaper articles versus Indigenous knowledges codes which were found 80 times. Interestingly, there was a significant number of articles that were coded for both Indigenous knowledges and scientific knowledges at 107 which was just 12 codes fewer than the scientific knowledges codes. There were also 14 codes (articles that did not fall into either Indigenous or scientific knowledges and were coded as other) these included articles that were about such miscellaneous topics such as a puzzle or an obituary.

Table 2: Results - Knowledge Systems

Number of Total	% Codes	of Codes
Indigenous Knowledges	80	22.86
Scientific Knowledges Total	119	34
Scientific Knowledges – Settler Colonial "Mythical" History	30	8.57
Both Knowledge Systems	107	30.57
Other	14	4
Totals	350	100

Figure 4: Results - Knowledge Systems



Articles that were coded as Indigenous knowledges contained information about: the Anishinaabe migration story, restoration projects led by Tribal nations or intertribal organizations, harvesting of manoomin and manoomin camps, seasonal harvest information, climate change issues, information about language and cultural stories, Treaty rights including the rights of nature, books, environmental regulations, wild rice being offered at events such as powwows, culturally based educational curriculum, diet and diabetes, historical information, movies about manoomin, Indigenous knowledges leading the way with science catching and pipelines and mines.

There were also topics that crossed knowledge systems. For example, issues associated with pipelines and mines was such a topic discussed by both indigenous and scientific knowledge systems. Nine Indigenous articles, thirteen scientific knowledge articles and fourteen articles from both knowledge systems discussed pipelines or issues with mines. The

scientific knowledges articles reported on a law from Minnesota that states there is a 10 milligram standard for sulfate discharges and there were proposals to nullify the laws as sulfate damages wild rice .

Different Indigenous and non-Indigenous peoples interviewed mentioned wild rice beds as being a reason why mines should not be allowed to go forward as part of the treaty rights that the federal government guaranteed to Tribes in the Great Lakes region. In the article that Babette Sandman, Chairwoman of the Duluth Indigenous Commission, wrote in the Duluth News Tribune on October 18th, 2019 her language is symbolic of many of the type of rhetoric used by other Anishinaabe and Indigenous peoples on this topic. She said in her article, "We still harvest wild rice, as we have for generations, and hold an important connection to the land and the water. Building a massive tar-sands pipeline through these waters would violate our treaty rights and threaten the health of our communities and the practices that define us."

Interestingly, 107 Codes or only 12 less than scientific knowledge systems articles were coded as both knowledge systems. When the article mentioned both knowledge systems or organizations that used either knowledge systems it was coded as "both".

Wild Rice - Habitat Restoration (Table 3)

After coding for knowledge systems, I coded for themes regarding wild rice. By far the most coded type of article for wild rice was on "Habitat Restoration". It was coded 66 times verse the next most popular code ,"Harvest Seasonal Information" which was coded 41 times. Out of those 66 coded references to Habitat Restoration, Indigenous knowledges was mentioned in 29 articles or 43.94%. Indigenous knowledges were operationalized to mean listing of a tribal nation, inter- tribal organization in the article.

Shifts in Gender Roles

Out of the 29 Habitat restoration Indigenous knowledges articles, only two articles to spoke to anIndigenous women, one whom is a teenager. This means, out of the 376 total articles examined, only one adult Indigenous woman was interviewed about the most coded theme of habitat restoration. There are many more Indigenous women in the Great Lakes that work in habitat restoration then just one.

Table 3: Most Frequent Wild Rice Codes (Codes with 10 more)

Name of Wild Rice Code	Number of Codes
Wild Rice – Habitat Restoration (Indigenous knowledges = Articles # 5,6, 7, 21, 22, 23, 24, 25, 26, 29, 31, 34, 36, 37, 38, 43, 44, 45, 46, 47, 49, 51, 53, 56, 57, 62, 63, 64)	66 (29 Indigenous Knowledges)
Wild Rice – Harvest Seasonal Information	41
Wild Rice – Effects of Mines & Pipelines	38
Wild Rice – Culturally Important	38
Wild Rice – Locations	38
Wild Rice – Food & Eating	37
Wild Rice – Still Harvest	29
Wild Rice – Laws	28
Wild Rice – Birds	28
Wild Rice – Effects of Water Quality & Levels	19
Wild Rice – Effects of Invasives & Diseases	18
Wild Rice – Non-Native Version of N. History	17
Wild Rice – Migration Story	16
Wild Rice – Locations – Historical	12
Wild Rice – Management	12
Wild Rice – Paddy Rice	12
Wild Rice – Camps & Workshops	10
Wild Rice – Minnesota	10

Discussion

Two of the key findings of this systematic analysis were 1) the erasure of Indigenous women's voices especially from habitat restoration articles and 2) that the number of articles

that were coded as “Both Indigenous knowledges and scientific knowledges” (107 codes) was very close to the same number of codes that were coded as “scientific knowledges” (119 codes). Indigenous feminist theories **(**Fisher 2015 & Dhillon 2020**)**, and settler colonialism (Whyte 2016) can give us insights into why there is such a void of self-identified women and two-spiritedvoices in the newspaper articles even when through the work of the Indigenous Women’s Manoomin Collective (explored in Article 3) I know there to be many women and two-spirited people that work in that space. While Nadasdy’s (2005) examination of co-management models will give some insights into what might be occurring when Indigenous and scientific knowledge systems are collaborating on habitat restoration projects and other projects related to manoomin.

As Dhillon (2020) explains in her study of a climate change organization that utilizes both Indigenous and western knowledge systems, “Indigenous feminist theories provide explanations; resurgence of inclusive Indigenous governance threatens White supremacy and heteropatriarchy, upending their undeserved benefits. As a result, Indigenous women, queer/two-spirit persons, and youth continue to experience everyday settler colonial social formations” (13). Settler colonialism is a type of colonialism that is done with the main purpose for settlers to create their own homelands on Indigenous lands (Tuck and Yang 2012). Settler colonialism can facilitate the removal of Indigenous peoples, their food sovereignty and their gender roles through two main ways 1) disappearances and 2) dilemmas (Whyte 2016). Disappearances, according to (Whyte 2016), “are direct productions of ignorance that render Indigenous peoples invisible in their own homelands” and therefore disrupts Indigenous peoples relationship with the land and with plant relatives like manoomin (Tuck and Yang 2012). Indigenous feminism is “an umbrella term for the theoretical and practical paradigms

that link the issue of gender equality with that of decolonization and sovereignty for Indigenous peoples" (Fisher 2015: 6). Indigenous feminism has a basis in feminism. Feminist scholar, Harding (2004), gave us "feminist standpoint theory" which is concerned with "the view from women's lives" as a standpoint from which to begin inquiry (2). While another feminist scholar, Haraway's (1991), work shows us "situated knowledges" or how all knowledge is situated and each one of us only has a part of the picture because are our knowledges are produced within historical and cultural contexts. TallBear (2014) explains this means that "hypotheses, research questions, methods, and valued outputs, including historical accounts, sociological analyses, and textual interpretations must begin from the lives, experiences, and interpretations of marginalized subjects" (3).Before settler colonialism occurred, women were responsible for leading the harvesting of manoomin while men were responsible for hunting however in many communities gender systems were fluid and different genders would engage in each task as necessary (Norragard 2014, Raster-Hill 2016, Meissner and Whyte 2017). Currently, there are many women that are engaged in biskaabiiyang manoomin projects in their communities in Michigan and in the Great Lakes (see Article 3). The 6th Bi-Annual Nibi Miinawaa Manoomin Symposium also featured at White Earth Nation October 13-15, 2019 with the theme "Ikwe Oganawendaan Nibi Miinawaa Manoomin or Women Protecting Our Water and Wild Rice" featured many Indigenous women and men scholars and activists who do biskaabiiyang manoomin projects.

Anishinaabe scholars, McGregor (2005), Kimmerer (2002) and Whyte (2018) and non-Indigenous scholar Nadasdy's (2005) have some insights on why it might appear on the surface that both knowledge systems are represented almost equally in the newspaper articles from

the systematic analysis but perhaps what is happening in actuality is not an equal exchange of knowledge systems.

One of the themes that each of the scholars discusses, is that of scientific knowledges treating Indigenous knowledges as unequal and specifically treating them as just a form of information to be added to scientific knowledge in order for it to meet its goals. Nadasdy (2005) shows that the assumptions underlining traditional ecological knowledge (a type of Indigenous knowledge) in co-management models are that it is "simply a new form of 'data' to be incorporated into existing management bureaucracies" (2005: 220). Kimmerer (2002) also discusses Indigenous knowledges as data when she discusses the ethical ways Indigenous knowledges should be used in biology curriculum. She states that, "while it maybe tempting to "extract 'data' from TEK [traditional ecological knowledge] and import it to the more familiar context of Western science. For example, the traditional use of fire could be taught simply as data on vegetation response to fire…But we do a disservice to our students and to the intellectual tradition of TEK." (Kimmerer 2002: 437). In this way, by not treating Indigenous knowledge as just data to be extracted there is a full understanding that can occur that in some Indigenous cultures, "fire represents not only ecological understanding of successional dynamics but also embodies the spiritual responsibility for participation in land stewardship" (Kimmerer 2002: 437). Whyte (2018) agrees, he "found that scientists often appreciate what I will call here the *supplemental value* of Indigenous knowledges – the value of Indigenous knowledges as inputs for adding (i.e., supplementing) data that scientific methods do not normally track" (62-63). McGregor (2005) is also has similar critiques. Specifically she frames her critique around the creation of "traditional ecological knowledge" as: "driven largely by

non-Aboriginal interests" and utilizes a research process that "decontextualizes" knowledge from the knowledge holder and the "holder's context and applying it elsewhere" (2005: 104). As McGregor (2008) explains, a "Western academic view of traditional ecological knowledge" is that of "a noun, something whose boundaries can be readily delineated and which can be packaged for general consumption" while "traditional ecological knowledge is viewed as the process of participating (a verb) fully and responsibly in relationships between knowledge, people and all of creation" (145). The concept of traditional ecological knowledge "originates externally from Indigenous people" (McGregor 2005: 3). As indigenous people want to gain control over the environmental decision making happening on their land they participate in this process of putting boundaries and academic naming of the things they do every day.

Specifically, the Indigenous knowledge that is produced reflects the government agencies who are requesting it rather than the indigenous people's actual knowledge, as the agencies are the ones who choose the topics to research, the tools that are being used to research those topics and "abstract and summarize according to the project criteria of relevance" (Nadasdy 2005: 219). For Nadasdy (2005) the attention paid to the integration of scientific knowledge and traditional ecological knowledge and specifically the treatment of the integration as a technical problem helps mask the political dimensions of co-management that are at work.

Kimmerer (2002), Whyte (2018) and Nadasdy (2005) work also suggests that it should not be surprising to find Indigenous knowledges coded at the same amount as scientific knowledges in the systematic analysis as Kimmerer (2002) points out they have as much in common with each other as they both "derive from the same source: systematic observations

of nature" (433). In addition, the knowledge systems have at least three other similar characteristics: 1) they both "yield detailed empirical information of natural phenomena and relationships among ecosystem components" 2) they both have predictive and 3) they both are from a particular cultural context (Kimmerer 2002 : 433). The knowledge systems differ according to Kimmerer (2002) in other major way in that Indigenous knowledges tend to be qualitative and relational while scientific knowledges trend towards quantitative and an emphasis on "objective" science. Indigenous knowledges cannot be separated from the culture (Kimmerer 2002). In fact, Indigenous knowledges are essential to Indigenous peoples and lose all meaning and analytical power when separated from a people and place. Whyte's (2018) argues that Indigenous knowledges provide "governance value" or "irreplaceable sources of guidance for Indigenous resurgence and nation building" (57). As a result, they are also spaces and sources where biskaabiiyang can occur (Genisuz 2009 & Simpson 2006).

Conclusion

Indigenous knowledge systems have long been overlooked in many spaces including research. David Martinez's (2001) anthology demonstrates how in the U.S. there has always been a rich intellectual tradition of American Indian scholars since settlers stepped on this continent but through the disappearances of settler colonialism that history of Indigenous knowledges has been systematically neglected. Michel Foucault's work on power shows us that indigenous knowledges have been presented as "subjugated knowledge" or "'knowledges that have been disqualified as nonconceptual knowledges, as insufficiently elaborated knowledges: naïve knowledges, hierarchically inferior knowledges, knowledges that are below the required

level of erudition or scientificity" (Swazo 2005: 569). As Linda Tuhiwai Smith's states on the first page of her book *Decolonizing Methodologies* the "the term 'research' is inextricably linked to European imperialism and colonialism" (2001:1). For Smith (2001), the political nature of research with Indigenous people participants is shown in that research has been "one of the ways in which the underlying code of imperialism and colonialism is both regulated and realized" (Smith 2001: 8). This code was constructed when Indigenous peoples were not consulted about research and were exploited by researchers. As a result, social research has been used as "an instrument of oppression" on indigenous people (National Aboriginal Health Organization 2007: 3). Due to this history of oppression, colonialism, and imperialism, when indigenous people themselves create their own research paradigms they frame it as a decolonizing project (Smith 2001). However, as Louis (2007) explains it is important to remember that, "indigenous methodologies are not merely a political gesture on the part of Indigenous peoples in their struggle for self-determination…they are necessary to reframe, reclaim, and rename the research process so that Indigenous people can take control of their cultural identities, emancipate their voices from the shadows, and recognize Indigenous realities" (135). As a result, in the last two decades, a growing number of Indigenous scholars (Wilson 2001, Weber-Pillwax 2001, Louis 2007) are trying to define their own Indigenous research paradigms. As Louis (2007) explains, "there is no singular definition of Indigenous epistemologies since knowledge is not just socially constructed from how it is acquired, selected, and stored to how it is symbolized and transmitted, it is also, 'local ... located ... situated and situating" (139). Indigenous ontologies, epistemologies, methodology and axiologies are going to depend on the Indigenous community that they are coming from

however some common themes of these aspects of indigenous research can be seen in the literature. The core common themes of indigenous research are: recognition of knowledge as relational, it has a core of action research, it is community-based, includes cultural protocols, and has a goal of social justice. Wilson (2001) suggests that the way to start an Indigenous research paradigm is to first understand that "an indigenous paradigm comes from the fundamental belief that knowledge is relational. Knowledge is shared with all of creation" (176). For Wilson (2001) an indigenous ontology "is not the realities in and of themselves that are important, it is the relationship that share with that reality" (177). For Wilson (2001) this theme of rationality can also be seen in his descriptions of an indigenous research methodology and axiology. For Wilson (2001) an indigenous methodology happens when, "as a researcher you are answering to all your relations when you are doing research" and the researcher should be asking, "Am I fulfilling my role and obligations in this relationship? (178). While an indigenous axiology, "needs to be an integral part of the methodology so that when you are gaining knowledge, you are not just gaining in some abstract pursuit, you are gaining knowledge in order to fulfil your end of the research relationship" (Wilson 2001: 179).

In uncovering the discourse of power dynamics at work in biskaabiiyang projects discussed in the systematic analysis of newspaper articles, we can locate the source of its assumptions and as well locate places for Anishinaabe and other Indigenous peoples to start working towards a paradigm that would truly be based on their knowledge. As a result, there are spaces that Indigenous peoples and those that collaborate with Indigenous people on sustainability related issues can find to make incremental change to this power dynamic.

Models such as the biskaabiiyang research model can assist this process as they are based on Indigenous knowledge and help mitigate the effects of settler colonialism.

Article 3: Indigenous Women's Manoomin Collective: Our Story*
(*Members = Sherry Copenace, Aimée Craft, Simone Senogles, Jennifer Gauthier, Jennifer Ballinger, Allison Smart, Marie Schaefer)

Introduction: Creation of the Indigenous Women's Manoomin Gathering Collective (As told by Marie)

The Indigenous Women's Manoomin Collective formed through conversations about women's knowledge and sexism with Indigenous (Anishinaabeg and Menominee) women throughout the Great Lakes region. For the last four years, in various contexts I started to notice what I thought was patterns of people who self-identified as women being put in situations where their knowledge was being ignored or not acknowledged in regards to manoomin restoration. This was happening not only in non-Native spaces, where some might expect this behavior to be found, but it happened most regularly in Native spaces with Native men. I had been seeing some small patterns for a while and discussing what I saw with Indigenous women from those spaces to get their thoughts. Then I attended a few conferences that continued to see these patterns occur.

At a Tribal water conference I attended in 2016, there was a manoomin track at the conference and only one woman, Jenny B. was one of the few women who presented at the conference. I thought there might be many different reasons for this so I didn't bring it up until I was in one of the manoomin sessions and realized that there were a few Indigenous women experts in the audience I knew who were working on manoomin restoration for different Tribes but they weren't presenting. I asked one of them, Allison, if there was any reason for this and I got the response, "I'm sick of arguing with the guys''. There was a fair number of women working on manoomin restoration but there was something going on where they didn't feel

listened to and even seemed to be undermined in their positions when they did speak up. This made me think of how patriarchy impacted these spaces. This pattern of women being ignored and experiencing hostility when they tried to make space for themselves in their communities to do manoomin and other restoration work showed me that while Child (2012) and Noorgard (2014), talk about manoomin camps historically being run by women the face of manoomin restoration work today is that of men. Women and their knowledge is ignored at the minimum and disparaged often.

It hurt to hear these stories repeatedly, so I asked one of my Anishinaabekwe friends, who I had many conversations about these issues the last few years, what we should do, if anything. Should we just vent together? Should we take some sort of action? What would actually be helpful for her work and maybe be helpful for other women who are in these spaces? My friend said she would like to talk to other women who are experiencing these issues. She wanted to come together and talk and strategize about how to help each other out and how to deal with these issues. This was the beginning of the Indigenous Women's Manoomin Collective.

The Indigenous Women's Manoomin Collective - Dissertation Project

There are now seven Indigenous women that are part of the Women's Manoomin Collective. This Collective is characterized by the process that we have undergone together to create a safe and healing space. This space is negotiated together and in that space there is a co-construction of knowledge as well as collective transmission of knowledge. In this way, there is a type of horizontal knowledge exchange that occurs within the Collective. As a result, we are creating a space for creating multidimensional Indigenous women's knowledge and are

renewing Anishinaabe and Menominee knowledge. This type of knowledge is also an "evolving" type of knowledge like the Métis woman knowledge Kermoal (2016) explores as it also adapts to the ever-changing needs of the members.

The Collective has some of the characteristics of participatory-action research. However, we use a distantly Indigenous research methodology including Indigenous standpoint approach (Moreton-Robinson 2000) that it is not only consisting of and run by Indigenous women but also builds its foundation from a place where we are building reciprocal relationships with one another. The relationships built in the Collective go deeper than a one-time research project. We are renewing our original ways. The relationships are based on our roles and responsibilities as Indigenous women and will not end when the dissertation ends.

Gatherings and Meetings

Our work as a Collective has used the following approach. At least once a month, meet on the video conferencing software platform Zoom. To set a meeting to plan each Gathering, I work to schedule meetings on Zoom using email and the Facebook messenger group. If everyone isn't able to meet at the same time, I meet with individuals and share information, so everyone is on the same page. I also use the Facebook messenger group to keep the members informed. At each Zoom meeting, I present different options for where and when a meeting or gathering can occur, then the members will discuss if they want to have a gathering, the agenda for the gathering and any other relevant information. Each meeting is about an hour. During the meeting, I take notes and action items in a shared Google doc and folder. Members have access to this Google doc of notes and action items for each meeting any time they want.

For Gatherings, the members have decided that the agenda for each Gathering will be

based on questions they want to explore in that Gathering. The length of time, the content of the agenda and the structure depends on each Gathering. As many options for the Gatherings are at already planned conferences, some Gatherings there will be more formal time for a discussion while other Gatherings will have a shorter amount of time. There will always be informal or unstructured time for instance as we drive together in vehicles or during shared meals. This informal time is essential to the success of the Collective. During this time relationships and trust is built as the members get to know each other in a deeper way. In order for the members to feel comfortable to talk about sensitive topics that are at the core of many of the questions we want to explore, there needs to be informal time where deep relationships can be built where the members can feel comfortable and safe to talk about these topics. Some of this informal time will be a bit structured as I will push members to reflect on the day and plan for the next Gathering and other times it will be completely informal as we visit and eat dinner together.

Each Gathering of the Collective has allowed for a structure to be created in a way that best responds to the location and context that it is in. Sometimes we have started out with a nibi (water) ceremony, such as the January 2019 Gathering in Detroit, and for some Gatherings the location will already be at a ceremony. After each Gathering, the Collective has a follow up Zoom meetings to reflect and evaluate on the previous Gathering.

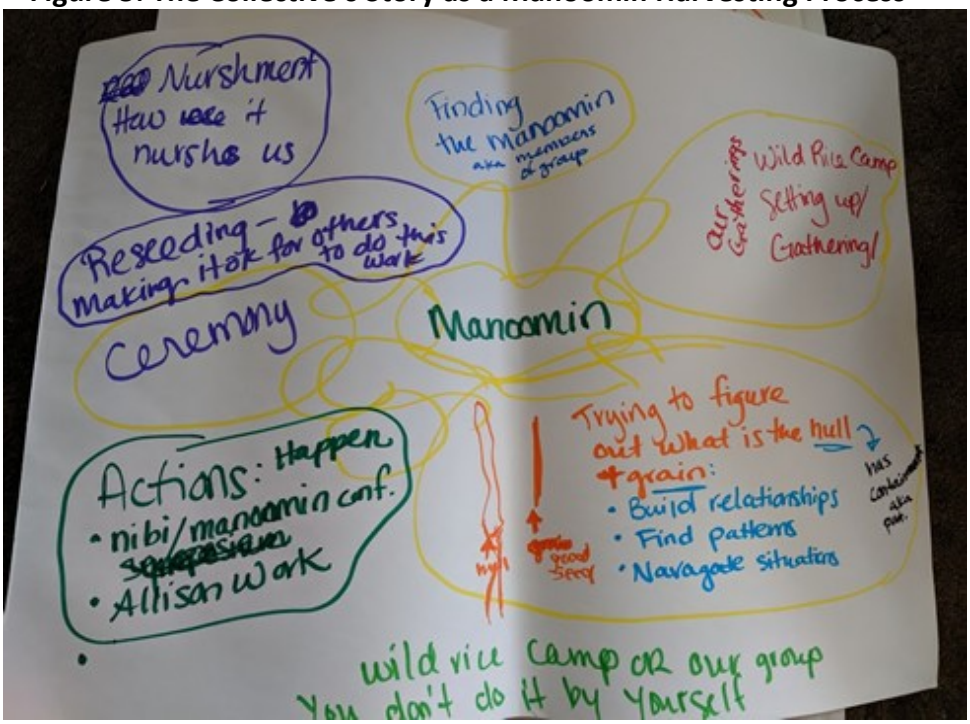
In Person Gatherings:

- January 2019 - Detroit, MI
- May 2019 – Nibi Gathering , Whiteshell Provincial Park in Manitoba, Canada
- October 2019 – *Ikwe Oganawendaan Nibi miinawaa Manoomin* or Women Protecting our Water and Wild Rice symposium at White Earth Nation

Manoomin Harvesting as Research Approach:

We told our story as the stages of how manoomin was harvested. The Diagram the Collective made of the Manoomin Harvesting Process that was our process for coming together as a group. This was made at the Manoomin Symposium at White Earth Nation in Oct. 2019 (Note: The yellow lines symbolizes ceremony that is in every stage.)

Figure 5: The Collective's Story as a Manoomin Harvesting Process



1. Us coming together - How did you find your way to the group? Where did you meet Marie for example?

Allison: I found my way to the group after meeting Marie in New York at a Climate Change gathering hosted by Dr. Robin Kimmerer. From there Marie and I happened to run into each other several times at a variety of meetings from TDubs to other gatherings we continued the conversation of getting a group of women together to form a wild rice collective. Marie was the

motor behind combining the right women from such a vast variety of disciplines and knowledge carriers to begin the discussions.

Jenny: I met Marie at the USEPA Region V Tribal Water Workshop held at the Nottawaseppi Huron Band of the Potawatomi on October 6, 2016. I was invited to give a presentation about a recent project entitled "A Traditional Ecological Knowledge (TEK) Assessment of Wild Rice Waters in the Lake Superior Basin" I worked on where I had interviewed manoomin harvesters and elders about manoomin management. I forget who exactly wanted me to present; if it was requested from someone at USEPA to showcase novel use of Great Lakes Restoration Initiative (GLRI) monies for traditional ecological knowledge (TEK) work or if GLIFWC wanted to highlight this successful TEK work in order to get more funding for future work. Either way, I was happy to present, especially since I thought this project had gone exceedingly well and had parlayed it into continuing manoomin TEK interviews for a new "wild rice management plan" that was being developed at GLIFWC.

Marie asked some questions after my presentation and introduced me to Allison. Then Marie and Kyle invited me out to dinner that evening with some other Native MSU grad students to talk about indigenous natural resource management. We talked a lot about the differences between Wisconsin and Michigan's wild rice situation. I think it was at dinner too when Marie pointed out to me that I was the only Anishinaabekwe who presented about manoomin. We got into a more in-depth discussion about men who seem to relish taking credit for work in natural resources while minimizing others', especially women's contributions to that work.

Jennifer: Marie and I found each other while she was working at the College of Menominee Nation. If memory serves correctly, she held an evening workshop on extending the growing season and that is where our friendship began. We would bump into each other here and there but where we really began connecting was at community events where we engaged with nature. We tapped maple trees, did plant identification walks, parched rice, built a very sturdy raised bed garden, and learned so much about each other. Marie was always about building supportive environments and supporting Indigenous women, including myself. We had many conversations on gender roles, sexism in the workplace, and struggles of balancing cultural values in the Indigenous work we were engaged in. Having heard similar stories from many Indigenous women, Marie had the idea for the Maanoomin women's group. She dedicated her time to making this a reality and connected Indigenous women both virtually and in real life where we shared about some of these issues, learned from each other, and grew in so many different ways.

Aimée: Sometimes we journey across or around the world to find home. One example of that was meeting with a group of Anishinaabe scholars, students and community organizers at the Ngā Pae o te Māramatanga Maori research conference in 2016. Marie had started her PhD and her supervisor Kyle Whyte introduced us. I had met Kyle a few years prior at an Anishinaabe conference at the University of Michigan's Indigenous Law and Policy Centre's annual Indigenous Laws Conference. We were a small but fierce group of kwe (women) - and Kyle.

Some of us had met before through our work and solidified our connection in the few days we were in Aotearoa. The connection between each of our areas, nibi (water), manoomin

(wild rice), the jiimaan (canoe) and nameo (sturgeon) connected us. The following year, Kyle brought a group of Anishinaabe, including Marie to the annual Nibi Gathering that we host in our territory. And that connection around nibi, manoomin and nameo was solidified, as was the space for women to come together and exchange, without the pressures of our often male dominated fields of study and practice.

Sherry: I met Marie in New Zealand at a Maori research conference through Kyle Whyte. It was like I knew Kyle forever, then I got to know Marie as well. We are all Anishinaabe so that got and kept us together. Marie and her work was amazing to me. Maanoomin is everything to us, our genealogy, cosmology and is within our sacred stories - Aadzookaawin. Thereafter, we formed the womens collective, each woman with their own Anishinaabe expertise - knowledge and skills. We are a Reflection of our Anishinaabe matriarchal and matrilineal roles and responsibilities.

Simone: In a way it's like our creation story says, that the Anishinaabe migrated until they came to the place where the food grows on the water, manoomin. While not as monumental as all that, I do feel that in our lives, we move toward "food"; that which nourishes us, spiritually, physically, mentally etc. Becoming part of this women's manoomin collective is one of the many things that I am meant to do in my life. One of the hundreds of things, big and small, that feeds my mind and spirit and teaches me about myself and creation. Being part of this group of women learners and teachers, is a natural progression down a collective path of knowing, sharing, bonding and creative expression.

2. Wild Rice Camp: aka Our Gatherings

What do we do together? What do we do at our gatherings? At other times?

Sherry: First we are on the land and waters, secondly we visit one another and creation. As linda smith wrote we come together to share our knowing, being, doing and further for us as Anishinaabe how we feel and process that is intertwined throughout and encircles those ways. And most importantly we want to hear and honour our womanly knowledges.

Jenny: After our first meeting, Marie and I kept in contact via email and other conferences. When Marie came up with the more formal title of the Indigenous Women's Manoomin Collective and asked if I wanted to join, I was so happy and relieved. There were a lot of negative and misogynic internal politics that were coming to a head at GLIFWC with the leadership changes in 2015-2017. Knowing I had a safe space to share my experiences and learn from other women who were going through similar issues was invaluable. I'm not sure why I didn't find comradery like this elsewhere, but I think a big part of it is that we all agreed that while we don't know what exactly the ultimate answer is to solving all of injustices related to female indigeneity, water and manoomin, we're willing to help each other in any way we can.

Simone: If we look at ourselves as a community, like the community of beings: water, soil, plants, insects and animals that are all required for a healthy manoomin bed, then what we do together is create an ecosystem/community of learning that feeds us. We gather, prepare and eat: We share, pass on and exchange indigenous knowledge, science, song, ceremony, lived experiences, philosophy, stories of struggle, sadness and victory. We do this in an ecosystem,

much like a healthy manoomin ecosystem operates. We are in relation in such a way which allows for the creation and maximum absorption/learning of all of these crucial "nutrients" that we need. We diversify our methodologies and humanize our education in the way that we co-learn. The way that manoomin grows within a living community of beings, is akin to the way that this Indigenous Women's Manoomin Collective learns and teaches.

Aimée: When I think of this "work" it is a reflection of Indigenous feminist methodology. We come together to be and do. We spend time reflecting and talking but we also share in space. We encourage each other through challenges and successes. In my view this is a reflection of an ancient Anishinaabe kwe way of life. Historically we would not have divided out the labour of caring for children and cooking from the activities essential to harvesting berries or maple. We would have continued to work on our tools and clothes in our fishing and manoomin camps. Ceremony would have been part of our days and nights, regardless of physical location. And all the while we would have continued to support each other, share with each other and laugh. This has been an important element of our collective gathering. While in some ways our gatherings are generative, there is also an ability to co-exist without expectation, contribute what you can and to share in what you have with the collective. I have learned alot from each of the women who are part of this, including things I was not aware that I didn't know. And I carry their teachings with me where ever I go. And for that I am very grateful.

Jennifer: There is so much that we are doing together. At the core of all of our meetings is supporting Marie in reaching her higher education goals. Each of us has provided some insight

into how this work can be framed in a way that connects to wild rice, the environment, language, the seasons, and the environmental system. Collectively, we are sharing teachings and values that have been passed on to us.

What has been inspiring was listening to our women from the north and observing their presence. On an individual level, their way of being has helped me to hide less of myself in academic and workspaces. We are also sharing our individual experiences and how we are either processing or not processing misogyny in our own communities, racism in the systems we work in, and the want/need to empower women. This work has created a safe space for us to share and support each other and also to eat some really great food.

Allison: We discuss a multitude of topics that all revolve around manoomin, food, and women's knowledge. This knowledge helps us grow as individuals and a group. Because we come from so many different disciplines it provides a very robust view point on the items we discuss.

We are also in a way, a support group that assists and supports each other through the difficult issues women face in our world today. Often reflecting on teachings and knowledge of our ancestors to understand the women's role in manoomin, food sovereignty, nibi, leadership and the power and voice we need to have in these fields. How the woman's role is very important in our world as Anishinaabe people and that these roles are important for the physical and cultural health of our air, land, water and all our relatives that share it with us.

3. **Actions that have come about because of this group? What are the results of what we do together? Have you felt supported in your own work for example? Has this group impacted**

the things that you do in your own work?

Allison: The biggest results I notice from this group is the confidence and knowledge it gives me to continue to work towards improving knowledge of Manoomin scientifically and in a good way within Tribal Natural Resources Departments.

It has encouraged me to take the risk and host the first Manoomin research symposium in Michigan, and hope that we can answer and collaborate on research throughout the Great Lakes Region on Wild Rice. Even though this was delayed due to the COVID-19 pandemic, I hope it will still be held at a later date.The reason to host the Manoomin research symposium was to discuss ongoing research, and studies from Tribal Natural Resources Departments, universities, states, and federal agencies to find common ground, discuss current research, share knowledge and hopefully form new partnerships. The idea for this came after having many frustrating conversations with state of Michigan staff, and federal agencies who did not understand the capacity and knowledge contained in Tribal Natural Resources Departments. It was an opportunity for the groups working with manoomin in the Upper Great Lakes Region to have higher level discussion on the food that grows upon water, without rehashing why it is important, or past travesties and harm caused by past and current university work. The hope is to eventually combine westernize work with traditional knowledge to understand why we are unable to support or fund just any study when working hand in hand with Manoomin.

This group has also given me the courage to become a larger voice for not only Manoomin or Nibi, as I have learned more and more about a variety of topics that are all interrelated from such a vast variety of knowledge keepers. Overall this group has increased my capabilities, and ability to take my ideas and run with them without being afraid of others

saying that they are not good enough. I hope through this I can encourage more Indigenous Women in Michigan to take on leading roles within their Natural Resources Departments on Mannomin work.

Jenny: The group helped me work through the frustration and anger of what was going on with my professional self, but more importantly, the other gatherings, like the Women's and Water gathering at Whiteshell, reaffirmed my spiritual connection and responsibilities I have as an Anishinaabekwe to nibi and manoomin. Without this group, I think I would have left GLIFWC angrier and less inclined to prioritize natural resource management or even environmental policy in general as areas to focus on in my work in promoting health equity as I moved forward with my MPH.

The relationships I made with niijikweg (my fellow women) in this collective have also been so inspiring. It has been a privilege to share in the many types of exchanges we've made with each other, like knowledge sharing and offering support to help others overcome challenges. I've been amazed at all of the different ways that our Collective members have grown into the roles of advocating for manoomin and other women's knowledge to be heard. The healing and growth has led me to my current position of working as a contractor for a federal agency where I agreed to be the technical lead on their manoomin restoration projects. This way, I will continue being a steward for manoomin and offering what I can to my Anishinaabe relatives in restoration work. Additionally, the experience of connecting with these other women has also instilled confidence in me that my work, knowledge, and community building does support the authority I may have in this new role as a lead.

Simone: The extension of sisterhood is the first thing that comes to mind. This group of women is like an invisible posse that I feel standing with me in support and solidarity. It strengthens, enriches and informs my work in multiple ways. The women on this committee have agreed to be part of my work at the Indigenous Environmental Network, exploring indigenous feminisms in relation to environmental protection. For example, I help coordinate a biannual conference on water and wild rice with the University of Minnesota. I've done 3 so far. This past year as we explored potential themes, in large part due to my involvement in this Women's Manoomin Collective, we settled on: "*Ikwe Oganawendaan Nibi miinawaa Manoomin"* or in English, Women Protecting our Water and Wild Rice. Many of the women in this group attended, presented, and brought some of their own extended community of women to be a part of the conference. As a result, we have been invited to assist in other efforts centering women, water and manoomin. When ever you have a strong and determined group of women working collectively good things follow, and it just builds from there.

Aimée: While there are some very concrete outcomes of the collective, including supporting each others work: Marie's dissertation process, the Nibi Gathering and the *Ikwe Oganawendaan Nibi Miinawaa Manoomin*, there is still more to come. I think of this collective as doing the work of planting the seeds for future harvest. I know that my ancestors looked after nibi and manoomin so that they would feed themselves and their families, but that they also thought of us in the future. They were also planting seeds for what would be harvested in the future to help sustain us. They maintained the manoomin crops by gently harvesting and replanting the beds. So, when I participate in this collective, I think of what these ancestors

prepared for us, and how the work we are doing is preparing and protecting this knowledge and way of life for those who will come after us. This includes reclaiming women's space in a patriarchal world. We are, after all, the descendants of our most resilient matriarchs.

Jennifer: We have built a foundation for life-long friendships that are immersed in mutual respect and understanding of where we are at in both our professional, personal, and spiritual lives. As I write this, I think I learned that it is okay that these three things are intertwined; they can co-exist. This group provided a support system and an outlet for sharing issues that western systems are unable and possibly unwilling to understand. For my local work, this group connected me to community based and scholarly resources to help guide my work on Indigenous place-knowing. On an individual level, this group has strengthened my commitment to language and digging deeper into the Indigenous meaning behind our words, the teachings, the stories, and the systems to which a single word can be. I specifically remember Sherry's teachings about the word maanomin and all the teachings in this one word. It has been my goal to not only engage with this knowledge but to pass it on in my college language courses and to the youth group that I work with.

Sherry: For me it's renewing my own interest and nudging my memory on our sacred stories. Remembering the stories of manoomin and our original foods, how they came from that spiritual realm to give and sustain our lives. How important and even more relevant our sacred stories are especially with what is occurring within nature eg climate change and human change. It's also about the work we do together and supporting each other's work, NIBI

gathering, "*Ikwe Oganawendaan Nibi miinawaa Manoomin"* or in English, Women Protecting our Water and Wild Rice symposium. And for me this work affirms that we are on the good and right path of renewing our original roles as Matriarchs: Grandmothers, Mothers, Aunties, Sisters. This supports and validates other Anishinaabekwe work I have been a part of: Makoosekawin, the girls/women's gathering we have held and offered publicly since 2011.

Biskaabiiyang

Within Anishinaabe theoretical foundations about knowledge, there is the concept of biskaabiiyang (Genisuz 2009). Biskaabiiyang means to return to ourselves (Genisuz 2009: 9-10). However, as Simpson (2006) explains, "biskaabiiyang does not literally mean returning to the past, but rather recreating the cultural and political flourishment of the past to support the well-being of our contemporary citizens (para. 7). Biskaabiiyang also occurs at both the individual and community levels and is a process that "means reclaiming the fluidity around our traditions, not the rigidity of colonialism" (Simpson 2006: para. 8). Genisuz (2009) explains the biskaabiiyang approach to research is a "research process through which Anishinaabe researchers evaluate how they personally have been affected by colonization, rid themselves of the emotional and psychological baggage they carry form this process, and then return to their ancestral traditions" (9). In explaining how she used a biskaabiiyang research approach to examine Gookooko'oo (owls) and their role in Anishinaabe Culture, Geniusz shows how essential the first step of self-examination is in the biskaabiiyang research process as "colonization has caused many Native peoples to look at their cultures from the perspective of the colonizer" (2012: 243). This first step for the Collective was an iterative process that was at the core of what we did together. We examined how settler colonialism and heteropatriarchy

was affecting our lives and worked to create a space where we could support each other's work as we worked in our different ways to overcome it's influences.

Decolonizing Dissertation Research (By Marie)

This part of my dissertation also became a research project in a possible way how to decolonize dissertation research. By decolonization, I mean centering Indigenous, in this case Anishinaabe, research design for the benefit of Indigenous communities like Linda Tuhiwai Smith in *Decolonizing Methodologies* (1999). The research process was very participatory. The idea for the research questions came from conversations over years with different Anishinaabe and Menominee women and each step of this chapter was done collaboratively with me as the facilitator. Four of the members were able to come to my dissertation proposal presentation at Michigan State University and sit at the table just like my MSU faculty members. To have my co-researchers in the room changed the tone of the discussion. It wasn't an abstract discussion about the benefits or risks to the community. The community was in the room for the discussion and could not only speak for themselves but could in real time design or tweak the research questions and methods that made sense for them. The discussion after my presentation for my dissertation proposal was one of my favorite times after a presentation. I knew that I had done my job for creating a great space, when two of the members who had been the most cautious about speaking up, joined the conversation in the room about how to tweak the design. Everyone was pitching in and making something beautiful. I was cautioned by a faculty member to be careful in doing a community-based participatory approach for my dissertation because it can take a long time and I might not graduate for years. I told that

professor, “Well, it’s the way this work should be done and it will take the time that it needs to take.” In the case of the Collective there is no other way the work could be done. Also, in the case of Collective the rest of the members are very willing to work around my academic deadlines as long as I am transparent about my needs and work with them.

This does not mean that there aren’t challenges with an Indigenous community-based participatory project. These projects by their very nature are based on relationship building. The seven members are located across the Great Lakes in three states, two countries and two time zones. It can be a challenge to find times to meet and even when we meet we most frequently are able to meet over Zoom but our conversations are much more deep and rich when we are able to meet face to face. I have noticed that we are even more relaxed and the conversations seem to flow even more when we can on the land such as at the Nibi Gathering at Whiteshell Provincial Park in Manitoba, Canada. However, even with these challenges it has been healing to have a dissertation centered on Anishinaabe methods and epistemologies.

Conclusion: Indigenous Research Methodologies and Epistemologies

Indigenous knowledges depend not only on which community they are coming from, but also the gender of the knowledge holders. As such manoomin biskaabiiyang projects in the Great Lakes therefore are also gendered and insights into these projects can be gained when using Indigenous, feminist, and Indigenous feminist research methodologies and epistemologies. These methodologies and epistemologies were used as strategies for combating colonialism in this dissertation research as “the colonized status of Indigenous women provide us with a unique vantage point from which to analyze colonizing power” as a

result “Indigenous women’s experiences are integral to decolonizing knowledge production” (Kermoal and Altamirano-Jimenez 2015: 4 and 7).

Harding’s (2008) “feminist standpoint theory” is concerned with “the view from women’s lives” as a standpoint from which to begin inquiry (2). Haraway’s (1991) work shows us “situated knowledges” or how all knowledge is situated and that each one of us only has a part of the picture because are our knowledges are produced within historical and cultural contexts. TallBear (2014) explains this means that “hypotheses, research questions, methods, and valued outputs, including historical accounts, sociological analyses, and textual interpretations must begin from the lives, experiences, and interpretations of marginalized subjects” (3). As Indigenous women and two spirited peoples’ voices have become marginalized in the academic literature surrounding manoomin restoration, an essential aspect of my dissertation research was to situate that knowledge within the context of manoomin restoration work.

Indigenous women scholars have used their own Indigenous knowledge as well as feminist scholars work to create their own Indigenous feminist approaches to research. This approach positions Indigenous women’s knowledge as the starting point of inquiry. This can be a strategy for examining and mitigate the damage of patriarchy that is a fundamental part of settler colonialism (Meissner and Whyte 2017). As, Kermoal and Altamirano-Jimenez (2015) explain in their edited book *Living on the Land: Indigenous Women’s Understanding of Place*, “to ignore the specific ways in which Indigenous women know is to undermine them as active producers of knowledge that participate in complex socio-environmental community processes” (4). Aboriginal Australian scholar, Moreton-Robinson (2000) developed an “Indigenous women’s

standpoint approach" informed by Harding's (2008) and other feminist scholars work but using Indigenous women's knowledge. This approach was used in the dissertation to explore settler colonialism's impact on gender systems and knowledge production (Kermoal and Altamirano-Jimenez 2015: 9).

The Indigenous Women's Manoomin Collective has shown that from conversations with Indigenous women and two spirited people in the Great Lakes, it appears that the production of their knowledge in relation to manoomin is not being valued. While at one time, seeming to ignore women's knowledge in the public was a strategy for dealing with male settlers, the devaluing of women and their contributions seems to now permeate the world of manoomin restoration, in both public and private spheres. As a result, the Indigenous Women's Manoomin Collective has worked to reimagine what women's knowledge looks like in those spheres and how to support each other during that processes. Our story is one that does not end with Marie's dissertation but will continue on for a long time. Previously, we would have been given spaces at such places like our manoomin camps but since those have mostly gone away with settler colonialism, we have found we must create those regenerative spaces ourselves.

Conclusion

Whose knowledge matters? Whose knowledge system is shifting? Did Anishinaabe gender systems shift? Through the use of the manoomin methodology, this dissertation sought to start to answer those research questions. Most importantly, did this dissertation "feed" the communities that it worked with?

In Article 1, through the lenses or frameworks of food sovereignty and settler colonialism, I took a historical analysis approach to answering these questions by looking at how the impacts of the commodification of manoomin impacted Anishinaabe in the Great Lakes in the U.S. and Canada through three key turning points. These turning points were: 1) wild rice grown on a farm in Minnesota for the first time, 2) the involvement of the University of Minnesota and 2) wild rice grown in California for the first time. The impacts of how the commodification of wild rice shifted Anishinaabe gender roles was also explored. The frameworks and food sovereignty and settler colonialism allow us to see the disappearances and dilemmas of settler colonialism that are work while showing the food sovereignty strategies of Anishinaabe communities use to combat settler colonialism.

While other scholars such as Raster and Hill (2016) have explored parts of the history of commodification of manoomin I could not find any sources where a scholar has provided the full story of how manoomin was commodified including the heart breaking story how this plant relative from the Great Lakes reached California in two coolers. Ideally, I hope Article 1 will provide some foundation for other researchers to continue to fight for manoomin in their communities.

In Article 2, I conducted a systematic analysis of 376 newspaper articles from the Great

Lakes. Two of the most interesting results from the systematic analysis was 1) evidence that that only one Indigenous woman had been interviewed about manoomin restoration projects from 1980-2020 while there just was a conference in October 2019 with many women who work in that field and2)that the number of articles that were coded as "Both Indigenous knowledges and scientific knowledges" were very close to the same number of codes. Indigenous feminist theories and settler colonialism gave us some insights into why we might be getting these results. The theme of the 6th Bi-Annual Nibi Miinawaa Manoomin Symposium at White Earth Nation in October 2019 being Women Protecting Our Water and Wild Rice where many Indigenous women experts, including an Indigenous woman keynote speaker, Brenda Child, might be an indicator of some slow shifting of gender roles.

, The seven members of the Indigenous Women's Manoomin Collective came together to write Article 3. While I open and close the Article with some reflections and writing, the majority of the writing was written collectively where each of the members individually answered four questions and they we tried to weave them together like we were sitting at a kitchen table together. We did not want to distill anyone's voice so instead of offering summaries of the answers to the questions we kept the full edited answers in so everyone's voice could be heard. This gives Article 3 the appearance of an interview manuscript at times perhaps, but I love that it has all our voices there instead of just an "expert" researcher analysis. I think this can be a way one way to decolonize research by making sure that the voices of those that are co-researchers are heard.

The work of the Collective will continue after the dissertation. We will continue to try to figure out what is the hull (has containments) and the grain (what feeds us). We have created a

space that heals us by building relationships that help us to navigate situations that we find ourselves in. In other words, manoomin has modeled for us how to nourish ourselves. We would have had these spaces before in spaces like manoomin camps but now we use virtual spaces such as Zoom.

Through the three major steps of the manoomin research methodology of step 1) step 2) processing, and step 3) eating, this dissertation has shown me that when uncovering the discourse of power dynamics at work in biskaabiiyang projects, we can locate the source of its assumptions and as well locate places for Indigenous people to start working towards a paradigm for research that would truly be based on their knowledge. As a result, there are spaces, like the Indigenous Women's Manoomin Collective, that Indigenous researchers and those that would like to collaborate with Indigenous researchers to conduct research regarding manoomin and other areas of the environment can find to make incremental change to this power dynamic.

REFERENCES

REFERENCES

Aiken, S.G., P.F. Lee, D. Punter, and J.M. Stewart. 1988. *Wild Rice in Canada.* Toronto: New Canada Press Ltd.

Avery, K. and T. Pawlick. 1979. "Last Stand in Wild Rice Country" in *Harrowsmith* vol. 19 III, 7:33-53 & 107.

Arquette, M., M. Cole, K. Cook, B. LaFrance, M. Peters, J. Ransom, E. Sargent, V. Smoke, and A. Stairs. 2002. "Holistic Risk-Based Environmental Decision-Making: A Native Perspective." *Environmental Health Perspectives* 110 (2):259-264.

Benton-Banai, Edward. 1979. The Mishomis Book: Voice of the Ojiway. St. Paul, MN: Indian Country Press.

Borrego, Maura, Margaret J. Foster, and Jeffrey E. Freyd. 2014. "Systematic Literature Reviews in Engineering Education and Other Developing Interdisciplinary Fields." *Journal of Engineering Education*, 103 (1): 45-76.

Bureau of Indian Affairs. 2014. Tribal Habitat Restoration and Invasive Species Control: Circle of Flight Program and Great Lakes Restoration Initiative.

Carroll, Clint. 2014. "Native Enclosures: Tribal National Parks and the Progressive Politics of Environmental Stewardship in Indian Country." Geoforum 53: 31-40.

Cozzetto, K., K. Chief, K. Kittmer, M. Brubaker, R. Gough, K. Souza, F. Ettawageshik, S. Wotkyns, S. Opitz-stapleton, S. Duren, P. Chavan. 2013. "Climate Change Impacts on the Water Resources of American Indians and Alaska Natives in the U.S." Climate Change. 120:569-584.

Child, Brenda. 2012. *Holding Our World Together: Ojibwe Women and the Survival of Community*. New York, NY: Penguin Library of American Indian History.

David, Peter. 2013. Manoomin (Wild Rice) Abundance and Harvest in Northern Wisconsin 2011. Great Lakes Indian Fish and Wildlife Commission.

Densmore, Frances. 1929. *Chippewa Customs*. St. Paul: Minnesota Historical Society Press.

DeLisle, Susan. B. 2001. Coming out of the shadows: Asserting identity and authority in a layered homeland: The 1979-82 Mud Lake wild rice confrontation. Masters Thesis. Queen's University.

Edelman, Marc. 2014. "Food Sovereignty: Forgotten Genealogies and Future Regulatory Challenges." Journal of Peasant Studies 41(6): 959-78.

Fisher, Katherine. 2015. “A Bibliography Research Plan: Indigenous Feminism. University of Hawaii at Manoa.

Geniuz, Wendy Makoons. 2012. “Gookooko’oog: Owls and Their Role in Anishinaabe Culture.” In *Papers of the Fortieth Algonquian Conference: Actes du Congrès des Algonquinistes*, 241-265.

---------. 2009. *Our Knowledge Is Not Primitive: Decolonizing Botanical Anishinaabe Teachings.* Syracuse, NY. Syracuse University Press.

Grey, Sam. and Raj Patel. 2015. “Food sovereignty as decolonization: some contributions from Indigenous movements to food system and development politics.” *Agriculture and Human Values* (32): 431-444.

Harding, Sandra. 2004. “How standpoint methodology informs philosophy of social science.” In *The Blackwell guide to the philosophy of the social sciences*, edited by S. Turner and P.A. Roth, 291-310.

Haraway, D. J. 1991. “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” In *Simians, Cyborgs, and Women: The Reinvention of Nature.* Routledge, New York and London, 189-91

Hayes, P.M., R.E. Stucker, and G. G. Wandrey. 1989. “The Domestication of American Wildrice (Zizania palustris, Poaceae).” *Economic Botany* 43(2): 203-214.

Huambachano, M. A. 2015. Food Security and Indigenous Peoples Knowledge: El Buen Vivir-Sumaq Kawsay in Peru and Te Atanoho, New Zealand, Maori-New Zealand. *Food Studies: An Interdisciplinary Journal* 5(3): 33-47.

Karp, David. 1999. “California Wild Rice.” Los Angeles Times. Nov. 10, 1999. https://www.latimes.com/archives/la-xpm-1999-nov-10-fo-31818-story.html

Kimmerer, Robin Wall. 2002. “Weaving Traditional Ecological Knowledge into Biological Education: A Call to Action.” *BioScience* 52(5): 432-438.

———. 2013. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants.* Milkweed Editions: Minneapolis, Minnesota. University of Minnesota Press.

Larson, Beatrice. 1918.The Embryology of Zizania palustris L. University Minnesota Master’s of Science Thesis.

LaDuke, Winona. 2007. “Ricekeepers: A struggle to protect biodiversity and a Native American way of life.” *Orion Magazine*. July/August.

Louis, Renee. Pualani. 2007. “Can You Hear Us Now? Voices from the Margin: Using Indigenous Methodologies in Geographic Research.” *Geographical Research* 45(2): 130-139.

Martinez, David. 2001. The American Indian Intellectual Tradition: An Anthology of Writings from 1772 to 1972. Ithaca, NY: Cornell University Press.

Meissner, Shelbi Nahwilet and Kyle Powys Whyte. 2017. “Theorizing Indigeneity, Gender, and Settler Colonialism.” In *Routledge Companion to the Philosophy of Race*. Edited by P. Taylor, L. Alcoff, and L. Anderson, 152-167. Routledge.

Moon Stumpf, Linda. 2000. “In Wilderness There is Life: An American Indian Perspective on Theory and Action for Wildlands.” USDA Forest Service Porceedings RMRS-P-14: 98-102.

Moreton-Robinson, Aileeen. 2000. *Talkin’ Up to the White Woman: Indigenous Women and Feminism.* University of Queensland Press.

Morrison, Dawn. 2011. “Indigenous food sovereignty: a model for social learning.” In *Food sovereignty in Canada: creating just and sustainable food systems*, edited by. H. Wittman, A. Desmarais and N. Wiebe 2011, 97–113. Halifax, NS: Fernwood Publishing.

National Aboriginal Health Organization. 2007. *OCAP: Ownership, Control, Access and Possession. Sanctioned by the First Nations Information Governance Committee, Assembly of First Nations.* Ottawa: National Aboriginal Health Organization.

Nadasdy, Paul. 2005.The Anti-politics of TEK: The Institutionalization of Co-management Discourse and Practice. Anthropologica 47(2): 215-232.

Norrgard, Chantal. 2014. *Seasons of Change: Labor, Treaty Rights and Ojibwe Nationhood*. Chapel Hill, NC: University of North Caroline Press.

Oelke, Ervin A., J. Grava, D. Noetzel, D. Barron, J. Percich, C. Schertz, J. Strait, and R. Stucker. 1982. “Wild Rice Production in Minnesota.” University of Minnesota. Agricultural Extension Service. Extension Bulletin 464.

Oelke, Ervin A., T.M Teynor, P.R Carter, J.A. Percich, D.M. Noetzel, P.R. Bloom, R.A. Porter, C.E. Schertz, J.J. Boedicker, E.I. Fuller. N.D. Wild Rice. Corn Agronomy. Alternative Field Crops Manual.

Pearson, Thomas E. 1997. “The Wild Rice Harvest at Bad River: Natural Resources and Human Geography in Northern Wisconsin.” In *Wisconsin Land and Life*, edited by Robert C.

Ostergren and Thomas R. Vale, 505-520, The University of Wisconsin Press.

Ralstin-Lewis, D. Marie. 2005. “The Continuing Struggle Against Genocide: Indgenous Women’s Reproductive Rights.” *Wicazo Sa Review*. 20(1):71-95.

Simpson, Leanne. 2006. Gdi-nweninaa: Our Sound, Our Voice. In *Learn, Teach, Challenge: Approaches to Indigenous Literatures*. Edited by Deanna Reder and Linda M. Morra. Wilfrid Laurier University Press.

Smith, Linda Thuiwai. 2001. *Decolonizing Methodologies: Research and Indigenous Peoples*. Zed Books.

Stote, Karen. 2012. “The Coercive Sterilization of Aboriginal Women in Canada.” *American Indian Culture and Research Journal.* 36(3):117-150.

Swazo, N. 2004. “Research integrity and rights of indigenous peoples: appropriating Foucault’s critique of knowledge/power.” *Studies in History and Philosophy of Biological and Biomedicial Sciences* 36: 568-584.

TallBear, Kim. 2013. *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*. Minneapolis, MN: Univ Of Minnesota Press.

----------. 2014. “Standing with and speaking as faith: A Feminist-Indigenous approach to Inquiry.” *Journal of Research Practice* 10(2): Article N17.

Tuck, Eve, and K. Wayne Yang. 2012. “Decolonization Is Not a Metaphor.” Decolonization: Indigeneity, Education and Society 1(1): 1-40.

USDA. 1996. Wild Rice: An Economic Assessment of the Feasibility of Providing Multiple-Peril Crop Insurance. Office of Risk Management. June 24, 1996.

Raster, Amanda and Hill, Christina Gish. 2017. “The dispute over wild rice: an investigation of treaty agreements and Ojibwe food sovereignty.” *Agric Hum Values* 34: 267: 261.

Stiles, Kaelyn, Ozlem Altiok and Michael Bell.2010. “The ghosts of taste: food and the cultural politics of authenticity”. Journal of Agriculture, Food, and Human Values Society 28(2):225-236.

Weber-Pillwax, Cora. 2001. “What is Indigenous Research?” *Canadian Journal of Native Education.* 5(2): 166-174.

Winchell, Elizabeth. H. and Reynold P. Dahl. 1984. Wild Rice Production, Prices, and Marketing.

Miscellaneous Publication 29. Agricultural Experiment Station University of Minnesota.

Wittman, H., A. A. Desmarais, and N. Wiebe. 2010. *Food Sovereignty: Reconnecting Food, Nature and Community.* Oxford: Pambazuka Press.

White, Code. 2016. "The CCC Indian Division." Prologue Magazine. National Archives. 48(2). https://www.archives.gov/publications/prologue/2016/summer/ccc-id.html

White Earth Nation. 2011. White Paper, *Preserving the Integrity of Manoomin in Minnesota* written for "People Protecting Manoomin: Manoomin Protecting People" symposium held at Mahnomen, Minnesota on the White Earth Nation during August 25-27, 2009.

Whyte, Kyle. 2018. "What Do Indigenous Knowledges Do for Indigenous Peoples?" *Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustainability.* Edited by M.K. Nelson and D. Shilling, 57-82. Cambridge University Press.

---- 2017."Food Sovereignty, Justice and Indigenous Peoples: An Essay on Settler Colonialism and Collective Continuance. Oxford Handbook on Food Ethics." Edited by A. Barnhill, T. Doggett, and A. Egan. Oxford University Press, Forthcoming.

-----2016. "Indigeneity and U.S. Settler Colonialism. Oxford Handbook of Philosophy and Race." Edited by N. Zack, 91-101. Oxford University Press.

Wilson, Shawn. 2001. "What is an Indigenous Research Methodology?" *Canadian Journal of Native Education*. 25(2): 175-179.

Vennum, Thomas. 1988. Wild Rice and the Ojibway People. St. Paul: Minnesota Historical Society Press.

Zilberstein, Anya. 2015. "Inured to Empire: Wild Rice and Climate Change." The William and Mary Quarterly, 72(1): 127-158