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EFFECTS OF PCB CONTAMINATION ON THE ENVIRONMENT AND THE
CULTURAL INTEGRITY OF THE ST. REGIS MOHAWK TRIBE IN THE
MOHAWK NATION OF AKWESASNE

A Dissertation Presented

by

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ABSTRACT

The following research project examines the effects of polychlorinated biphenyls (PCBs) on the environment and the cultural integrity of the St. Regis Mohawk tribe in the Mohawk Nation of Akwesasne. This indigenous community has been subjected to widespread long-term industrial pollution from nearby toxic hazardous waste facilities and Superfund sites.

The Mohawk Nation of Akwesasne has the distinction of being the only tribe whose officially recognized territory straddles the border between the United States and Canada. Using qualitative methodologies, coupled with an interdisciplinary framework, this study successfully engages with Akwesasne community members to explore such issues as bottom-up approaches to addressing complex environmental issues, by gaining a comprehensive understanding of organizational structures and tribal governance networks. This study also identifies a clear parallel between the Mohawk Nation of Akwesasne's struggles and history of environmental justice efforts in the U.S. by articulating the effects of environmental degradation on their cultural integrity, in addition to surfacing themes of resistance and resilience in the community as building blocks for future action.

The research project focuses on the place of the community's voice in the transnational public policy response to PCB contamination in the Mohawk Nation of Akwesasne. Three case studies were conducted in environmental organizations on the Mohawk Nation territory: the St. Regis Mohawk Tribe Environment Division, the Mohawk Council of Akwesasne, and the Akwesasne Task Force on the Environment. These environmental organizations have been working to protect the environment for approximately three decades. A case study analysis relies on data collected from interviews with staff members to determine how they organized themselves to address the environmental and social disruption caused by exposure to harmful chemical pollutants.

Strong parallels can be drawn as a result of an analysis of environmental justice literature, since native communities have not, traditionally, been included in the scholarly academic literature on the Environmental Justice Movement in the United States. In addition to information gathered from institutional policy actors and related stakeholders, in-depth interviews with community members revealed a community framework for future policy development and action. Finally, the research focuses on how those community voices articulate the impacts of PCB contamination on the natural resources in the area, and as a result, on the ability of the St. Regis Mohawk tribe to maintain their culture, heritage, ceremonies, and traditional way of life.

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CHAPTER 1

INTRODUCTION TO DISSERTATION

This dissertation examines the effects of harmful chemical pollutants, called polychlorinated biphenyls, on the environment and the cultural integrity of an aboriginal tribe called the St. Regis Mohawks. The St. Regis Mohawks settled along the banks of the St. Lawrence River in the mid-eighteenth century. When they first arrived, they called their new settlement the Mohawk Nation of Akwesasne, or place where the partridge drums. The Akwesasne community currently has a population of between 7,000 and 10,000 people; the community consists of St. Regis Mohawks and other individuals, families, clans, governments, and people residing in the Mohawk Nation (Akwesasne Task Force on the Environment, 2011). It is the only official tribe that straddles the border between the United States and Canada.

In the early 1950's General Motors (GM) built a die casting facility adjacent to the Mohawk Nation of Akwesasne. The manufacturing plant mainly produced casts used for automotive parts. GM used polychlorinated biphenyls in the manufacturing process; however, they engaged in illegal dumping of these harmful pollutants for nearly three decades. As a result, chemical lagoons and toxic sludge were found on the GM site, and they were subsequently investigated by the New York State Department of Environmental Conservation in the 1980s. The investigation revealed that they had been illegally dumping PCBs on the GM property and the company was subsequently placed on the National Priorities List in the United States as a Superfund site, or toxic hazardous waste facility.

In 2009, President Barak Obama signed the largest environmental trust in United States history. The trust was enacted under the Comprehensive Environmental Response,

Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and state environmental laws. The trust was established as a result of the bailout of the automobile industry during that period's recession. Due to declining revenues, one of the nation's largest automobile manufacturers, General Motors, went bankrupt. The debtor, Motors Liquidation Company (Old General Motors), formerly known as General Motors Corporation (GM), agreed to remediate thirteen of its manufacturing plants throughout the U.S. (Davis, Richardson, Rivera, & Sullivan, 2011). These plants needed to be cleaned up due to toxic hazardous waste contamination from the GM facilities (U.S. Department of Justice, 2010).

Information contained in the following chapters is based on a qualitative study recently conducted in the Mohawk Nation of Akwesasne. The study was designed to compare the U.S. and Canadian governmental responses to PCB contamination in the Mohawk Nation, identify strategies that St. Regis Mohawk tribe members developed to address the social and environmental decline caused by exposure to toxic hazardous waste, and examine the effects of PCB contamination on the ability of the St. Regis Mohawk tribe to maintain its cultural integrity over time.

Chapter 1 is based on a comparative analysis of the governmental response to chemical pollution across borders. This particular aspect of the study relied on an interdisciplinary approach, drawing from the academic literature in such fields as Public Administration, Sociology and Natural Resources. The main objective was to compare and contrast environmental law and public policy in a transnational setting, specifically regarding PCB contamination from the GM plant.

The first chapter provides the reader with background information to contextualize the study, including a historical overview of economic development and industrial initiatives in both

the United States and Canada, a discussion of the harmful effects of PCBs, with a primary focus on those governmental agencies that deal with issues related to toxic hazardous waste contamination (such as the Environmental Protection Agency and Environment Canada).

The methods used for this inquiry included grounded theory, a lens that enables researchers to identify common emergent themes and concepts. Grounded theory is based on the study of specific data sets through inductive reasoning, usually moving from the specific to the general. I also engaged in participant observation. Participant observation is a core component of the anthropological tradition. Anthropologist Clifford Geertz states that “thick description” is a “critical part of ethnography” (Neuman, 2006, p. 382).

Interviews with twenty-five Native American and First Nations Akwesasne community members were conducted, in addition to other related field studies and qualitative research activities. In addition, five interviews were conducted with related policy actors and stakeholders from within the St. Regis Mohawk tribal governance network.

The main objective was to understand the transnational policy response utilizing a bottom up approach. Traditionally, decision makers in the public policy domain have relied on a top down strategy when attempting to develop public policy. Understanding these complex environmental issues from the perspective of those individuals that have been impacted the most was of particular importance, since these complex environmental issues will invariably be decided in the public policy domain.

Chapter 2 focuses on the strategies that Akwesasne community members developed to ensure that their rights were being protected, and to hold GM, the U.S., and the Canadian government accountable for ecosystem contamination and a significant loss of natural habitat. In order to understand the methods the tribe used to address the environmental contamination, case

study and grounded theory methods were utilized. These methodologies were conducted within three environmental organizations on the Mohawk Nation territory: the St. Regis Mohawk Tribe Environment Division (SRMT), the Akwesasne Task Force on the Environment (ATFE), and the Mohawk Council of Akwesasne (MCA).

One of the main issues that concerned Akwesasne community members was the impact of the pollution on human health. As a result, Chapter 2 contains an overview of health outcomes reported by tribe members, highlighting their perceptions about illnesses they believed were directly linked to exposure to PCBs. Although health was not the main focus of this research project, it was important to include this information, mainly because it was one of the main factors that motivated tribe members to mobilize and engage in advocacy and direct action initiatives.

Interviews with fifteen organizational members, in addition to approximately fifteen hours of participant observations within each organization, were conducted in order to understand how the tribe organized itself when faced with the threat of harmful chemical pollution. This was even more challenging since Akwesasne community members had to negotiate with stakeholders from GM, other local polluting industries, New York State, U.S. and Canadian governmental agencies, and with regional provincial policy actors from Quebec and Ontario in Canada. This is mainly because the Mohawk Nation is intersected by the border at numerous locations on the U.S. mainland.

Chapter 4 highlights the effects of PCBs on the culture and traditional way of life of the St. Regis Mohawk tribe. This research was based on interviews with the same twenty-five interview participants; however, specific questions about native culture and traditions were asked during the interview process.

Chapter 5 highlights the significance of the study, providing recommendations for Native American, First Nations tribes and the U.S. and Canadian governments. The chapter summarizes the seriousness of health concerns related to toxic hazardous waste exposure and the need to prioritize it as a serious public health issue. It also discusses the necessity for the U.S. and Canada to be more responsive to the community's ability to access vital information about food safety and security. One way to accomplish this would be to designate funding for community-based tribal health clinics and to disseminate related information and scientific data. Chapter 5 also emphasizes the use of a bottom up approach so that future public policy includes the authentic voices of indigenous communities.

The primary methodologies utilized to understand cultural impacts were Ethnography and Community Based Participatory Research. Ethnography has a long standing tradition within the field of Anthropology and, therefore, it was an excellent methodological tool that was closely aligned with the topic under study. Community Based Participatory Research, otherwise known as Action Research, ensured that the research was inclusive, while incorporating concepts related to cultural sensitivity, since aboriginal communities have historically been marginalized and subjected to undue hardship throughout the years.

The history of Native Americans and First Nations peoples is well documented. Indigenous communities in the U.S. and Canada have had to survive European colonization, exposure to disease, discrimination, and genocide. For over five hundred years, their land and treaty rights were violated, and their right to self-govern, institutionalized (Falkowski, 1992). Many communities of color have suffered a similar fate. Environmental racism, a phrase defined by Brulle and Pellow (2005), is the discrimination that occurs in environmental policy making,

based on “race,” and the development of regulatory processes and laws that “deliberately target people of color by establishing toxic waste facilities in their communities” (p. 3).

The main focus of social justice researchers in this area has been to examine the relationship between demographics and landfills and hazardous waste facility sitings; however, it was not until the 1980s that these issues were framed within the context of Environmental Justice (Pulido, 2000). While research findings based on the African American experience have been useful in understanding the Environmental Justice Movement (EJM), a void exists in the scholarly academic literature on environmental justice activities that occurred within Native American communities during the same timeframe (Liu, 2001), (Bryant & Hackman, 2005).

As a result of conducting research in the Mohawk Nation, I have become increasingly aware that conducting research in aboriginal communities can be challenging. This may be due, in part, to low population numbers on Native American reservations. Many tribes have been displaced from their original homelands, separating them into distinct sovereign nation-states. Without significant population numbers, it is difficult to gather relevant quantitative data that could then be generalized to the larger native population. To complicate matters, an overall mistrust of government officials and academic researchers is often the result of this type of historical oppression, resulting in native communities that are often suspicious of outsiders or non-natives. This can be a significant barrier for academic researchers, in native communities, particularly if tribe members are resistant to being counted or measured; these kinds of research activities may require approval from tribal chiefs or legal offices.

When I first visited the Mohawk Nation of Akwesasne, I was struck by how beautiful it was in this part of upstate New York, an area with rich biodiversity and an expansive landscape.

Driving up to Akwesasne through New York State on Route 37, I eagerly anticipated working with the tribe and developing new ideas for my research project.

During that time, I met with numerous environmental leaders and tribal officials; however, I soon realized that I had to first build a trust relationship with community members in order for them to even consider working with me. This process took more time than anticipated, nearly five years for us to reach an agreement that was subsequently approved by tribal officials.

I found that tribe members were particularly interested in one of the research activities I planned to utilize in my study, Community Based Participatory Research or CBPR. This research tool fosters inclusivity and mutual respect with research partners. Each time I mentioned using CBPR, tribe members appeared to be extremely interested in participating in the project. The terminology reflected a spirit of inclusivity, ensuring that the research would be mutually beneficial and collaborative.

At the beginning of the research project, I also listed several potential biases that I wanted to address in order to reduce the potential for research bias. One of the biases I identified was related to my own ancestry, since I am a person of African descent. I believed that I would be overly sympathetic with tribe members. I also thought that the tribe would automatically accept me because I was a person of color with a similar history of oppression. For this reason, I expected that I would be immediately welcomed into the community without any significant barriers or delays, based on my identity as a person of color.

I now realize that many of the biases I previously identified changed dramatically over time. I now believe that being an American non-native, with distinctly Western worldviews and paradigms, was more of a barrier than I had previously anticipated.

I was also naïve about native culture, based on prior assumptions I had about aboriginal people, their culture, their spirituality, and their traditional way of life. My beliefs about Native Americans and First Nations communities have now radically changed, mainly because I had not recognized that native societies have changed and evolved over time.

Perhaps the most important lesson I learned was that it is not always easy for researchers to predict, in advance, what particular biases will emerge; a more realistic approach would have been to understand that biases often emerge as time progresses.

The study also incorporated a philosophy based on Action Research, or Community Based Participatory Research. Data collected from interviews was based on a questionnaire that was later broken down according to individual interview responses for analysis. Responses from interviewees were collated under each individual question using Hyper Research qualitative software. In this way, I was able to organize, compare and contrast data sets.

One aspect of the study is related to an examination of the impacts of environmental pollution on the cultural integrity and traditional way of life of the St. Regis Mohawk tribe. The effects of chemical pollutants and toxic hazardous waste on the environment have been well documented; however, the effects of environmental hazards on the ability of tribes to maintain their cultural heritage have not been well understood, nor have indigenous tribes been included in the debate on native peoples' fundamental human rights.

While it is evident that Native Americans have faced considerable challenges in the past, maintaining their sovereignty has been the highest priority for most leaders. Sovereignty means that Native Americans have the right to control their cultural, economic, and political processes. Greaves (2001) states that defending and enhancing sovereignty is a struggle that figures into “countless decisions and programs on every tribal agenda” (p. 30).

CHAPTER 2

COMPARING THE TRANSNATIONAL POLICY RESPONSE TO PCB CONTAMINATION IN THE MOHAWK NATION OF AKWESASNE

ABSTRACT

From the 1950s to 1980s, General Motors (GM) operated a manufacturing plant adjacent to the Mohawk Nation of Akwesasne, an area that the St. Regis Mohawk tribe settled in the mid eighteenth century. The plant was later placed on the National Priorities List as a Superfund site, or toxic hazardous waste facility, after New York State investigators found that they had been illegally dumping polychlorinated biphenyls (PCBs) on the GM site for nearly three decades.

This study is based on interviews with twenty-five Akwesasne residents. The main goal is to compare the U.S. and Canadian response to PCB contamination in the Mohawk Nation of Akwesasne. The research utilized a bottom up approach based on qualitative methodologies such as grounded theory, incorporating open ended questions and standard probes. An analysis was conducted using Hyper Research qualitative software, in order to identify core themes and response frequency rates. As a result, eight key themes were developed. Research findings indicate that the majority of interview respondents agreed that the United States has been responsive, since much of the ecosystem restoration and toxic hazardous waste remediation has been addressed through the Environmental Protection Agency (EPA). In contrast, interviewees reported that Canada had not been as responsive as the United States, overall, even though it was clear that GM was located on the American side of the St. Lawrence River, and therefore, Canada did not take a lead role in the clean-up for this reason. Other findings include the overwhelming response from the majority of respondents -- that justice for tribe members meant that the GM site would need to be completely cleaned up and restored to its original state.

The study concludes that environmental policies should focus on long-term goals and elevate the discourse to include public health concerns. Increasing funding to prioritize these issues and incorporating a bottom up, multi-layered approach may be beneficial approaches to improving environmental decision making across borders in the future.

2.1 Introduction

In 2009, as a result of the bailout from the automobile industry, President Obama signed the largest environmental trust in United States history. The trust was originally enacted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and state environmental laws. As its revenues declined during the recession at the time, General Motors went bankrupt. In exchange for the bailout, Motors Liquidation Company (Old General Motors), formerly known as General Motors Corporation (GM), agreed to remediate thirteen of its U.S. manufacturing plants the company had contaminated with toxic hazardous waste (U.S. Department of Justice, 2010).

The GM Central Foundry received the largest share of the environmental trust, upwards of 120.8 million dollars. Located in upstate New York, near Hogsburg, this facility lies adjacent to an aboriginal community called the Mohawk Nation of Akwesasne. To comply with the federal mandate, the GM Central Foundry facility was razed and is undergoing toxic hazardous waste remediation (U.S. Department of Justice, 2010).

The unusual geographic location of the Mohawk Nation of Akwesasne places it in a unique category. It represents the only aboriginal tribe straddling the border between the United States and Canada. Many of the 7,000 to 10,000 residents of the current Akwesasne community descended from the ancestral St. Regis Mohawk tribe that settled along the banks of the St. Lawrence River in 1754. In addition to the St. Regis Mohawks, the community includes other individuals, families, clans, and governments (Akwesasne Task force on the Environment, 2011).

The GM facility, built in 1954, was used to manufacture die casts to make automotive parts. Hazardous toxic waste emissions from GM were released during the manufacturing process and contaminated the environment with harmful chemical pollutants such as

polychlorinated biphenyls (PCBs). These chemical pollutants created pools of sludge and chemical lagoons in and around the plant (Community Monitoring Handbook, n.d.). After nearly three decades of illegally dumping PCBs at the GM site, this toxic hazardous waste facility was placed on the U.S. National Priorities List (NPL) as a Superfund site. Several other industrial plants, including Reynolds Metals, Alcoa (an aluminum processing plant), and Domtar (a pulp and paper mill on the Canadian side of the St. Lawrence River) were located in the same area during the same period. (See Appendix A: Map: Mohawk Nation of Akwesasne, p. 125).

Although several U.S. and Canadian comparative studies related to the environment have been published (Selin & Vandevear, 2005), (Childs, (2010), (Bleser & Nelson, 2011), most of them are directly related to climate change. For this reason, a gap exists in the scholarly academic literature regarding the transnational policy response to toxic hazardous waste or PCB contamination. In addition, most of the scholarly work in the field of public policy is based on a top down approach. The following article is based on a qualitative study that draws from data gathered utilizing a bottom up comparative policy analysis. While developing and implementing environmental policy based solely from the vantage point of governmental policy actors is useful, it is equally important to understand these complex environmental issues from those that have been impacted the most. The study focuses on data collected from twenty-five Native American and First Nations community members that reside in the Mohawk Nation of Akwesasne. Using qualitative methodologies can be particularly useful in these kinds of studies because they can help researchers “communicate someone else’s experience of the world in his or her own words” (Patton, 2002, p. 47).

2.2 History

Rachel Carson's popular best-selling book on pesticides, *Silent Spring* (1962), was instrumental in raising the public's awareness of pollution in the twentieth century (Bevington, 2009). Carson's book was a major catalyst for change and it contributed to a reevaluation of social institutions; however, this period also represented a clash between forces interested in economic growth and those that promoted environmental protection (Grant, 2003). The environmental problems that existed during the 1970s and 1980s are far less formidable than the environmental issues prominent in the world today. In order to make more effective environmental policy decisions, it will be necessary for governments to make improvements in the way such threats are handled in the future. This will require improving the performance of governmental and social agencies, with effective leadership that can engage policymakers so they can develop new strategies, both in governmental agencies and within the larger society (Vig & Kraft, 2012).

According to Grant (2003), two main ideologies exist with regard to conservation and the protection of the environment. These two competing themes take precedence in the public policy debate: individuals that defend economic growth as the dominant value in society, and the antithesis, those who defend environmental protection as the highest priority. The outcome of this discourse is contingent upon the synthesis of the two viewpoints and shaped by how successful environmental decision makers are at institutionalizing their respective priorities.

From 1945 through 1960, the dominant ideology in the United States supported economic growth. After World War II, industrialization was an enormous economic force, but a new ideology moved to the forefront in the 1960s -- a second synthesis of ideologies called managed scarcity. Managed scarcity was based on a concept that synthesized both economic growth and

environmental protection. This idea was directly influenced by social movements for environmental protection in the United States during the 1960s. At that time, industrial growth was largely unregulated, which resulted in a myriad of unintended consequences such as water and air pollution (Grant, 2003).

By the 1970s, the U.S. Congress had enacted a significant number of Acts that formed the basis for environmental protection in the United States such as the Clean Air Act, Clean Water Act, Endangered Species Act, and the Resources Conservation and Recovery Act. In contrast, Canadians were engaging in community activism by demanding their right to defend the environment. The Canadian Environmental Law Association (CELA) and the Canadian Environmental Law and Research Foundation (CELRF) were established during this period. These Canadian organizations gained recognition for evaluating environmental law and promoting citizen participation.

2.3 Economic Development and the St. Lawrence Seaway

The St. Lawrence River is located between Ogdensburg and Montreal, along the upper part of the waterway. Numerous boundary streams separate the United States and Canada. The lower stretches of the St. Lawrence River lie entirely within the domain of Canada. Prior to the construction of the St. Lawrence Seaway, ocean trade was limited due to the shallow canals that once bordered the St. Lawrence River between Ogdensburg, New York and Montreal, Canada (Harriman, 1929). One of the main goals of the development of the St. Lawrence Seaway was to access the Great Lakes. Unequaled by any other water system in the world, the Great Lakes consists of a number of connecting channels.

Activity on the St. Lawrence Seaway dates back to President Calvin

Coolidge, when he began to negotiate with Canadian officials to draft a treaty to construct the Great Lakes St. Lawrence Seaway (Harriman, 1929). Few people are aware that the most controversial decision that any American Congressman or member of the Canadian Parliament has had to make in the twentieth century is about the debate over the economic viability and merit of the construction of the St. Lawrence Seaway and Power Project on the U.S.-- Canadian border. The debate, which lasted fifty years, was kept in the national spotlight by leaders from Massena and other areas of New York State. Since there has been an overall lack of recognition of the project in the U.S., some academics believe that the project was more critical to the economic and social development of Canada than to the U.S. (Parham, 2009).

2.4 Environmental Contamination

The study of environmental contamination was initially viewed in the context of protecting humans from the consequences of harmful environmental pollutants that were released into the air, water, and soil. In 1969, Truhaut defined and introduced the term ecotoxicology, which became part of a new movement that was rooted in the ideology that wildlife needed protection. This ultimately led to a new field in the environmental sciences (Bacci, 1993).

Ecotoxicology is now understood as the direct and indirect effects of both organic substances and manmade pollutants on all living things. From this vantage point, experts in the field of ecotoxicology are interested in identifying criteria and developing prevention standards to reduce environmental contamination. This development of criteria and strategies is closely aligned with technological advances, since instruments will invariably be needed to measure contamination and gauge their release into the natural world. Although establishing criteria and standards are often viewed as one concept, they should be distinguished as two separate ideas.

Cains describes criteria as the direct result of scientific observation (Howe & Eisenhart, 1990). In contrast, standards are viewed as the products of rules, regulations, and laws developed by policymakers and governmental actors (Bacci, 1993).

As early as 1989, United States officials had already defined chemical pollutants as environmental toxins that caused “death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions or physical deformations” (Unterberg, Roos, Scofield, kooyoomjian & McCarthy, 1989, 5). In order to establish a connection between hazardous waste and human health, scientists began to collect data on diseases in an attempt to make the link between chemical pollutants and human exposure. Although epidemiological studies cannot empirically establish a direct cause and effect, they are statistically significant and hold the most weight in terms of assessing risks (Liu & Lipták, 1999).

Hazardous waste can be broken into four main categories: environmental toxins released in water; hazardous liquids released on land; particulate solids released on land; and compressed gases released into the air. Several industries have been identified as being responsible for polluting the environment: automobile, timber, steam electric power plants, pulp and paper, machinery and mechanical products, steel, plastics, synthetic metals, iron ore and coal mining. Toxic substances, including heavy metals, can affect the health of both humans and the ecosystem. These substances are evaluated based on maximum levels of toxic concentrations present in water (Anderson & Shiers, 2009). The EPA requires facilities to report potential risks for hazardous spills. Industrial and manufacturing facilities are required to report the quantity of hazardous materials, along with an assessment of the degree of harm the environmental toxins could cause and the location of the hazards.

2.5 PCB Contamination

PCBs were first manufactured in the U.S. by the Swann Chemical Company. Swann developed polychlorinated biphenyls in the 1920s; their harmful effects were identified as early as the 1930s. The company was ultimately acquired by Monsanto, when they began to produce a wide range of PCBs. A number of studies, conducted prior to the 1960s, focused on the harmful effects of PCBs. Research findings revealed concentrations of PCBs in wildlife. Nevertheless, Monsanto continued to produce PCBs, primarily as coolants and for polystyrene production (Vallero, 2006).

Since that time, further research has been conducted and findings indicate that PCBs are potential carcinogens that can effect reproduction, cognitive development, and immune system functioning. In 1976, largely due to the concern over the harmful effects of the chemical, PCBs were banned in the US; however, it has become increasingly clear that the effects will continue to have a negative impact on humans and the ecosystem. This is particularly true in St. Louis, Missouri, where Monsanto's PCB manufacturing plant was originally located (Vallero, 2006).

2.6 The EPA and Environment Canada

The governmental entity that deals with these environmental issues at the federal level in the United States is the Environmental Protection Agency (EPA).

Established in 1970, the EPA was initially interested in working on federal projects related to pollution, solid waste, pesticides, and radiation. The idea was to further develop the programs already in existence that were devoted to air and water pollution (Duncan, 1993). The focus of the EPA changed in 1969, when an oil well off the coast of Santa Barbara, California exploded. This catastrophic event was a catalyst for the development of more comprehensive programs addressing a wider spectrum of environmental problems.

In response to the accident, President Richard Nixon established the Environmental Quality Council. Congress later decided to pass the National Environmental Policy Act, making a bold statement - that the federal government was intent on stepping up its role to protect citizens from environmental hazards, by making it a national priority. Since that time, the EPA has expanded its programs; however, the momentum has slowed considerably since the early 1990s. The ability to regulate and enforce laws has not been without challenges; citizens have been outspoken about the “burden many environmental regulations impose on state and local governments, businesses, and individuals” (Duncan, 1993, p. 88).

Environment Canada, an agency that handles environmental concerns within the Canadian Ministry of the Environment, is the EPA’s counterpart. Agencies like Environment Canada were established as a result of the passage of the Canadian Environmental Protection Act (CEPA) in 1999. CEPA gave full authority to the Canadian Minister of the Environment to control commerce and new substances entering the country, to oversee the life cycle of toxic substance regarding their manufacture, transport, and distribution, in addition to establishing environmental guidelines and codes, monitoring phosphates in detergents, and issuing environmental permits. CEPA also was charged with managing hazardous wastes, regulating federal works and related governmental departments, while instituting, implementing, and regulating environmental legislation. CEPA 1999 was an evolutionary process, since another CEPA (1988) had preceded the 1999 version. CEPA 1988 represented a consolidation of the previous Environmental Contaminants Act, which included several former environmental statutes from the 1970s. In 2004, a Parliamentary Review of the Canadian Environmental Protection Act of 1999 was conducted.

The EPA and Environment Canada both have programs that work with aboriginal people; however, Canada does not have a Superfund program. In Canada, over one million people self-identify as having aboriginal ancestry. Canadian aboriginals, otherwise known as First Nations peoples, represent aboriginal communities that speak over fifty different languages, each with their own distinct culture.

The EPA is the federal organization that oversees the Superfund Program. This agency works collaboratively with state governments and oversees forty-four separate environmental programs. These programs regulate plants that treat sewage and power plants. The EPA is responsible for the oversight of state agencies that implement federal environmental laws, and it has engaged in numerous remediation and ecological revitalization projects between 1980 and the present. The agency also defines remediation, or ecological revitalization, by ensuring that sites are remediated to a standard that ensures functioning and sustainable use (Decker & Pope, 2005). The EPA, along with state government, is also required to enforce legal actions against polluters, either based on the release of pollutants, or on activities involving permit violations (Brulle & Pellow, 2006).

The Superfund Program, also known as the Comprehensive Environmental Response Compensation and Liability Act, was enacted in the United States in 1980. Approximately four years prior to the passage of Superfund, the United States passed the Resource Conservation and Recovery Act. The main goal of the initial legislation was to identify hazardous waste, set standards for waste management, and institute a permitting system to keep track of waste transference. The Superfund Program was specifically designed to clean up toxic hazardous waste sites (Miller, 2009).

Another Superfund site, located near Akwesasne, is the Alcoa East aluminum processing plant. Alcoa has two manufacturing facilities in the area: Alcoa East and Alcoa West. Alcoa East is across the road from the GM facility, while Alcoa West is in Massena, N.Y. In the latter part of the 1980s, the EPA ordered Alcoa to identify the types of emissions that its facilities were producing. At that time, the government mandated them to develop a system to clean up polluted river sediments, and, in 1989, the Alcoa East plant was also listed on the NPL as a Superfund site.

2.7 First Nations

The Canadian government distinguishes First Nations people by categorizing them. One such category is 'Registered Indians' which means that they are covered under Canada's Indian Act, enabling them to be registered on a federal list. As a result, these aboriginals are eligible for additional services at the federal level. About thirty percent of aboriginals in Canada do not fall under this category. The Inuit population is yet another indigenous group, while the final category represents the Métis: aboriginals whose ancestry is based on intergroup marriages with Europeans (Bailey, Caulfield, & Ries, 2005). These categories make environmental negotiations and decision making difficult, particularly in aboriginal communities that have been impacted by environmental toxins and hazardous waste.

2.8 Methodology

Grounded theory was used as a lens for this particular study. Grounded theory is based on the study of specific data sets through inductive reasoning. Inductive reasoning is a term that usually describes moving from the specific to the general. This means that grounded theory research findings fit one specific dataset perfectly. Instead of examining data from a variable perspective, grounded theory explores each individual case as if it were a whole. Within this

holistic framework, variables interact and produce specific outcomes. This methodology can best be understood from a case orientation perspective, with variables within the system that interact in complex ways (Borgatti, 2001).

Grounded theory was a useful methodology, mainly because it allowed the data to emerge, although it was important to continue to challenge biases and assumptions at every juncture, and avoiding drawing premature conclusions and preconceived notions about what the outcome of the research might be.

This provided a contextual framework for the study, since this theory is based on social and psychological concepts about symbolic interaction, which emphasize communication and human interaction as dynamic expressions of how meaning is created. Grounded theorists believe that meaning is constructed through symbolic interaction, everyday encounters between individuals and groups where conversations have fluid and dynamic meaning. Inductive analysis is derived from the observation of everyday experiences. This inductive mode of analysis enables the researcher to move from observations to general theories. (Neumann, (2006).

The majority of research activities utilized were based on methodologies outlined in Patton's (2002) book, *Qualitative Research and Evaluation Methods*. According to Patton, interviewing is a core component of qualitative fieldwork. Interviews were conducted with twenty-five Native American and First Nations Akwesasne community members. The interviews were inductive and lasted approximately one hour in length. Fifteen of the twenty-five interviewees were from the community, and ten worked in local environmental organizations on the Mohawk Nation of Akwesasne territory. Five additional deductive

interviews were conducted with related local governmental and nongovernmental stakeholders and policy actors in order to inform the study.

In addition, journaling and fieldwork were important qualitative research methods used, along with developing rapport with community members in order to identify individuals willing to participate in the study. Purposeful sampling was the primary method used to identify interviewees; however, it became increasingly clear that it would be a challenge to find potential interviewees, mainly because building trust is a critical issue for Akwesasne community members, mainly due to an overall mistrust of governmental officials and academic researchers. This was addressed by using the snowball technique, finding potential interview participants through recommendations, word of mouth and referrals.

Purposeful sampling was used to gather information-rich data for analysis. Utilizing purposeful sampling made access to key concepts easier, while facilitating the identification of recurring themes. Purposeful sampling can also make data more accessible since it enables the researcher to explore issues with a higher degree of specificity (Patton, 2002).

Utilizing semi-structured interviews enabled me to ask follow up questions so that respondents could expand on their answers. Standardized open-ended interviews made it possible to identify common themes for evaluation, thereby minimizing variations from one interview to the next. Open-ended interviews are one method of maintaining the focus of the interview to maximize the use of an interviewee's time (Patton, 2002). Questions and standard probes were developed in advance of scheduled interviews. These methods ensured that each individual was asked the same question in the same way and in the same order with standard probes.

Questions were knowledge based, focusing on what respondents might know about specific events or situations. Developing a rapport with participants was especially important,

mainly because it was necessary to establish a trusting relationship prior to the actual interview, in order to make Akwesasne community members feel comfortable about discussing issues in depth.

2.9 Validity

The link between the question and the overall research objective, called face validity, will be one important way to interpret subjective knowledge; however, since logic is subjective, it is often difficult to arrive at definitive conclusions. Validity is the “ability to use an instrument that measures what it is supposed to measure” (Kumar, 2005, p. 153).

Research tools utilized in the social sciences are never completely accurate, and the way that questions are worded, the interview setting, the mood of a respondent, the way that the researcher interacts with the respondent, and the tools used to measure attitudes, values, and beliefs may all affect reliability (Kumar, 2005).

One of the methods used to reduce errors was to identify potential researcher bias. Over the course of the study my biases shifted dramatically. Initially, since I am a person of African descent, I identified my own ancestry as a main bias, and believed I would be overly sympathetic with tribe members. I thought tribe members would automatically accept and welcome me because I was a person of color with a similar history of oppression.

Now, I realize that many of my initial biases significantly morphed over time. Instead of being similar to tribe members based on my background, I found that I was different in more ways than I was similar - and that my biases were rooted in my being an American, rather than stemming from my African American heritage. I found that my identity as an American non-native and my distinctly western perspective presented a more significant barrier than I had anticipated.

Many of my assumptions about the culture, spirituality, and traditions of Native Americans and First Nations communities changed significantly over the course of this study. These shifts occurred primarily because my belief system did not reflect the native society that has evolved and changed itself over time. My image of tribal life was mainly influenced by the media’s portrayal of aboriginal people, and not necessarily based on real life circumstances. Anticipating particular biases in advance poses challenges as new or different biases can emerge as time progresses. This realization represented one of the most important understandings I gained. In the end, this was a unique opportunity for me to challenge my assumptions at every juncture, with the understanding that closely held beliefs may change along with perceived realities.

2.10 Coding Data

General Characteristics

Twenty-three of a total of twenty-five interview participants were direct descendants of the ancestral St. Regis Mohawk tribe in the Mohawk Nation of Akwesasne. The remaining interview participants were descendants from two other related tribes: Seneca and Navajo. The age range was 18 to 74, with the majority of respondents from the ‘baby boomer’ generation. The following is a breakdown of the characteristics of those individuals that participated in the study.

Table 1: Breakdown of Interview Participants

Descendants of St. Regis Mohawk Ancestral Tribe	92%
Descendants of Related Native American Tribes	8%
Number of Women	52%
Number of Men	48%

2.11 Key Themes

An analysis was conducted subsequent to the data collection phase of the study, and Hyper Research was used to code reoccurring themes. Below is an adaptation of some of the questions that were asked during the interview process, in order to provide the reader with an understanding of eight main emergent themes and data sets:

1. Understanding of what the land was used for prior to GM locating in the area.
2. Description of key events that transpired at GM.
3. Knowledge base regarding GM toxic hazardous waste remediation.
4. Identifying other polluting industries in the area such as Alcoa, Reynolds Metals, and Domtar Pulp and Paper Mill.
5. Comparing the U.S. and Canadian policy response to PCB contamination.
6. Why GM was built adjacent to the Mohawk Nation of Akwesasne.
7. Ideas about what justice would mean for the community in this case.
8. Attitudes and perceptions related to the reservation, reserves, and border issues.

Frequency of key thematic concepts is highlighted on the following page in Figure 1.

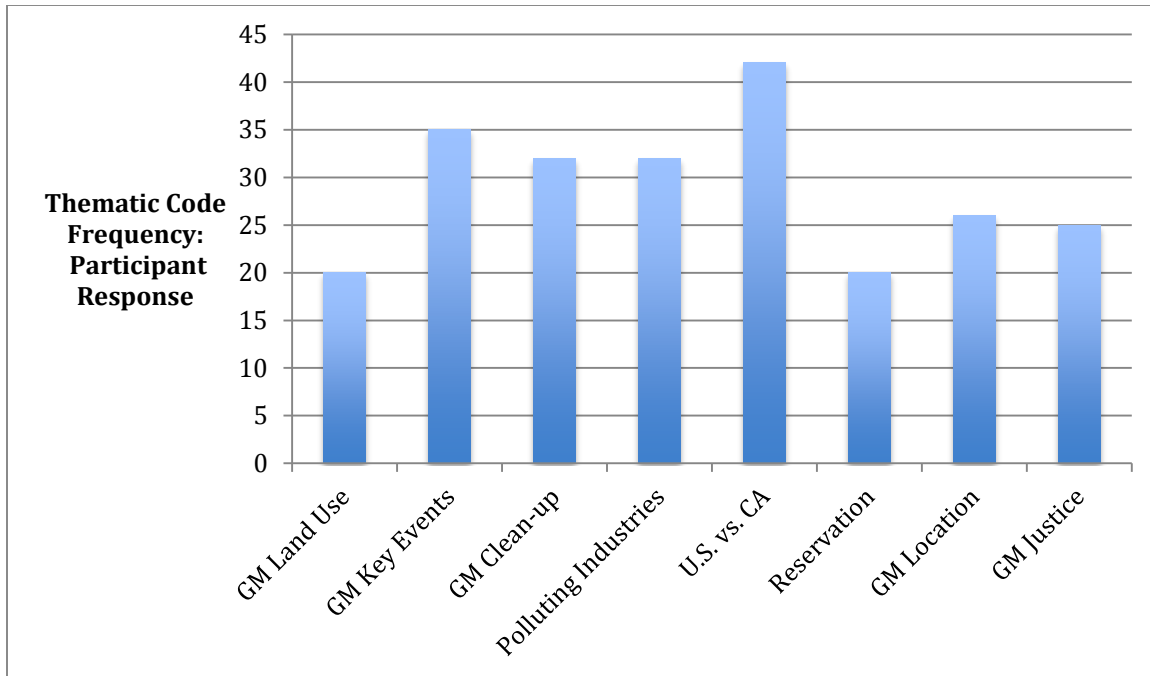


Figure 1: Key Thematic Code Frequency: Participant Response (n=25)

Once interview transcripts were loaded into the Hyper Research qualitative software program, a report was generated based on the frequency of responses. The results of the frequency report are directly correlated to the number of times interviewees responded to a particular question and how often a topic was discussed. Data collected in each of the eight main categories translates into the amount of data collected for each specific theme; the more respondents discussed an issue, the more frequently it was coded for analysis.

2.12 Data Analysis & Research Findings

The following is an analysis of each data set, followed by quotes, or excerpts, from the interview transcripts of the research participants. Also included in this section are research findings for each data set. Pseudonyms, instead of real names, will be used for quotes, both to ensure confidentiality and to adhere to Institutional Review Board guidelines.

2.12.1 GM Land Use

Most of the interviewees stated that the land that GM built its manufacturing facility on was previously an agricultural farm, located in a pastoral setting. A few of the respondents simply did not know, or did not remember, what the land had been used for during this timeframe. The owners of the property are most often described as being native people that sold the land directly to GM for monetary purposes.

2. 12.2 GM Key Events

Interview participants described key events that transpired at the GM plant over the course of the past two to three decades. A theme emerged from the majority of respondents; each of them told the story in three main parts. During phase one of the GM storytelling, or GM narrative, participants described a period when they first became aware of the pollution at the GM plant. Most appeared to have been caught completely off guard by the news of the pollution. The majority of Akwesasne community members found out about the harmful chemical pollutants when a story was written about it in a local newspaper, the *Watertown Times*.

During the second phase of the GM narrative, respondents describe how they organized and educated themselves about PCBs and their harmful effects, both in humans and in the ecosystem. Most participants reported a high level of civic participation such as community organizing, developing direct action strategies, and engaging in community activism. In the second phase, interviewees discussed specific environmental leaders that emerge from within the Akwesasne community to address this very serious and complex environmental issue, and to advocate on behalf of the St. Regis Mohawk tribe with related policy actors and stakeholders.

These grassroots activities are supported by environmental organizations formed to

address the pollution in a more comprehensive way. One of the main grassroots organizations is the Akwesasne Task Force on the Environment (ATFE). The ATFE consists of volunteers who band together to engage in decision making and developing strategies, mainly based on volunteerism. Key events that transpired during this phase are characterized by a heightened level of awareness about the seriousness of the problem and a commitment, through community activism and civic participation, to defend the tribe's legal rights and to protect the environment during a period of civic participation and community activism.

Phase two often included a description of the St. Lawrence Seaway, which Akwesasne community members describe as 'the river,' in addition to a discussion of the impact of PCBs on fish and other aquatic life. The story of the degradation of the fish supply that had been used for decades as the main dietary staple for the St. Regis Mohawk tribe and Akwesasne community members was usually accompanied by a description of the relationship the Mohawk Nation community has with the river, and by how the development of the St. Lawrence Seaway significantly changed that relationship. Included in this discourse was further discussion related to the degradation of fish in the river. The decline of fishing as the main economy, and the degradation of fish and food security, is also described as having had an impact on their culture and traditional way of life. Often, respondents discussed childhood memories of family gatherings that included large fish dinners with many family members in attendance. The fish dinner was the focal point of the gathering.

The third phase of the GM narrative was specifically related to the tearing down and cleaning up of the GM plant and the surrounding area.

2.12.3 GM Clean Up

When participants mentioned cleaning up, or remediating the facility and surrounding areas, the discussion typically led to how GM illegally dumped PCBs in the back of the manufacturing facility, and in the nearby St. Lawrence River. One of the locations where PCBs were dumped accumulated and formed a mound in the rear of the GM facility. This mound is of particular significance to most of the interviewees and became the main focus of the GM story at this juncture. The overall idea for the advocacy and activism is to ensure the sovereign rights of the Akwesasne Mohawk Nation to demand that they be part of the decision making process.

The story related to the mound is important because it represents the exact location where the dumping occurred, often describing the PCB laden waste as an oily substance that was mixed in with other objects such as scrap metal and sandy soil. Some childhood stories were told at this point, describing such events as families, along with their children, sifting through the contaminated mound to collect metals and other objects, without the benefit of protection, because they simply were not aware that the mound was contaminated. For the most part, respondents suggested that they felt blindsided by the news of the pollution. Stories were shared involving children, unknowingly, swimming in contaminated waters, and families eating fish without a clue that the food contained PCBs. From the stories related to the mound, it can almost be viewed as a metaphor, or symbol of the polluting event as a whole, mainly because the main issue appears to be that the Akwesasne community wanted the contents of the mound to be excavated, treated, and removed, not merely capped as it has been for several years. The data suggests that the mound is a symbol that the remediation will never be complete unless it is removed from the premises. For individuals that lived, or were raised on Cornwall Island, CA, there are reports of a significant amount of rashes and skin sores from swimming in the river on

the Canadian side. The following chart represents word frequencies related to discussions about contamination, PCBs, pollution and GM clean up:

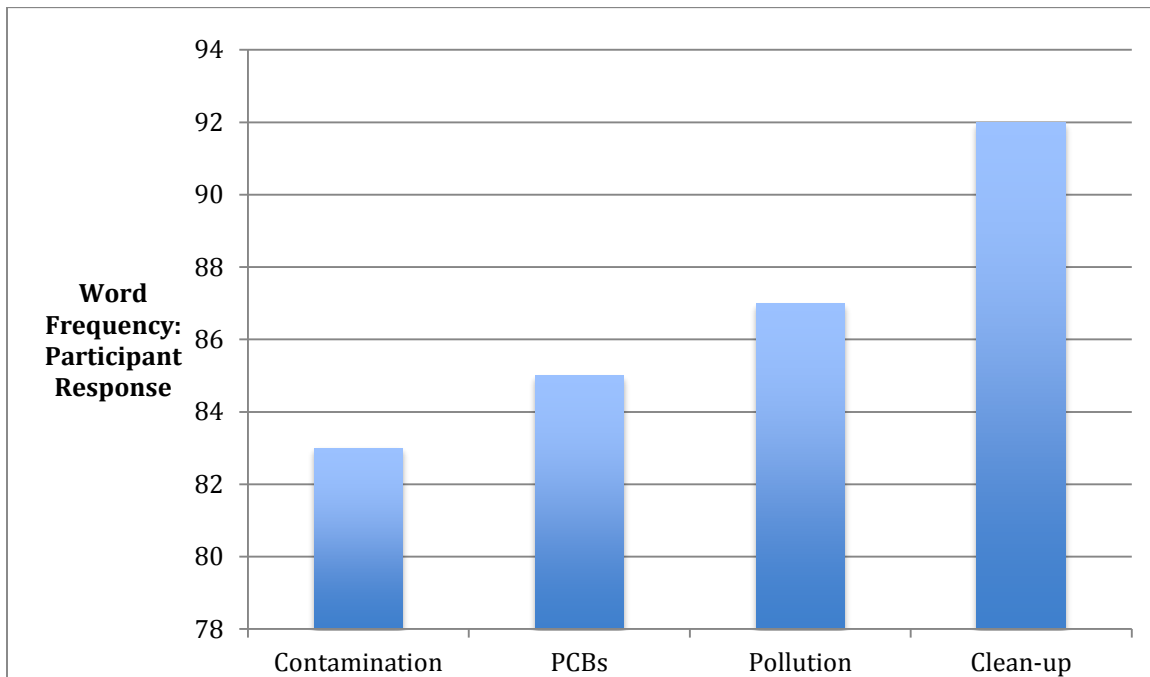


Figure 2: Word Frequency: Participant Response - Contamination, PCBs, Pollution, Clean-Up. (n=25)

2.12.4 Polluting Industries

Several polluting industries were mentioned. The main industrial polluters named, besides GM, were Domtar Pulp and Paper Mill, Alcoa East, and Reynolds Metals. The story most often told is that Alcoa was an aluminum plant that worked closely with General Motors, because it was a large supplier of aluminum. One of the products that Reynolds Metals and Alcoa produced was ingots. Research findings indicated that Domtar was a major polluter on the Canadian side, emitting significant amounts of fluorides, mercury, and sulphur into the atmosphere. The majority of respondents recall that, when they were growing up, they could smell the emissions from the Domtar ‘stacks’ for miles. Fluoride emissions are reported to have

caused fluorosis in humans and in animals. The livestock on Cornwall Island were profoundly affected; the cattle were so contaminated that their bones became brittle. This caused a significant decline in the cattle industry in Akwesasne. Alcoa West bought out the Reynolds Aluminum plant, which later became Alcoa East near GM. Reynolds Metals also had a history of violating Canadian environmental regulations by fixing their emission reports so that they were closely aligned with governmental standards.

The problems associated with regulating these industries was apparent from statements made by interviewees on this subject and the additional environmental hazards from the three plants has compounded the environmental problems due to contamination in the area. Figure on the following page represents word frequency rates for Domtar, Alcoa and Reynolds, followed by a chart depicting the data set. Tables 2 and 3 list the types of pollutants interviewees identified as chemicals associated with the three industrial polluters:

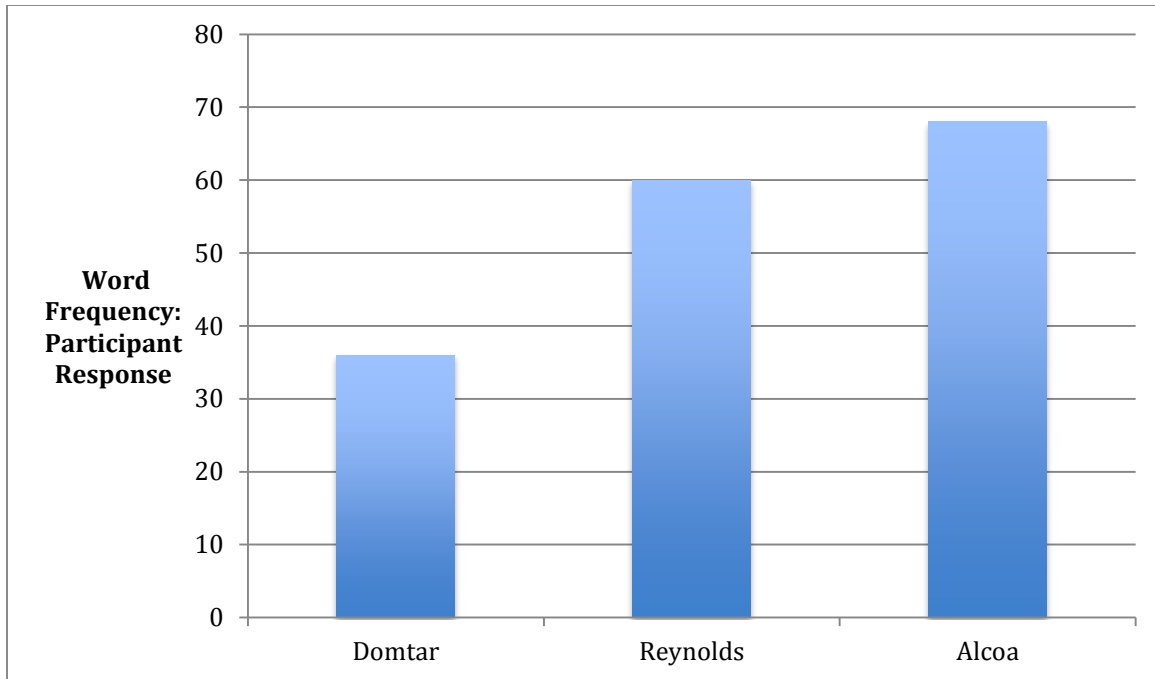


Figure 3: Word Frequency: Participant Response - Domtar, Alcoa, and Reynolds (n=25)

Table 2: Word Frequency: Responses Greater than 10 - Chemical Pollutants (n=25)

<u>Pollutant</u>	<u>Frequency</u>
Fluoride	52
Mercury	31
Aluminum	19
Chlorine	14
PAHs	12
Dioxin	12

Table 3: Word Frequency: Responses Less than 10 - Chemical Pollutants (n=25)

<u>Pollutant</u>	<u>Pollutant</u>
Carbon	Myrex
Pesticides	Chromium
Titanium Oxide	Cyanide
Phenols	Phosphorus
Styrene	Lead
Benzyl phenol	Xylene
Arsenic	Montemer
Benzene	
Bromine	
Nickel	

2.12.5 U. S. vs. CA

The findings in this data set indicate that Canada has not been as active, or effective, at remediating toxic hazardous waste as the United States. According to interviewees, Canada is reported as a country that “doesn’t do anything” - their approach to the chemical pollution is that it will all somehow go away by becoming diluted. In contrast, almost all of the individuals interviewed made favorable statements about the EPA. The majority of interview participants had name recognition for the EPA, and out of twenty-five interviews, only one person mentioned Environment Canada. However, this should be tempered by other statements made, which indicate unanimous consent that neither country has been as responsive as it should have, or could have been.

It should be noted that Canada is not the responsible party regarding the GM facility, because the polluting industry is in the U.S.; however, the Canadian government did not remediate facilities that they were responsible for, such as Domtar.

2.12.6 GM Location

There were three typical responses when asked why GM was located in the area: it is a low-income community; the people of Akwesasne are native and locating GM there is reminiscent of the way they have, historically, been treated by the U.S. and Canadian governments and, the facilities had access to cheap power from the nearby Hydro Quebec plant. Research findings for this data set indicate that race did not play a major role in why interviewees thought the plant was located in the area, although a few individuals did mention that they thought race might have been a factor. This suggests that the Mohawk Nation community did not seem as highly racialized compared to other societies. There appears to be a cultural barrier when discussing race, since it appeared as if inquiring about difficult or

controversial topics caused interviewees to hold back, or to answer more conservatively. This seems to indicate that they did not want to go into depth about difficult issues with researchers, outsiders, or perhaps any people that were not from within the community. It is important to note that I made several inquiries on this topic, utilizing appropriate standard probes; however, race was the least frequent response when asked why the GM plant was located adjacent to the Mohawk Nation.

In summary, research findings suggest that there were three main predictors for locating the GM facility near the Mohawk Nation of Akwesasne: low income, Native ancestry and access to cheap power. A fourth predictor was that GM wanted to dispose of, or dump, PCBs into the St. Lawrence River.

2.12.7 GM Justice

When the inquiry was made regarding what justice would mean for Akwesasne community members, the overwhelming response was that they thought justice meant that the site would be completely cleaned up and restored back to its original state. The statement most often associated with this answer is that they want “it back to zero parts per million.” Although this is a scientific term, or phrase, the reality of the situation is that the natural resources can never be restored to their original condition, due to contamination. For this reason, there is a disconnect, particularly within the larger community, for those individuals that believe that the contamination can be reversed. For those tribe members that work within the environmental organizations in the Mohawk Nation, there is a more comprehensive understanding of the pollution and what can be expected in terms of restoring ecosystems and remediating toxic hazardous waste.

2.12.8 Reservation

When asked about the reservation system, most participants appeared to be confused by the question. This occurred so many times, the question was almost removed from the questionnaire; however, after careful consideration, I thought it best to continue this line of questioning. I now realize that this question was confusing because community members do not necessarily view the reservation in ways that one might anticipate. This is mainly because the St. Regis Mohawk tribe was never displaced, and they are living on the same land as their ancestors. For this reason, the question is moot – they have always lived in Akwesasne, and one participant said they didn't even recognize the term reservation, because they don't believe the land was "reserved" for them; they have always lived there.

The question did illicit another, quite unexpected response. Once a discussion of the reservation systems was underway, it wasn't long before interviewees began complaining about the border system. This, in many ways, is more irritating than the reservation system, because they are often inconvenienced at border crossings, particularly when travelling to Cornwall Island from the United States. In this case, the question about reservations often led to a discussion of the border.

2.13 Discussion

Since the time *Silent Spring* was written, a myriad of environmental problems have emerged over time. Methods to control industrial pollution and create more socially responsible businesses have been difficult to achieve. In order to address industrial pollution, it will be necessary for environmental policy makers to focus less on legislating in the short term, but rather, consider policies based on long term goals. Enacting environmental policies in the short term may be advantageous in terms of cost effectiveness and the ability of businesses to prosper,

but this type of policy making has typically relied on a command and control style that has not always been the most effective method of addressing environmental pollution in the twenty- first century.

It will be equally important for policy makers to consider elevating the problem of exposure to chemical pollutants in Native American and First Nations communities, by framing it as a serious public health issue. Increasing funding in this area may address some of the devastating consequences, not only from toxic hazardous waste, but also from nuclear, military, and medical waste that has plagued native communities for decades.

Devolution of some of these responsibilities to state and provincial governments may be an effective way of addressing this problem, by allocating the power, authority, and legitimacy, along with adequate funding sources, to deal with the enormity of many of these local, and global, environmental problems. While coercive policies are necessary to enforce strict rules and regulations, incentives may be another method of ensuring that businesses are more socially responsible in the future, by internalizing some of the costs of corporate pollution. It may be beneficial for environmental policymakers to incorporate a bottom up approach that is multi-layered, not just relying on one main approach or strategy.

This study identified that the St. Regis Mohawk tribe at Akwesasne was extremely supportive of the U.S. EPA's Superfund program. Canada has no Superfund program and, even name recognition of the EPA's counterpart, Environment Canada, was, essentially, non-existent. Even though the Superfund program has been extremely effective at cleaning up the GM plant, and also Alcoa, in the end, it was political forces and the need for cost effectiveness that ultimately decided which remediation methods would be utilized. Regardless, as demonstrated

throughout the article, the tribe was extremely satisfied with the EPA, except they wanted a more extensive clean-up of PCB contamination.

The catalyst that was used to establish the EPA's Superfund program should be duplicated in Canada, so that they have a comparable and more effective method of addressing chemical pollution in First Nations communities. This would likely require civic participation, advocacy, activism, media attention, and lobbying, since the study revealed that the Canadian government was closely aligned with industry and less likely to regulate in a way that might offend businesses or multinational corporations.

This combination of strategies might convince Canadian officials to support a program similar to Superfund. Interview participants stated that the Canadian government is tied to industry and is, therefore, reluctant to make the necessary changes that would be necessary for effective remediation of hazardous waste. It is imperative to demonstrate to Environment Canada that the EPA's Superfund has been a far superior program in contrast to the lack of a comprehensive Canadian response to restoring ecosystems damaged by harmful chemical pollutants and environmental toxins.

2.14 Conclusion

The following is a list of public policy recommendations based on research findings in three key areas: Public Health, Environmental Decision Making, and Civic Participation.

Public Health

Research findings from this study indicate that the majority of St. Regis Mohawk tribe members interviewed believe that PCB contamination was responsible for a significant increase in the number of serious illnesses among Akwesasne community members. For example, community members state that they have experienced an increase in diseases such as cancer,

diabetes, and thyroid disorders. They also state that many of the illnesses that have been identified have never existed in the community before, and those illnesses that have been present in the past have increased in frequency.

It has been difficult for the tribe to prove causation and, for this reason, holding governments, industries, and corporations accountable for health related illness due to chemical pollution has been challenging. Locating toxic hazardous waste facilities in low income areas and communities of color is still a significant problem nationwide. The literature in this area is well developed and evidence suggests that many of these communities have been disproportionately affected. Justice for St. Regis Mohawk tribe members would mean that the U.S. and Canadian governments provide funding to completely excavate and remove the hazardous waste that is located behind the Old GM site, rather than just using capping as the main remediation method. Tribe members believe that completely remediating the site through treatment and removal will reduce negative health impacts for future generations.

Recommendations: For the reasons highlighted above, elevating the discourse on public health, particularly in areas where there are Superfund sites or other identifiable toxic hazardous waste facilities near native communities, should be a national priority. This requires developing new public health policy regimes that address illnesses associated with communities affected by toxic hazardous waste exposure, in addition to other recommendations listed below:

- Approval by the appropriate legislative and provincial authorities to provide funding and resources for programs that target communities affected by harmful chemical hazards such as persistent organic pollutants.
- Establishing departments to address health disparities specifically related to

aboriginal communities adversely affected by exposure to chemical pollutants. This can be accomplished through strategic planning and program development, which can be beneficial for both native and non-native communities in the future. Toxic exposure to chemical pollutants often has far-reaching consequences, since pollution does not stop at the border.

- Increasing the capacity of indigenous environmental organizations, perhaps in the form of RFPs or grant writing initiatives.

Traditionally, both governments have addressed environmental degradation in terms of cleaning up toxic environments. Focusing on the health consequences from industrial pollution and corporate waste should demand equal attention. This would require valuing human health as a high priority and attaching the necessary funding sources to implement these kinds of initiatives in the future. Most of the interview participants reported that both governments should bear some responsibility for the significant health decline in their community, even if causation cannot be empirically proven. This can be accomplished by framing this policy issue as a major public health concern.

Environmental Decision Making

Environmental policymaking in the U.S. and Canada has traditionally relied on a command and control style of governance; however, the environmental decline in both the U.S. and Canada demonstrates that new and innovative methods of decision making for complex environmental problems may be required for moving forward, especially when dealing with environmental issues in a transnational setting. Research findings show that, in the past, environmental crises and the need for short term environmental fixes have traditionally relied on

a top down approach to policy agenda setting, analysis, and public policy implementation. These policies are often developed within the context of bureaucratic governmental agencies. Top down approaches have traditionally neglected the attitudes, values, beliefs, opinions and perceptions of those communities that have been most affected.

Relying on a bottom up approach can effectively inform public policy, in contrast to decisions made within rigid bureaucratic settings. Therefore, native philosophies and the interconnectedness that indigenous communities have with the natural world is largely overlooked, and vastly different worldviews can make it particularly difficult when negotiating in the dominant mainstream public policy domain.

Recommendations:

One recommendation would be to use a bottom up approach to environmental decision making in the future, drawing from qualitative studies that incorporate an inclusive and participatory approach. This will enable native communities to have an authentic voice in the decision making process. Providing the community with the ability to effectively communicate their concerns can also inform the environmental decision making process. This will require policymakers to make an effort to identify ways they can bridge this gap by learning about other cultures that may have distinctly different worldviews and paradigms.

This could be facilitated by the development of collaborative regional partnerships with governmental and nongovernmental stakeholders across borders. Developing relationships with local universities that offer service learning opportunities for students might be another way of identifying ways that academia can become involved with identifying appropriate bottom up policymaking strategies.

Understanding these issues within a cross-cultural context will facilitate a greater understanding from the perspective of all parties involved by enhancing communication and considering other new and innovative ways to solve complex environmental problems.

Civic Participation

Research findings indicate that the Akwesasne community has not been kept abreast of the progress that has been made in remediating toxic hazardous waste at the GM plant. Both governments have failed to help the community deal with the environmental stressors of living in a toxic environment. This is evident by the heightened distress that interview participants displayed when discussing the uncertainty they felt, not only about food security, but also regarding how this would impact future generations.

Recommendations:

Utilize existing structures within the EPA and Environment Canada to provide funding for community groups so that they can access information about the status of the GM plant, in addition to relevant information about the types of chemicals, routes of exposure, and other data that may help alleviate distress in the community. Identify methods of dissemination of information by providing access to relevant data on pre and post pollution levels and other relevant scientific data. The majority of individuals interviewed report that they simply do not know what foods are safe to eat, and what the status is of the polluting industries. As a result, it is difficult for community members to be on the same page when it comes to fish consumption, hunting, and growing vegetables for consumption.

CHAPTER 3

ECOLOGICAL RESTORATION AND TOXIC HAZARDOUS WASTE REMEDIAIONIN THE MOHAWK NATION OF AKWESASNE: FRAMING ENVIRONMENTAL JUSTICE FROM THE NATIVE AMERICAN PERSPECTIVE

ABSTRACT

Native Americans have been overlooked in the mainstream academic literature related to the mcrEnvironmental Justice Movement (EJM). The purpose of this study is twofold: to examine the organizational characteristics and direct action strategies that the St. Regis Mohawk Tribe engaged in to determine if their response to environmental degradation was comparable to other communities of color that have been recognized as playing an integral role in the EJM. Three Native American environmental organizations participated in this research project: the St. Regis Mohawk Tribe Environment Division, the Mohawk Council of Akwesasne, and the Akwesasne Task Force on the Environment (ATFE).

Several industries built manufacturing facilities along the St. Lawrence Seaway in close proximity to the Akwesasne community. One of the industrial facilities, General Motors, was illegally dumping polychlorinated biphenyls (PCBs) for nearly thirty years. The Environmental Justice Movement can be viewed as the nexus between two main themes related to social institutions and ecosystem degradation. The main methodologies used for this research study are grounded theory and case study analysis. This inquiry involved fifteen inductive interviews with Native American and First Nations staff members at local environmental organizations, in addition to a review of archival documents, and fifteen hours of participant observations.

This article demonstrates that, at the local level, the St. Regis Mohawk tribe engaged in activities similar to direct action activities that occurred in other communities of color in the United States, beginning in the early 1980s. Community activism and the development of organizing strategies within one of the organizations on the Mohawk Nation of Akwesasne territory, the Akwesasne Task Force on the Environment (ATFE), made significant contributions to the EJM; however, the academic literature on this topic has not been inclusive of native tribes. The ATFE and its contributions to this important social movement should, therefore, be recognized, valued, and included in the scholarly literature on the EJM.

3.1 Introduction

In the past, experts in the field of social justice research have used social movement theory to frame issues related to the Environmental Justice Movement in the United States. Research findings from many of these studies have relied on data collected from within the African American community. Perhaps the most well-known author in the field of Environmental Justice is Robert D. Bullard. In his book, *Dumping in Dixie: Race, Class, and Environmental Quality*, (2000), Bullard describes a study he conducted in several African American communities in the southern United States. The study examined the attitudinal and socioeconomic aspects of African American communities that had been affected by the “threat of environmental stressors” (p. 17). Bullard highlighted several types of environmental stressors found in low-income areas and communities of color, such as exposure to pollution from landfills and industrial facilities.

The main focus of social justice researchers in this area has been to examine the relationship between demographics, landfills, and hazardous waste facility sitings; however, it was not until the 1980s that these issues were framed within the context of Environmental Justice (Pulido, 2000).

Although numerous research findings based on the African American experience have informed our understanding of the Environmental Justice Movement (EJM), a gap exists in the scholarly academic literature related to Native American participation in environmental justice activities during the same time frame (Liu, 2001), (Bryant. & Hackman, 2005). Displacement from original homelands and separation into distinct sovereign states are issues that may explain the limited number of research studies in this area. From what I have observed from working with Akwesasne community members, low population numbers on Native American reservations

may be another factor that prevents researchers from gathering enough relevant quantitative data to extrapolate and subsequently apply understandings to the larger native population. I have also become increasingly aware of an overall mistrust of government officials, academic researchers, and outsiders or non-natives, which further complicates matters. Projects that include surveys may require close scrutiny by tribal chiefs and legal offices, and many in the aboriginal community may hesitate to be counted or measured. For many of the reasons highlighted above, Native Americans have been overlooked, or invisible, in the mainstream academic literature on the EJM. This means that the experiences of Native Americans, specifically related to the EJM, have not been studied in a comprehensive way, and, therefore, are poorly understood and ill defined. In the past, aboriginal communities have been linked to the EJM, but that has mainly been from popular media sources, and although there has been some nationwide recognition of Native American environmental stewardship and community activism (as evidenced by the American Indian Movement, the Indigenous Environmental Network, and individual Native American environmental activists like Winona LaDuke), these activities have not been viewed within the context of the larger national EJM.

Native Americans have also been given a ‘nod’ in the literature when referencing the Anti-Toxics movement. Activists from the Anti-Toxics movement are defined as residents of “contaminated communities who organize local protest movements to oppose threats to public health posed by environmental risks” (Cable, S., Mix, T., & Hastings, 2005, p. 59). In contrast, EJM activists have been described as citizens who associate themselves with established community-based organizations to oppose the disproportionate risks associated with human exposure to environmental toxins (Cable, S., Mix, T., & Hastings, 2005). Although they are

similar, anti-toxics and EJM activists differ in terms of their overarching goals, their grievances, and their constituencies.

3.2 Background

The main objective of the following study is to examine the organizational characteristics and direct action strategies that St. Regis Mohawk tribe members developed to protect the environment and restore ecosystems in the Mohawk Nation of Akwesasne territory. Three Native American environmental organizations participated in the research project: the St. Regis Mohawk Tribe Environment Division, the Mohawk Council of Akwesasne, and the Akwesasne Task Force on the Environment. The overall goal was to gain a comprehensive understanding of how St. Regis Mohawk tribe members organized to address the social and environmental disruption caused by exposure to toxic hazardous waste such as polychlorinated biphenyls, or PCBs.

The St. Regis Mohawk tribe settled along the banks of the St. Lawrence River in 1754. It is the only Native American tribe that straddles the border between the United States and Canada, and the current population is approximately seven to ten thousand people. This is a unique geographical area, mainly because some tribe members live in the northernmost part of upstate New York near Hogansburg, while others live on Cornwall Island in Ontario or in the Canadian Province of Quebec.

The St. Regis Mohawks are one of several Iroquoian nations that settled in this area during the eighteenth century. The French named the Haudenosaunee, or people of the Longhouse, Iroquois. The Haudenosaunee include the Oneidas, Onondagas, Cayugas, and Senecas. St. Regis Mohawks and other individuals, families and clans reside in the Mohawk Nation of Akwesasne community.

By the time Columbus arrived in America in 1492, over five hundred Native American nations were spread out across what is now called the United States. The cultures, languages, and each nation's history were quite different (Nash & Strobel, 2006). Prior to the American Revolution, the Haudenosaunee had considerable political power in the Northeast (Calloway, 2008). The St. Regis Mohawk tribe inhabited what they called Akwesasne, or the "place where the partridge drums." The Mohawk territory covers 16,640 acres of land in upper New York State and 7,384 acres in Canada.

The St. Lawrence Seaway was built in 1959 to enhance international shipping and improve access to the Great Lakes. During this timeframe, several industries built manufacturing facilities along the St. Lawrence Seaway in order to benefit from cheap power provided by the nearby Hydro Quebec power plant. General Motors, Reynolds Aluminum, Alcoa East, and Domtar Pulp and Paper Mill on the Canadian side of the St. Lawrence were built in close proximity to Akwesasne. In the 1980s, the New York State Department of Environmental Conservation reported that GM had been illegally dumping PCBs on the property.

Several studies conducted by the State University of New York at Albany (DeCaprio, Johnson, Tarbell, Carpenter & Chiarenzelli), (Schell, Hubicki, et al., 2003), (DeCaprio, Johnson, et al., 2004), (Denham, Schell, et al., 2004), (Newman, Aucompaugh, et al., 2005), (Schell, Gallo, et al., 2008) examined the impact of PCBs on human health and the environment at Akwesasne. One of the studies, *Polychlorinated biphenyl (PCB) Exposure Assessment of Multivariate Statistical Analysis of Serum Conger Profiles in an Adult Native American Population*. A study was conducted as part of the University of Albany's Superfund Basic Research Program from 1995 to 2000. Blood samples were obtained from 753 adult Akwesasne

Mohawks between 18 and 95 years of age. Serum blood samples identified the “source and route” of PCB exposure in the Akwesasne adult population (DeCaprio, et. al, 2005, p. 1). Researchers discovered that PCBs were prevalent in all the subjects who participated in this longitudinal study. A statistical correlation with age was noted since older subjects had a greater concentration of PCB accumulation in their serum blood samples (DeCaprio, et al, 2005).

Significant levels of PCBs were also detected in the breast milk of St. Regis Mohawk mothers, and in the water, soil, plants and wildlife in the area. Although diet, mainly fish, is the primary route of PCB exposure in humans, other minor routes include nonaquatic food sources, the soil, land, and air. PCBs, also known as persistent organic pollutants, have also been suspected of disrupting pathways in the endocrine system (Schell, et al., 2009). Due to concerns about bioaccumulation and human health, PCBs were banned in the United States in the 1970s; however, they are still persistent in the environment. In the past, PCB exposure has also been associated with cognition and developmental problems, and impaired intellectual and memory functioning (Newman, et al., 2006). Another study (Schell, et al 2008) concluded that PCBs had an effect on thyroid functioning in Akwesasne youth.

3.3 Environmental Justice Movement

The single most important catalyst for the EJM was a historical event that occurred in 1982 in an African American community, located in Warren County, North Carolina. When local residents heard that garbage trucks were going to be dumping soil contaminated with polychlorinated biphenyls (PCBs) in their neighborhood, several community members lay down in the middle of the road, and they successfully prevented contaminated soil from being dumped by blocking the entrance to a nearby landfill.

The EJM emerged in the late 1970s and early 1980s, a social paradigm that attempted to link grassroots environmental work with national policymaking. Faber & McCarthy (2001) define the EJM as a political force that addressed the systemic causes of social and ecological injustice. The EJM can be viewed as the nexus between two main themes related to social institutions and ecosystem degradation. Based on the idea that social institutions and class status in a capitalist economic system have, historically, fostered institutionalized racism, these two streams of thought lay the foundation for a theoretical construct – that systematic racism can lead to a disproportionate share of the burden of ecosystem degradation among poor people and ethnic minorities (Pellow & Brulle, 2005).

Environmental racism, a phrase defined by Brulle and Pellow, is the discrimination that occurs in environmental policy making, based on “race,” and the development of regulatory processes and laws that “deliberately target people of color by establishing toxic waste facilities in their communities” (p. 3). As scholars continue to identify the differential environmental risks that individuals face as a result of their race and/or socioeconomic status, a considerable body of literature has been developed on this topic.

A report published by the United Church of Christ in 1987 revealed that low-income areas and communities of color were being disproportionately affected by toxic hazardous waste. The study, *Toxic Wastes and Race*, indicated that these communities were being targeted for the disposal of society’s unwanted waste. This report ignited a national grassroots movement. Along with protests in African American communities in the southern states, the report garnered significant attention from the federal government.

Approximately twenty-five years later, a follow up study was conducted; however, more precise methodologies were used the second time. Information contained in the latter report

confirmed that low income areas and communities of color were still being disproportionately affected and that race was still a higher predictor than income (Bullard, Mohai, Saha, & Wright, 2008).

Some of the major historical events that influenced the EJM were based on environmental activism, mainly in the form of civil disobedience, the establishment of local community-based nongovernmental organizations and the subsequent linkages that developed between individuals, groups, academics, and professionals. Snow and Oliver (1995) define social movements as the structures of social relations that exist prior to the development of social movement activities. From Snow and Oliver's perspective, these social relations are based on communications among stakeholders, connections that provide a context within which new ideas and actions can flourish. Perhaps one of the most consistent findings in the study of collective behavior is that pre-existing social networks are capable of facilitating collective actions. Research on social movements suggests that these interacting units are usually groups rather than individuals.

Numerous grassroots organizations emerged during the 1980s and 1990s. Rhodes (2003) researched the characteristics of organizations that served as catalysts for the mainstream EJM; the initial focus of environmental justice organizations was to locate hazardous waste sites, remove the waste, and correct related conditions. It was only later that this advocacy turned into a broader social movement. These are the same types of environmental justice activities that many Native American tribes engaged in during that time. One significant problem for the EJM was that it has been nearly impossible to substantiate claims of injustice through empirical studies (Agyeman, Bullard, & Evans, 2003), because proving that industry is legally responsible for the contamination has been challenging.

3.4 Social Movement Theory

National movements are mainly based on collective actions, undertaken with some degree of resource mobilization and organization. These types of organizations usually exist at the margins, mainly because they promote or resist “change in a group, society, or world order of which they are a part” (Snow & Oliver, 1995, p. 571). In addition to environmental justice groups, several legal clinics were established nationwide during the EJM (Bullard, 2005).

When people unite to facilitate social change, they often participate in collective action activities to address issues that affect them in their everyday lives. Goodwin and Jasper (2009) define social movements as “collective, organized, sustained, and non-institutional challenge[s] to authorities, power holders, or cultural beliefs and practices” (p. 3). Social movements can also be viewed as the manifestation of specific complaints in the polis, addressing a wide array of social problems ranging from the protection of basic human rights and lifestyles to political and economic issues. Social movements are based on collective actions stemming from the desire of ordinary citizens to change some aspect of society by engaging in organizing activities and protests (Goodwin & Jasper, 2009). By using both traditional and nontraditional methods, social movement activists employ a variety of tactics including direct action and protests (Weldon, 2011).

Snow and Oliver (1995) emphasized the link between social movement entrepreneurs and their constituents, mobilizing potential, and framing social movements with master collective action frames. The development of framing significantly changed the way scholars viewed collective behavior, because the focus shifted from social constructions of meaning to an emphasis on the actual strategies that movement leaders used, individuals called social

movement entrepreneurs. From Johnston and Noakes' (2005) perspective, scholars that have studied different aspects of framing theory have facilitated a "more complete understanding of frames and framing processes . . ." (p. 3).

Scholars have used social movement framing theory to analyze both the Civil Rights Movement and the EJM during the 1980s and 1990s. Benford (2005) views the EJM as a collective action phenomenon, impacting how people "perceive and interpret the world around them, and 'how they understand that meaning'" (p. 39). The use of collective action frames has been used to interpret "observed and experienced reality" (Benford, 2005, p. 38). Perhaps the study of social and environmental movements using framing methodologies will contribute to the scholarly research on Native Americans in this area in the future.

3.5 Organization Theory

The construction of an organization is based on a series of arrangements and agreements, representing a constantly recurring process of negotiation. Agreements reached are created and changed, a fluid political dynamic that, in addition to other factors such as organizational characteristics and behavior, shapes an organization's structure (Samuel, 2005).

Performance is an important organizational characteristic, based on four main aspects: interactive, contextual, episodic, and improvisational. Interactive characteristics refer to member creativity and how they participate together, an interdependence that occurs as they enact individual organizational roles. Performance is contextual, since organizational events occur within a larger organizational framework. Episodic refers to events, both formal and informal, where specialized and local meanings can emerge; each event has a beginning and an end. Improvisational refers to unique activities, never fully scripted, that members engage in as they create new interactions based on scripts either being altered or ignored (Keyton, 2011).

Organizational performance can facilitate our understanding of organizational culture. According to Wilson (1989), every organization has a culture defined as a “patterned way of thinking about the central tasks of human relationships” (p. 91). Selznick assigned human traits to organizations by suggesting that the character of an organization is comparable to the character formation of an individual. Schein states that culture can help us understand both hidden and complex aspects of organizational life (2010). Culture can be viewed from a knowledge level perspective, characterized by “organizational norms, values, stories, goals and ambience” (as cited in Lomi & Larsen, 2001, p. 65). All of these concepts are often the subject of considerable debate, and a comprehensive definition is still somewhat abstract. Despite this ambiguity, organizational culture continues to be in vogue; the idea has been around for at least 150 years (Wilson, 1989).

Community organizations are unique because of the nature and role of the mission; members usually join because the mission is a good match with their own personal needs. Although these are usually stand-alone groups, some commonalities are shared with other groups. Community organizations focus on the mission and vision while building levels of cohesiveness among members that can supersede more formal organizational structures. Social activities and events are important functions of community groups since they can draw upon the attitudes, opinions, beliefs and opinions of the membership to stimulate action in ways that other dimensions cannot. This can facilitate social change because it relies on individuals uniting together based on common ideas and values, which are closely aligned with an organization’s mission and vision (Tafoya, 2010).

Leaders that emerge from within these kinds of organizational contexts are usually hierarchically superior, using control and authority in the decision making process; however,

current research suggests that there is value in sharing power by empowering followers. Allowing decisions to be made at hierarchically lower levels can be advantageous since instilling a sense of empowerment in followers can increase their sense of self-worth and fulfillment (Hickman, 2010).

Structure is another important organizational characteristic; several distinct elements and dimensions are generally accepted including specialization, standardization, formalization, centralization and configuration (Sorge, 2002). Mintzberg (1979) defines organizational structure as the sum of ways in which an organization divides its labor into distinct tasks and then achieves coordination.

Organizational theory informs this study and provides a conceptual framework for understanding different governance and leadership styles. Several alternatives to Weber's theories on bureaucracy have already been developed (Bordt, 1997), such as grassroots organizations, collectives, modified collectives, and participatory democracies (Rothschild & Whitt, 1989).

3.6 Methodology

Grounded theory is the main lens used for this inquiry, in addition to case study analysis. Based on social and psychological theories about symbolic interaction, grounded theory emphasizes communication and human interaction as a dynamic expression of how meaning is created. Symbolic interaction is a major concept in the Social Sciences discipline. Neumann (2011) suggests that symbolic interaction is the construction of meaning through dialogue and an individual's perception of those interactions.

In *Case and Situation Analysis*, Mitchell demonstrates that case studies are "a reliable and respectable procedure of social analysis" (2000, p. 183). Although the case study approach

has been criticized because it is difficult to extrapolate data and then make generalizations from individual cases to larger social processes, statistical inference is not the overall goal of case study analyses. Case studies are used to highlight issues, particularly for important relevant topics.

The strength of the case study approach lies in the researcher's ability to study the unique aspects of each particular case, describing the actors and events and how they relate to each other. From Mitchell's (2000) perspective, examining the context within which events transpire, the social relationships that emerge, and the situations that actors find themselves in are all features of the case study approach. The author states that case studies allow the researcher to observe phenomenon and gain intimate knowledge about a particular case, connecting circumstances and events so that general principles can emerge.

Common case study research activities include interviews, analysis of Documents and observations. When conducting interviews, respondents are usually asked to discuss key incidents or examples of the main topics under study; however, relying on interviews alone can sometimes be a disadvantage for the researcher. This is mainly because respondents often discuss their perceptions and opinions at the time of the interview. For this reason, it is important to rely on the academic literature to balance participants' memories and "explanations of why things have come to be what they are" (Chadderton & Torrance, 2011, p. 54). Research activities included interviews with fifteen Native American staff members at local environmental organizations, in addition to a review of archival documents and fifteen hours of participant observations. Interviews were

inductive and respondents were asked to discuss key incidents and examples of the main topics under study.

The opinion and value questioning method was utilized, which facilitated an in-depth understanding of the cognitive and interpretive processes of interviewees. This enables the researcher to develop questions that explore opinions on issues, judgments, and values. Questions were knowledge based to identify what a respondent might know about a particular situation. Questions were singular in nature and included standard probes so that the conversation remained fluid. Developing a rapport with interview participants was particularly important, since trust was a critical issue when working with tribe members. Using the member checking method during interviews was also an effective way of finding out if interviewees fully understood the questions being asked of them. Member checking provides interviewees with positive reinforcement and reflexive feedback (Patton, 2002).

3.7 Data Analysis

The following page contains a chart representing the word frequency response rates for illnesses identified by participants during the interview process. The impact of PCBs on human health was a major concern for local environmental organizations, and was a motivating factor in their organizing, protests and community activism efforts.

The chart on the following page is related to frequency of participant responses related to illnesses that tribe members directly linked to PCB exposure:

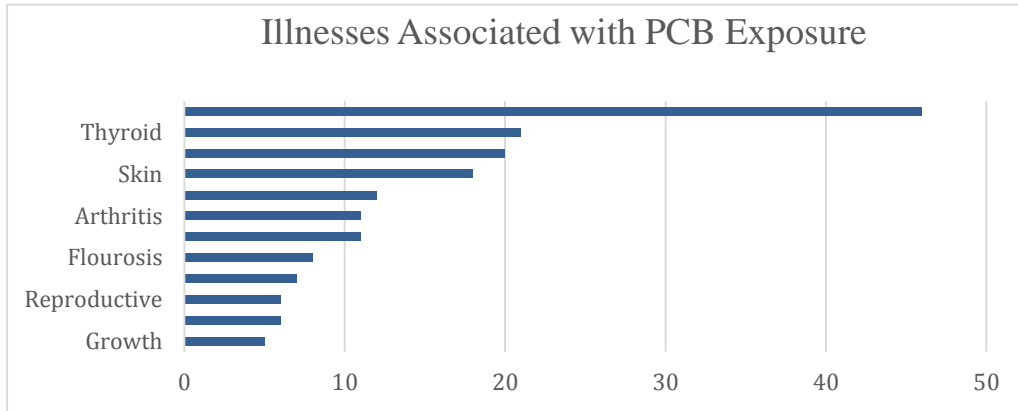


Figure 4: Word Frequency for Illnesses: Participant Response

General Characteristics

The declining health of many Akwesasne residents was a motivating force that facilitated community organizing and direct action initiatives. Fifteen out of a total of twenty-five interviewees were conducted with staff members and volunteers, from the Mohawk Council of Akwesasne (MCA), the St. Regis Mohawk Tribe Environment Division (SRMT), and the Akwesasne Task Force on the Environment (ATFE). Table 4 on the following page lists a breakdown of interview participants:

Table 4: Breakdown of Interview Participants (n=15)

Ancestral Descendants of St. Regis Mohawk Tribe	14
Descendant of Ancestral Haudenosaunee Tribe	1
Number of Female Staff Members	8
Number of Male Staff Members	7

Table 5 represents themes that emerged from the data analysis, conducted with the qualitative software, Hyper Research. Eight main themes were identified and coded. The frequency of responses is related to how many times interviewees discussed a particular topic, or thematic code:

Table 5: Eight Main Thematic Codes and Associated Frequencies (n=15)

Thematic Codes	Response Frequency
1. Structure	11
2. Restructuring	7
3. Decisions	15
4. Leadership	15
5. Philosophy	12
6. Strengths	14
7. Like Work	15
8. Weaknesses	15

3.8 Research Findings

Overview

The SRMT, the MCA, and the ATFE are led by members of the St. Regis tribe; some members that work or engage in volunteerism are descendants from other related tribes residing in Akwesasne. Akwesasne shares a border with New York State and two Canadian provinces; the border intersects the Mohawk Nation territory at several locations, both in Canada and on the U.S. mainland. Cornwall Island is just off the coast of Canada, but other areas such as the Snye and St. Regis Village are examples of Canadian provinces that border Akwesasne on the U.S. mainland.

SRMT & MCA

The SRMT receives funding from the U.S. government and provides a variety of health, educational, legal, and human services. Employing hundreds of community members in its numerous offices, the SRMT's main administration building is located near Hogansburg, New York. Both the SRMT and the MCA have Environment Offices. The MCA is funded by the Canadian government, providing similar health and human services for Canadian residents.

Each of the two governmental budgets is completely separate, and they are not allowed to share funding across borders. MCA offices are located on Cornwall Island, but also in the Snye and St. Regis Village on the U.S. side.

Tribe members classify the SRMT and the MCA as nontraditional governance structures, mainly because they are overseen by the U.S. and Canadian governments and were not established by the Haudenosaunee people (who would, otherwise, have not chosen bureaucracy).

Organizational Structure

These two organizations are similar because they both have hierarchical structures, even though Canadian tribe members initially overtly rejected the structure that was imposed on them, essentially, requiring staff members to adhere to a dominant bureaucratic model or risk losing funding. Over time, the tribe agreed to function as a bureaucracy. This basically means that the established governance structures were foreign to the Haudenosaunee people, but acceptable to the U.S. and Canadian government.

Adopting these kinds of hierarchical structures enabled the SRMT and the MCA to be in alignment with potential funding streams and grant writing initiatives. The tribe would have chosen a different organizational structure, but they had to adhere to mainstream dominant structures in order to be viable. They are also funded, under similar circumstances, by the federal and provincial governments.

Funding

Unlike the MCA, the SRMT has the benefit of receiving funding from the Environmental Protection Agency, while the MCA does not. Native communities designated as Superfund sites are eligible to receive funding for programs, strategic planning, and related staff positions in the United States. In contrast, the MCA lacks money for these kinds of programs and is not even

funded for an Environment Office through normal channels. The MCA is funded through administrative overhead and general funding from other programmatic and budgetary categories that have agreed to support an environmental office.

The MCA and SRMT both have the unique characteristic of overlaying aspects of their cultural heritage and traditional governance styles in their decision making activities and within the overall organizational culture, while adhering to the bureaucratic model. The St. Regis Mohawk culture, leadership and philosophy form the basis for alternative methods of relating to each other and communicating in the workplace. Within the larger structure, individual offices can be viewed as flattened hierarchies, organization members working in small teams, with a decision making style that can be classified as a representative democracy. Therefore, the organizational culture within the SRMT and the MCA are retaining elements of their native culture, societal norms, language, and associated environmental principles, even within the larger bureaucratic framework.

ATFE

The ATFE is distinctly different from the other two groups, because it is the only grassroots group on the Mohawk Nation territory. The organization was established with the specific goal of addressing the social and environmental degradation caused by exposure to PCBs and other chemical pollutants. The ATFE, preceded by an earlier grassroots group, is made up of volunteers from within the community and the SRMT and MCA. None of the staff are paid, and, although membership has ebbed and flowed over the years, approximately twenty people have been steadily involved with ATFE activities over time. The ATFE engages in direct action activities and protests, while fostering an environment where potential leaders are encouraged and supported. They later established a 501C3 nonprofit status, by creating a second

ATFE entity (LLC). While it is actually an extension of the original group, this was a strategic move so that the ATFE would be eligible for potential funding opportunities. They developed a structure that would be a good fit for governmental and nongovernmental funding by establishing a Board of Directors, along with a Chairperson. Other than the Board and Chair, the ATFE has no formal structure and decisions are made through consensus building, following more culturally traditional methods of communicating. Being traditional means that an organization, or individual, is adopting the Mohawk philosophy, encouraging each member to have an authentic voice in the decision making process.

In contrast to the other governmental agencies, members are free to be themselves and govern according to their own traditions and decision-making styles. The term most often used to describe how tribe members feel about protecting the environment is that we must all protect Mother Earth. The ATFE has emerged as a highly respected organization in the community and is admired by staff at the MCA and SRMT. They are able to develop strategies and make decisions without constraints. It became increasingly clear from the interviews that the ATFE commands the most respect in the community because it is representative of the native perspective, rooted in community activism, direct action, civic participation, and environmental responsibility.

Below are excerpts from interview transcripts describing the strengths, weaknesses, leadership, organizational structure, and decision making at the ATFE. Pseudonyms have been used instead of real names to protect the confidentiality of participants:

Strengths

John: I like working there and I enjoy the commitment of everybody to protect our natural world and the people are great and we just work hard and volunteer or whatever to try and make Akwesasne a better place and protect the natural world.

Allan: Well, the strengths are actually the members, the core members that are there every year participating and coordinating activities that... they are people you can count on and if you look over the history of the ATFE you'll find that there is a core group of people that are there. They are there to get the events done and this goes above and beyond actually what they do at their regular job. While they work, most of them are associated with environmental programs; maybe in their regular course of work, they extend their workday, they expand their weekends, planning, coordinating, and executing things they are trying to accomplish in their community.

Mary: The strengths are the people then. They have good character. They are passionate about what they do, they have a vision and I know people can be discouraged because of what happens as a normal matter course of life. If you look at some of the people that have been involved with it a number of years, why did they do it year after year? There are a lot of obstacles.

Dennis: Some people would say it's not worth it. If you look at the spring cleanup, why do people pick up trash every single year? Knowing that the day after that they pick up stuff from the ditch, people will be throwing things out the window – it's because they really care about their community and they're showing leadership by example and I think, I don't know what you call the opposite of leadership, but I know that people driving down the roadway thoughtlessly throwing out the window are not showing leadership.

They're not. They're demonstrating the opposite of that. It's destructive when you think about it and people that are out there picking up the trash, handing out seeds, they see a better future and they're willing to put the time and effort to lead people in that direction by example.

Melissa: I think that it's supported by the three governments [two nontraditional and one traditional], which gives it a lot of strength and a lot of validity. I think the other strength is that the reputation has been built in the community and it's an organization that's respected by everyone. The knowledge, the skill, the education, the experience of everybody that's involved and as an organization, everybody just kind of works together as a team.

Joe: The strengths are that they operate for the community. And for our, say, government. They do. They lead projects such as the yearly cleaning of the ditches; they promote that type of activity. They promote a lot of community activity in a lot of areas. I'm not sure if any other organization does that.

Weaknesses

Robert: Yeah, not having the meetings in the morning during the week ...probably more communications, like what's going on where are we at today, that kind of stuff. It's kind

of left to the Councils now to do and that doesn't always happen, but even the activities of the ATFE - like in a public annual report or you know press releases on what's going on, that more community communication I think I would improve that ...but I know we have no money so...

Rebecca: Well, I don't know. It's hard to say. They have a shoestring budget but they manage to pull it off every year. I don't know how you demonstrate cost efficiency any better than that. Maybe one of the things I think they could do better, but I don't know if it's their role, is maybe outreach and education.

Peter: So I guess maybe as a weakness but not as a fault, and I want to make that distinction, is that maybe getting more people involved to pick up some of those volunteer roles.

Philosophy

Janet: Oh, yeah. What is it? It's for preserving and protecting the environment, you know. the guiding... The overall philosophy that I understand is the overall betterment of the environment for the communities, and it actually transcends some of the, some of the projects, or I guess maybe the best way to compare it is - I think even within the organization I am paid to work in there is a lot of stove piping and you're fixed and governed by whatever program you're paid to work within and you're constrained to that.

Sean: And with the ATFE, as a volunteer, you're able to work or even as an organization, it's very broad, they actually address a number of issues, agriculture, horticulture, natural resources, such as fish and wildlife, they actually have a strong cultural component as well. So I guess the heart of their philosophy is the Mohawk culture.

Evan: I think to use our cultural base to address the issues facing the people and the natural world.

Donna: Safe and healthy community. Safe and healthy environment. That's what the philosophy is...that would be it.

ATFE: Public Policy Tools

The ATFE emerged as the main voice for Mohawk concerns over the environmental degradation that had occurred. Understanding the actions of the ATFE from a public policy perspective can identify how they organized themselves to confront the enormity of this difficult

environmental problem. Using several concepts from Stone's book, *Policy Paradox*, several policy tools used by the ATFE were catalysts for community activism and social change.

The relationship between the ATFE, governmental and non-governmental agencies and industries, in addition to local tribal governance networks, has proven to be challenging, particularly since the tribe is intersected by the border between the U.S. and Canada. This has proven to be a difficult endeavor, due to the number of policy actors and stakeholders involved in this debate, especially when negotiating with large multinational companies like GM, Alcoa, and Domtar. A number of contaminants, besides PCBs, such as mercury, arsenic and fluoride, have caused significant damage to the natural resources in the area as well as to human health.

The ATFE still managed to negotiate with stakeholders, engage in numerous protests, drawing media attention as a primary method to ensure their story was being conveyed in the media. The goal was to spread the word about contamination in Akwesasne and to promote the need to clean up toxic environments. The method of remediation was always of utmost importance to ATFE members because they wanted the contaminated soil treated and removed and the St. Lawrence dredged to remove harmful PCB contamination from the River. The EPA, along with GM, has been resistant to full remediation, and to date, they have only capped the main site of contamination behind the GM plant. Capping basically means containing the waste by lining the area within which the waste is contained, and putting a cap, or lid, on the specified area to prevent leakage into the groundwater and nearby waterways.

Although the EPA and GM have failed to remediate the GM site to the standard the Mohawk require, numerous initiatives supported this idea, and the establishment of the ATFE was to ensure that the rights of the Mohawk people were being protected in this case. The main purpose of the establishment of the ATFE was to support these kinds of initiatives based on

direct action, protests, articulating their story in the media, civic participation and other activities related to environmental responsibility.

ATFE members met on a monthly basis to discuss strategies, educate the community, and raise awareness about these issues among native and non-native populations, locally, nationally and internationally. The overall idea was to establish an organization that could form a coalition of support to oppose the activities of GM, and other corporate polluters, while continuing to build networks of support for their cause. The ATFE has had a longstanding history of negotiating with local and federal officials to protect treaty rights and maintaining ownership over their ancestral lands.

Since public policy debates are expressed in words, public opinion can be shaped through the use of language and rhetoric. Stone (2002) discusses the use of symbols in her book *Policy Paradox: The Art of Political Decision Making*. One of the main strategies of the Mohawk community, and the ATFE, was to engage in protests that could draw media attention. The Mohawk protests were designed to ensure that their rights were being protected and that they had an authentic voice in the decision making process across borders. Their main concern was to clean up the GM plant and the St. Lawrence River, so that the soil, groundwater, and waterways were remediated. The Mohawk tribe maintains that this is their legal right, based on a long history of treaty agreements with federal and provincial governments.

According to Stone (2002), words can be symbols that convey “something else,” apart from their intrinsic meaning (p. 137). These underlying, subtler, meanings invariably carry a hidden message. The statements related to the GM contamination in the form of a huge dumping ground, or mound, in the back of the GM building, and the discussion of whether or not to cap or excavate the waste, has mainly been used to describe the overall injustice of their ancestral lands

being polluted over time. The message implied is that justice will not be viable until these areas are cleaned up and restored to a high standard, as outlined by the ATFE and other environmental groups. This demonstrates that the meanings of words are not merely intrinsic, but, instead, political instruments created by individuals that define them (2002).

Symbolic representation can be broken down into four main categories: narrative stories, synecdoches, metaphors, and ambiguities. The symbols used by the Akwesasne community are evidenced by cultural expressions of their right to an environment free from environmental toxins; specific aspects of their argument have been used to define the whole. A synecdoche is a symbolic representation frequently used to further political goals and define problems within the context of a prototype or typical case. This typical case framework can be applied to a host of social issues.

The events that transpired on the Mohawk territory are not unlike protests that have occurred in other Native American and First Nations communities, as environmental activists manifest the need to protect their sovereignty rights. Stone dedicates the last several chapters of her book to an in-depth analysis of policy tools and solutions including inducements, rules, rights, facts, and powers.

One of the main strategies, or policy tools, that the ATFE used, in the early years, was to draw media attention to the issues, by ensuring that an article was written about the subject as often as possible, to get the word out to the larger native and nonnative community. Inducements are designed to change people's minds about issues based on their assumptions about how people behave. Inducement policy tools can achieve specific goals and, for this reason, Stone identifies goal seeking as the fundamental basis for inducements. The primary

idea is that rational people, who have clearly stated and articulated goals, will invariably behave in rational ways.

Rights are another policy tool that the ATFE used in the past as a discussion of rights is the underlying theme for much of the ATFE's direct action/community activism, protests and advocacy -- whether they were fighting to protect the environment or focusing on their collective quest for self-determination. The ATFE has relied on a discussion of rights as a policy tool to advocate for the protection of their land, the natural world, and their sovereignty while also reducing the threat of environmental stressors on human health for future generations. Although discourse on rights is powerful, especially when the topic is related to race, ethnicity and culture, it is still difficult to substantiate what specific rights ought to be, and why they should be granted to particular individuals or groups. Generally speaking, theories about rights can be vague, even though they "coordinate individual behavior to achieve a collective purpose" (Stone, 2005, p. 325). This is particularly true for groups engaged in resolving inter-group conflict.

Another strategy used by the ATFE was to identify strategies to ensure they were at the negotiating table with the U.S., Canadian, state and provincial governments, in order to be included in the decision making process. Examining various tools can be useful, since understanding these issues from different perspectives can inform the policy analysis. For this reason, ten interviews, mainly with individuals involved in tribal politics and tribal governance networks, were conducted. This provided important insights into how native governance is structured. In addition, I conducted interviews with other related policy actors and stakeholders, while also engaging in participant observation research activities, by attending meetings and conducting phenomenological observations at the offices of the ATFE, MCA and SRMT. Below

is a list of stakeholders and governance networks that were an important aspect of this particular inquiry:

- Policy networks established by the Mohawk.
- Tribal Lawyers, Judiciary and Court Systems.
- Think Tanks developed by the tribe to counter actions by GM, Alcoa, Reynolds Metals, and Domtar.
- Tribal Environmental Leaders.
- Professional Groups.
- Area residents, both native and non-native.
- Administrative Bureaucrats.
- Professionals.
- Public Administrators.
- Local, State, Federal and Provincial Policymakers.
- Private Sector/Businesses.
- Multinational Corporations.
- Media (TV News, Print and Internet).
- Native American and non-Native community activists nationwide.
- Scholars, Researchers and other Experts.
- Lobbyists.

The poignant story of the Mohawk struggle to protect the environment and remediate waste at Akwesasne and their need to protect their land and natural resources for future generation has been widely publicized by the ATFE.

After being systematically denied treaty rights, and exposed to environmental degradation, the tribe has engaged in numerous acts of civil disobedience, particularly at the border crossing between the U.S. and Canada.

The symbols used by the St. Regis Mohawk can best be understood within the context of the narrative. The story of their fight to protect the environment and restore ecosystems has a beginning, a middle, and an ending. This narrative is closely aligned with their longstanding struggle against injustices related to the environmental degradation in their community. Their story is one of decline, a situation that has worsened to the point where it can no longer be tolerated. The story of decline fits the Mohawk situation because this tribe once

had a vibrant culture that was fostered by a pristine environment, which was later destroyed due to unfair corporate practices; the unwillingness to take responsibility and the illegal dumping of waste by GM is rooted in a sense of superiority. In the end, the Mohawk story changes when the EPA and other governmental entities begin to remediate the waste, hence their story was transformed from decline into a story of helplessness and control because they wanted to take control over their situation by expressing their feelings about the suffering they had experienced due to a history of oppression by the U.S. and Canadian government. The story changed when they decided to take back their power by expressing themselves through community organizing, protests, and making sure they were at the negotiating table.

This story has a “common twist,” which can be applied to the Mohawk narrative, because they believed that industry and the government, who have authority and control over their tribe, have used that control to “their benefit”, by concealing the actions of GM for several years, before any action was taken (Stone, 2002, p. 145). The conspiracy twist can be applied to the Mohawk situation because native tribes, in general, are mistrustful of government officials, corporations and individuals who they consider to be outsiders.

The policy actors involved in this case study include public agencies and organizations, 501C3 nonprofit groups, multinational corporations, aboriginals, and non-natives. The ATFE has been mindful of conveying their story in a way that reaches the right groups and their community advocacy were intended for a much broader audience so they could attract widespread media attention. Even strategies like these have public policy implications; the mode of delivery can be “face to face, in groups, by mail, phone, or Internet” (Salamon, 2002, p. 230).

Salamon discusses the dissemination of information in his book *The Tools of Government: A Guide to the New Governance*. The Mohawk chose direct contact with governmental officials across borders and contacting the polluting industries, and articulated their message to a much larger target audience to ensure that their story was continuously being followed by the local newspapers (2002, p. 230).

Ambiguity is a function of nearly every symbolic representation, because a word or phrase can have more than one meaning at the same time. Ambiguity is an important aspect of politics because it shifts the focus from the individual to the collective. Each of the individuals that participated in ATFE direct action activities highlighted their complaints by gathering together as individuals, ultimately forming a collective. As a result, issues that were previously problems for individual tribe members became a more powerful statement as they developed strategies based on a collective response (Stone, 2002).

From Stone's perspective, rules are mainly used to confer power to a group of people to make them behave in specific ways. Throughout all of the case studies, the power was clearly on the side of governmental officials and the private sector, entities that enjoy the full support of the state. Rules determine how specific agencies should perform based on an inherent sense of legitimacy. From the Mohawk people's perspective, government rules often represent the manifestation of colonization and oppression. Although the Canadian and U.S. governments, and multinational corporations, may believe they are acting responsibly, the rules that have been instituted (or a failure to implement rules, in this case) ultimately control the Mohawk's behavior. Rules require citizens in the polis to follow commands, even if they may be

fundamentally unfair. Rules can be separated into distinct categories. For other Native tribes, who are in the same predicament as the St. Regis Mohawk's, the rules they must follow are prescriptive, governmental laws enacted for particular circumstances.

3.9 Conclusion

Research and academic scholarly literature on Native American communities during the Environmental Justice Movement has been absent, or invisible. This article demonstrated that at the local level, the Native American community did engage in activities that were similar to other populations or communities of color during the EJM.

The catalyst for the EJM in the southern US in 1982 was occurring simultaneously as a largely unrecognized EJM took place within the Akwesasne community; more specifically, developing activist and organizing strategies within the ATFE. Both communities were engaged in the same kinds of activities, involved in direct action, participating in community activism, lobbying stakeholders and policy makers, while interacting within a transnational context with local, state, federal, and provincial governments. The Akwesasne Task Force on the Environment should, therefore, be included in the scholarly literature that discusses the EJM. EJM theories and constructs should also be inclusive of Native Americans and First Nations peoples, by giving them credit for their contributions to this important social movement. In addition, EJM framing theories used by scholars for the civil rights movement, and the EJM in African American communities, should also be applied to understand Native American community activism that occurred during the same timeframe.

Most experts agree that the main catalyst for the EJM was a protest in an African American community in Warren County, SC. It was during the same timeline that the St. Regis Mohawk tribe was advocating for toxic hazardous waste remediation at the GM site. Research

findings suggest that the ATFE engaged in similar types of direct action activities that numerous low-income and communities of color participated in during the EJM in the United States. The strategies developed were designed to raise awareness and gain nationwide attention. They also networked with numerous policy actors and related stakeholders, both governmental and nongovernmental, while working closely with tribal governance networks and officials. Other activities include community activism, organizing at the grassroots level and protests, and utilizing news and media outlets to draw attention to the environmental decline that occurred in Akwesasne during the early to mid-1980s.

One significant research finding is that the St. Regis Mohawks have alternative leadership, organizational culture, and governance styles that are distinctly different from mainstream dominant groups. They incorporate expressions of their cultural heritage, by weaving the Haudenosaunee philosophy and traditional ways of decision making, and infusing these characteristics into decision making styles, agenda setting, program development, and organizational culture and structure.

Many of the theories on organizational theory are rooted in data gathered from predominantly white organizations in the past. Research in native communities may be of value in furthering our understanding of community organizing and governance networks, in organizations that may not choose to adopt more traditional bureaucratic governance and decision making styles based on majority rule.

For the reasons highlighted above, the discourse on the EJM, particularly related to framing and related social movement theories, should reflect the contributions made by Native American tribes nationwide, especially for those tribes located near Superfund sites. This would

enable the St. Regis Mohawks to benefit from connecting with other communities of color, for the purpose of networking, strategic planning, and sharing relevant information.

Over the course of the past few years, the St. Regis Mohawk Environment Division has applied for funding under an EPA program in order to clean up PCBs in the Grasse River, which runs through the Mohawk Nation of Akwesasne. Since they have been unable to demonstrate that they are an environmental justice site, they have been unsuccessful in their attempt to secure funding in this regard. Perhaps this study will enhance their chances of being successful candidates for this funding in the future. Utilizing framing theory may prove useful in furthering our understanding of the contributions native communities have made in the area of environmental justice.

CHAPTER 4

CULTURAL IMPACTS OF PCB CONTAMINATION ON THE ENVIRONMENT AND THE CULTURAL INTEGRITY OF THE ST. REGIS MOHAWK TRIBE IN THE MOHAWK NATION OF AKWESASNE

ABSTRACT

Although numerous international forums, commissions, and declarations have emphasized the need for the protection of indigenous peoples and human rights, the negative effects of environmental pollution on Native communities and their culture, traditions, and way of life, have not been clearly defined in the global discourse on this topic. This study examines the impacts of environmental pollution on the cultural integrity and traditional way of life of the St. Regis Mohawk tribe, an aboriginal community located in northern New York. In close proximity to the St. Regis Mohawk tribe, a General Motors manufacturing plant was illegally dumping polychlorinated biphenyls (PCBs), persistent organic pollutants, on site.

This study utilized ethnography as the primary methodology, incorporating Community Based Participatory Research. Responses from interviewees were collated under each question using Hyper Research. Research findings clearly demonstrate a direct link between the degradation of ecosystems due to industrial pollution and the loss of numerous aspects of Mohawk culture. Over time, the Mohawk community has found ways to adapt to the degraded environment despite significant impacts to their culture. Some have resisted the degradation and continued to maintain their cultural traditions despite known contamination and likely health risks; others have learned through their education system about Mohawk traditions, heritage and culture, those activities that the tribe enjoyed prior to the contamination of ecosystems and natural habitats.

4.1 Introduction

The *Human Rights Situation of the Indigenous People in the Americas* is a compilation of documents dating back to 1972. This was the year that the Inter-American Commission on Human Rights first addressed the rights of indigenous peoples. The Commission promoted the idea that it was the sacred obligation of the states to provide protection for indigenous people and their territories. It gained wide recognition in 1985, when members of the group spoke on behalf of the Yanomami people, an indigenous Brazilian community. Advocating on their behalf, the

Commission asked the Brazilian government to address concerns related to the tribe's ancestral lands (Inter American Commission on Human Rights & Organization of American States, 2000).

According to information contained in the documents, indigenous people have been historically dispossessed and discriminated against, and received the lowest level of services, income, and access to opportunities. Native communities have also faced difficult circumstances such as the expansion of outside national economies and other social and political forces imposed on them from non-native groups. These factors have had an impact on their traditional way of life, territories, and physical borders (Inter-American Commission on Human Rights & Organization of American States, 2000).

Between 1995 and 2004, the United Nations established a forum for indigenous peoples, the *United Nations International Decade of the World's Indigenous Peoples*. Later adopted by the U.N. General Assembly, the forum acknowledged the need to elevate the discourse on indigenous rights by creating a framework based on international law from a global perspective. The shift in ideology enabled indigenous rights to be a part of a new initiative called the U.N. International Human Rights Regime, thereby enabling native peoples to participate in “setting international standards for indigenous rights” (Keal, 2003, p. 114).

The overall idea of the forum was to restore indigenous rights by being inclusive regarding matters of international law. This has been a positive development, since it emphasized the need for self-determination. Relying on aboriginal land claims as a central issue, aboriginal communities were now considered subjects, not objects, of international law (Keal, 2003).

The inability of aboriginal communities to retain their lands has had a negative impact on their political, cultural, and economic institutions. In response to systemic patterns of

colonization, many indigenous communities have survived, continuing to address the inequities they have endured, by utilizing strategies based on diplomatic negotiations, legal processes, and civil disobedience. International law has been a tool used in the modern era to address these inequities. International law is defined as processes and procedures used by institutions across boundaries and jurisdictions. Understanding indigenous rights from this perspective can be seen as early as 1977, with the drafting of the Declaration of Principles for the Defense of Indigenous Nations and Peoples of the Western Hemisphere. The document was created by indigenous participants at the Geneva Conference on Discrimination Against Indigenous Populations. The Declaration promoted the need to recognize indigenous communities as part of distinct cultures and societies that should be recognized as nations (Anaya, 2004).

Several international forums, commissions, and declarations (The World Conference on Indigenous Peoples, 2014), (Green, J., 2008), (Bersh, R., 1996).have emphasized the need for the protection of indigenous peoples and human rights, however, the negative effects of environmental pollution on native communities, and on their culture, traditions, and way of life, has not been clearly defined in the global discourse on this topic.

The following study examines the impacts of environmental pollution on the cultural integrity and traditional way of life of the St. Regis Mohawk tribe, an aboriginal community located in upstate New York near Massena. The effects of chemical pollutants and toxic hazardous waste on the environment have been well documented; however, the effects of environmental hazards on the ability of tribes to maintain their cultural heritage has not been well understood, nor have they been included in the debate on native peoples fundamental human rights.

In the early 1950s, General Motors (GM) built a manufacturing facility adjacent to the Mohawk Nation of Akwesasne community. By the mid 1980's, the New York State Department of Environmental Conservation found that GM had been illegally dumping polychlorinated biphenyls (PCBs) in the area for nearly three decades. The company was later placed on the National Priorities List in the United States as a Superfund site, or toxic hazardous waste facility. The Mohawk Nation of Akwesasne territory is a transboundary community; settled in the mid-eighteenth century, it is the only indigenous tribe that straddles the U.S./Canadian border.

4.2 Background

The main reason polychlorinated biphenyls (PCBs) were used in the manufacturing process, in companies like GM, was because they prevented electrical transformers, produced in the United States, from overheating. PCB emissions occur when transformers either explode or leak while in service, or when there is leakage after they are discarded or dumped in landfills. PCBs are classified as organochlorines, also known as persistent organic compounds. It is extremely difficult for PCBs to break down, so they remain in the environment, or persist, particularly in the bodies of humans and animals. PCBs are passed along from a female mammal to the developing fetus and newborn, travelling from the umbilical cord to the embryo; breast-feeding provides another route of exposure. PCBs can be found in nursing mothers because breast milk has a high fat content.

One of the side effects of PCBs, passed along in this manner, is damage to the developing nervous system in embryos, which can ultimately affect a young animal or child later in life since it has a negative effect on cognition and the ability to “think and tolerate frustration” (O'Brien, 2000, p. 68). To put the hazards into perspective, if PCBs are found in a twenty-year-

old woman in the U.S., they would be persistent in the body and subsequently would be transferred through the placenta and breast milk in measurable quantities to embryos for five generations. (O'Brien, 2000). When persistent organic pollutants like PCBs are emitted from transformers, they either travel from the ground-to-ground water or they travel through the air after they evaporate. If PCBs wind up in the ocean, they contaminate the fish and sea animals like seals that are fatty mammals that eat fatty fish that contain PCBs. In a remote area in Arctic Quebec, Inuit women that eat fatty sea mammals and fish have breast milk with three to ten times more PCB contaminants than the breast milk of white women in Quebec (O'Brien, 2000).

4.3 Native Americans and the Environment

The history of Native Americans and First Nations peoples is well documented. Indigenous communities in the U.S. and Canada have had to survive European colonization, exposure to disease, discrimination, and genocide. For over five hundred years, their land and treaty rights were violated, and their right to self- govern, institutionalized (Falkowski, 1992).

A prominent environmentalist and writer, and an Anishinabe, Winona LaDuke has been voicing her concerns about the environment throughout the twentieth century. LaDuke continues to be an advocate for environmental justice; she has written several books and lectured throughout the United States. Some of the initiatives she has participated in are protests against the contamination of Navajo communities from uranium mines, the construction of the Hydro-Quebec power plant at James Bay, and the dumping of hazardous waste in Alaska and in Canada. Perhaps she is best known for her run as vice presidential candidate along with Ralph Nader in 1996 and 2000. Her father, Vincent LaDuke, was also an environmental activist (Johansen, 2005).

LaDuke has also been a leader in her own Anishinabe community in northern Minnesota, offering key insights into Native American culture, values, and ecological issues. LaDuke defines the “good life” as a continuous rebirth that represents a sense of place, social justice, religion, and ecology. She describes these linkages as fundamental organizing orientations or life ways. The basic concept is that Native cultures are distinguished by their social, spiritual, and ecological connections, and by an understanding of the link between humans and their environment (LaDuke, 1994).

After attending Harvard University in the 1970s, LaDuke moved to the White Earth Ojibwa Reservation in Minnesota. She voiced her opposition to environmental racism and advocated for reclaiming Native American lands from the federal government. She was awarded the Reebok Human Rights Award and is a board member of Greenpeace, in addition to establishing two of her own organizations, the White Earth Land Recovery Program and the Indigenous Women’s Network.

In the *Militarization of Indian Country*, LaDuke (2012) discusses the effects of PCBs on native communities within the United States and Canada. Persistent Organic Pollutants such as PCBs are carried through the air to cold climates. They are pervasive in the Arctic, and in Alaska, Canada and Greenland. Although no longer in use, the Distant Early Warning (DEW) Line consists of 63 individual military radar sites, located along the 66th parallel. All of the sites have been heavily contaminated with PCBs and other bioaccumulative hazards. Studies conducted in northern climates have resulted in fish advisories urging people to refrain from eating fish in areas downstream from the sites.

While it is evident that Native Americans have faced considerable challenges in the past, maintaining their sovereignty has been the highest priority for most leaders. Sovereignty means

that Native Americans have the right to control their cultural, economic, and political processes. Greaves states that defending and enhancing sovereignty is a struggle that figures into “countless decisions and programs on every tribal agenda” (Greaves, 2001, p. 30).

Sovereignty rights are often defined as states having absolute control over their domestic affairs. Autonomy is an inherent component of sovereignty. In the international arena, these terms suggest that states have the right to be free from intrusion of other states; however, sovereignty rights are more limited when understood within the context of indigenous politics. For indigenous peoples, sovereignty is the right to self-government and self-determination, but limited in their ability to exert these rights within the confines of colonization, or within the “borders of a colonial state” (Aks, 2004, p. 32). For aboriginal peoples, true sovereignty is nonexistent, but this language is used by indigenous peoples to bolster their right to autonomy. For indigenous peoples, the loss of sovereignty also lessens their ability to self-govern. As a result, indigenous nations have a unique relationship with the federal government, one that continues to promote the need for autonomy over the domestic affairs of native tribes and bands (Aks, 2004).

Native American treaty rights have been an important method used to protect the environment and to conserve natural resources. Over two billion acres of Indian land changed hands between the United States government and Indian tribes prior to 1868. This was due to the signing of approximately three hundred seventy treaties. For this reason, the United States government was able to secure rights to vast reserves of natural resources, especially timber and minerals. The stores of natural resources that Native Americans have retained continue to be targeted by oil, gas, and mineral companies. The uranium industry, in particular, has been notorious for exploiting natural resources on Native American lands (Girdner, 2002).

The legal name initially used for the reservation system in the United States was Indian Country or areas defined by federal law. The Marshall Decision established reservations in 1831, along with dependent Native American sovereignties. These laws can be changed or altered by the federal government at any time and, for this reason, dependent sovereignties are limited. Native communities have had to fight to defend their sovereignty rights, especially over the past twenty years. Some examples of Native American sovereignty issues are the right to the tax free sale of liquor and tobacco, the repatriation of human remains, and the controversy over their right to build casinos (Greaves, 2001).

When Europeans first arrived in North and South America, their main interests were land claims and empire building. This caused the disruption of economies and cultures for people that originally inhabited both continents. The Europeans killed innocent men, women, and children along the way. For those that survived, the threat of disease and slavery left a trail of widespread human suffering. After the European settlement of the American colonies, the people that had been subjected to this systemic oppression were later called “indigenous, native, or aboriginal” (Anaya, 2004, p. 3).

Although broadly defined, the term indigenous refers to people that have previously lived on lands later dominated by other groups. Indigenous people were also viewed as descendants that had been historically oppressed by other societies, as in the European quest for land claims and empire building, displacing numerous indigenous communities. They have also been referred to as *peoples*, due to their unique cultural distinction, and their continuous “existence and identity that links them to the communities, tribes, or nations of their ancestral past” (Anaya, 2004, p. 3).

4.4 First Nations

First Nations is the name for the aboriginal peoples of Canada. First Nations governance structures consist of tribal chiefs, bands, and tribal councils, operating on First Nations reserves throughout Canada. Canadian First Nations peoples established the Assembly of First Nations in 1968 as the National Indian Brotherhood, an organization that lobbied for common concerns of First Nations, including issues related to the environment.

Members of the Assembly of First Nations developed the First Nations Environmental Stewardship Action Plan, published in May 2005. This stewardship plan highlights First Nations' perspectives on the environment in the 21st century. Information contained in the plan demonstrates that First Nations aboriginal peoples want to exercise their right to self-governance and to manage their own lands and natural resources in conjunction with other jurisdictions. The plan also highlights the need for First Nations peoples to engage in activities that reflect their traditional lifestyles and to consume traditional foods. For this reason, aboriginal tribes are more likely to be impacted by environmental pollution than the general population, exposing them to increased health risks and an overall decline of their quality of life (Assembly of First Nations, 2005). This has been the case for many Native American and First Nations tribes.

The state began regulating Canada's First Nations peoples because the national government believed that they needed an authoritarian statutory bureaucracy. The Canadian government was able to gain jurisdiction over all native peoples; the hierarchy of bureaucracy included the Secretary of State, the Department of Interior and the Department of Indian Affairs (DIA), established in 1880. The Indian Act of 1876 defined Indians as "wards of the state," requiring a status defined as a crime, even though it was based solely on their identity, and not on deviant activities. The main concern of the Indian Act and the Department of Indian Affairs was

to assimilate the 'savages', forcing them to adhere to established Anglo-Canadian standards (Greenbaum, Pushchak, & Wellington, 2009, p. 71). One of the main goals of the Canadian Indian Act was to define who was an Indian. From the start, Canadians' relationship with First Nations people was an overt colonial domination. Later, this domination was replaced with a more subtle discourse on protecting indigenous land and native culture.

In 1763, a Royal Proclamation defined the settlement of the colonies. The Proclamation stated that Indians who gave land to the Crown could expect assert control over lands reserved for them. This later became known as the reserve system. These Indians were also supposed to receive annual payments. After the Proclamation, those treatments and agreements that were signed caused native people to lose their land, and led to the conclusion of their original rights as aboriginal peoples. The Royal Proclamation was the start of the relationship that was later defined as a trust relationship, and "the subsequent fiduciary obligation that British/Canadian colonial governments later had with indigenous peoples." This proclamation and the effects of the treaty systems are representative of a tradition of colonial oppression, in addition to being the basis for a myriad of claims for indigenous rights in Canada (Greenbaum, et al., 2009, p. 71). Later, in 1867, the British North America Act gave the provincial government the power of jurisdiction over Indians and the lands that were reserved for them. This Act is the document that articulates how the Canadian government decided to dominate and protect Indians as compared to the Indian Act that focused on assimilating indigenous people into Canadian society.

In the mid-1800s, the Canadian government believed that First Nations peoples would eventually vanish, similar to being an endangered species. The general idea was that the government would be responsible for protecting and civilizing them on lands called reserves,

where they would be far enough away from big cities and white people. The notion was that if they were on the reserves, they should be protected so that the process of civilization could ensue. The Canadian government wanted them to be more like Europeans by dramatically changing their lifestyle; instead of engaging in hunting and fishing activities, they were expected to remain on the reserve and subsist on farming and agriculture (Strange, 1997).

Once members of the First Nations community could demonstrate that they had improved their moral character, they would then be provided with a deed to parcels of the reserved land, and subsequently be allowed to have voting rights. This meant that they had reached the goal of becoming assimilated and would no longer be considered Indians, but rather, Canadian citizens. The goal was for Indians to assimilate to the point where they would no longer need reserves, and the Indian problem, as defined by the Canadian government, would eventually be solved (Strange, 1997).

It is important to note how indigenous peoples were viewed by the judicial authority in Canada after the settling of the provinces and territories in the 18th century. In 1929, a Canadian judge stated that the “savages” rights of sovereignty [and] ownership were never recognized.” For this reason, large tracts of lands were passed on to Britain, not from a purchase or by conquest, but by treaties with France, which had acquired them by priority of discovery and ancient possession. The Indians passed on to Britain, from France, in a similar manner (Richardson, Imai, & McNeil, 2009, p. 25).

4.5 The Haudenosaunee: Six Nation Confederacy

The Haudenosaunee, otherwise known as the Six Nation Confederacy, predated the establishment of the United States and Canada. The Six Nations include the Seneca, Cayuga,

Onondaga, Oneida, Tuscarora and Mohawk. In existence for generations, each nation has aboriginal rights to its territory, governance, and traditional way of life.

Since the first time the Haudenosaunee came in contact with Europeans, they have continued to negotiate issues related to political alliances and trade. Agreements made between the Haudenosaunee and European settlers were represented in their sacred wampum belts; many of the belts are still in their possession. The wampum belts provided a unique record of all of the agreements and promises, most of them directly related to the land. In this way, Haudenosaunee history was recorded, documenting their willingness to share the land and to put their faith in the words of the early treaties made when the United States was first established.

In the latter part of the 1700s and early 1800s, the Iroquois had a significant impact on federal Indian policy, mainly because it was recognized as one of the most substantial Native communities in the Eastern United States. By 1790 the Oneida, Onondaga, and Cayuga had acquired a significant landmass in New York State. In order to limit further acquisition of land, Congress intervened in 1794 with the passage of two Indian Trade and Intercourse Acts (1790 and 1793), forcing treaty negotiators to seek federal approval for all land purchases.

During that period, native communities were subjected to a system of forced assimilation, confining them to live in specific areas and significantly limiting their freedom and independence. In the mid to latter part of the 1800s, Indian policy reformers emerged, and, after the Civil War, the Indian treaty system was developed. The treaty system was based on the idea that areas that native communities lived in were sovereign. This concept was first highlighted in the *Commerce Clause in the U.S. Constitution*. The Commerce Clause outlined the relationship between the Indian Nations and the American Nation. Although treaty rights were later

systematically violated by the dominant society, these rights enabled native communities to gain a greater sense of autonomy and independence (Genetin-Pilawa, 2012).

The first three treaties between the U.S. federal government and the Haudenosaunee were signed in 1784, 1789, and 1794. This proves that, as early as the 18th century, the government recognized the Indians as a legal political entity. In the treaties, the U.S. and the Haudenosaunee established formal boundary lines, while both parties agreed to respect their right to individual sovereignty. The Trade and Intercourse Act supported the Haudenosaunees' right to their own lands, even though the treaties were often ignored when governmental officials tried to take over lands that belonged to them. In 1788, New York successfully extinguished all Haudenosaunee land titles; however, by 1795, there was some concern that the New York State acquisition of Haudenosaunee lands was illegal (Genetin-Pilawa, 2012).

4.6 Haudenosaunee Culture

When the French first came in contact with the Haudenosaunee people, they renamed them the Iroquois. Early Iroquois settlements were located in New York and the Province of Ontario in Canada. The Iroquois are descendants of several different groups that merged into one. A transition took place from early Owasco society to Iroquois culture in the eastern part of New York State, perhaps a combination of several allied groups joining together to form a small community. Several distinct aspects of Iroquois culture emerged such as language, the development of the longhouse, and activities related to growing corn.

In the 1400s and 1500s, the Iroquoian population was distributed throughout what is now known as New York State. A shift in distribution was due to intermarrying, combining small clusters of native Owasco society into larger groups. By the fifteen and sixteenth centuries, the community had become larger, occupying defensible positions surrounded by palisades. Earlier

mergers between small scattered Owasco and Oak Hill communities forged alliances among native communities, facilitated by marriages within groups. Once married, males typically moved from their mothers' longhouses to their wives'. Based on this system, brothers could easily wind up in different longhouses or even different communities. The emergence of the Iroquoian nations was a process, rather than a single event. These merging and integrating methods were required in order to maintain peace in early Iroquoian society (Engelbrecht, 2003).

The main area inhabited by the St. Regis Mohawk was the middle Mohawk Valley, later called Montgomery County. They hunted far north in the Adirondacks, along the Susquehanna, and in the southern areas of New York. By the latter part of the 1500s and early 1600s, the population in the Mohawk Valley had increased. St. Regis Mohawk populations were estimated to be between 8,110 and 10,570 (Engelbrecht, 2003). The rich floodplains of the Mohawk River enabled the Iroquois to engage in productive fishing and farming activities. They also controlled the river route to a Dutch trading post, built in 1614. Mohawk villages were located in the same tribal area; only five or ten miles separated them.

The Mohawk needed firewood for cooking and heat. Young trees were used for repairing buildings or expanding villages; they likely used the areas around the settlements to find wood. Open areas surrounding the villages would not have been appropriate for finding firewood, since they provided less wood than a more mature forest. In the late 1500s, Mohawk populations were located in specific core areas and, by the 1850s, Europeans observed an abundance of deer in their territory.

Haudenosaunee is a League called the "People of the Longhouse" or "The Whole House." The Seneca and Mohawk tribes were the keepers of the Western and Eastern doors, while the Onondaga were the central fire keepers. League meetings were held at Onondaga; the

League originally consisted of five nations. The societies used kinship as a model for their association, referring to the Oneida and Cayuga as “you, our children.” The response by the Oneida and Cayuga was “our fathers, kinsmen.”

The Mohawk, Onondaga and Seneca were a collective of three nations that comprised one side of the League; utilizing moieties, or sides, which was a significant change from the earlier model based on individual nations (Hauptman, 1986). In the early 1700s, five Nations from the Haudenasaunee, otherwise known as the Iroquois Confederacy, were living in the central and western part of what is now known as New York State. The tribes consisted of the Mohawk, Oneida, Onondaga, Cayuga and Seneca. Another aboriginal community, the Tuscarora, later emigrated from North Carolina, becoming the sixth Iroquois Nation. The Iroquois spoke Algonquian, as had the Huron.

The majority of conflicts between Indian tribes and Europeans in that area centered on the fur trade. While Europeans were mainly interested in extracting fish from local rivers and lakes, aboriginal communities benefited from trading fur in exchange for European commodities; goods they received as a result of the fur trade included such items as knives, trinkets, cloth, mirrors, and axes. The French and Dutch were able to buy beaver skins and imported skins from other small animals like fox, rabbit, and deer. In the 1620s, the French and Dutch were importing approximately 30,000 beaver skins annually, contributing to the largest slaughter of New World animals in American history. For example, it is estimated that close to twenty million beavers were killed for this purpose in the 1600s. The fur trade was initially dominated by the Huron Confederacy, but the Iroquois Confederacy of Five Nations was interested in controlling the fur trade along the St. Lawrence River. The Huron built a lucrative fur business

with the French, trading approximately twelve to fifteen thousand pelts per year between 1619 and 1629 (Miller, 2009).

Since the latter part of the 1700s and early 1800s, the Iroquois inhabitants of New York, Oklahoma, Wisconsin, and Canada appear to have had their own distinct cultures, histories, and institutions. During this period, they were widely recognized as six separate nations: Mohawk, Oneida, Onondaga, Cayuga, Tuscarora, and Seneca. Even though they had distinctions, they shared a number of collective beliefs, mainly related to the right to individual tribal sovereignty. The Iroquois are one of the largest Native American groups in North America and common threads link all of their communities, such as land claims, language, and ceremonies. Despite being separated, often by sizeable distances, each of the six nations has never been entirely isolated from each other. By the late 1940s and 1950s, New York Indians were among other Iroquoian nations that were becoming increasingly threatened. The Oneida of Wisconsin and the Seneca-Cayuga tribe of Oklahoma were close to being fully terminated after the war. The problems they faced included tribal land claims, survival of their economic and cultural way of life, and significant problems with tribal factions (Hauptman, 1986).

During post WWII years, numerous Indian lands were sacrificed. Three Iroquois communities, the Saint Regis Mohawks (Akwasne), Caughnawaga, and Tuscarora, faced tribal land loss between 1954 and 1961. The Saint Lawrence Seaway and the building of the reservoirs at Tuscarora significantly changed Indian life by changing the course of the Saint Lawrence and Niagara Rivers. Not only did the US government condemn Indian Lands, but they also industrialized areas previously considered to be frontier regions. With this transformation, they also polluted the environment, thereby impairing self-sufficiency and completely destroying the St. Regis Mohawk's (Akwasne's) fishing and dairy cattle industries. Through the

expropriation of lands that belonged to the Iroquois, these governmental agencies later became the brunt of an Indian backlash. The Seaway project had an impact on the Saint Regis Mohawks (Akwesasne) and Caughnawaga, by shaping their future economic, political, and overall worldview.

4.7 Methodology

This inquiry utilized ethnography as the primary methodology, incorporating a philosophy based on Action Research, or Community Based Participatory Research. Data collected from each of the interviews was broken down according to individual questions for analysis. Responses from interviewees were all collated under each individual question using Hyper Research. In this way, I was able to organize, compare and contrast data sets. This kind of coding provided me with a comprehensive visual display of the data. As a result of the analysis, a list of codes generated from common themes was developed. Hyper Research was an excellent analysis tool, and was an efficient method of identifying and evaluating common themes among data sets.

Ethnography

The meaning of *ethno* is people or folk – and *graphy* means to describe something. Ethnography can provide an account of a particular culture, society, or community. Originally established in the anthropological tradition, it has since been used in a variety of other disciplines for a number of contemporary social issues. Ethnography has a distinct tradition in qualitative inquiry and participant observation. Its guiding assumption is that any group of people who interact with each other for a period of time will ultimately evolve into a new culture (Patton, 2002). Ethnography requires an immersion in the culture under study, in addition to extensive fieldwork activities. This qualitative methodology is based on an examination of the culture of a

group of people. Modern anthropologists have used ethnography for various studies on issues related to globalization, poverty, education, and environmental degradation.

Fieldwork involves spending a significant amount of time in another society, living with local people and learning about their way of life. As participant observers, ethnographers often take part in events within the culture because it helps them to understand the behaviors and thoughts of the group under study. Participant observation is a core component of the anthropological tradition. Anthropologist Clifford Geertz states that “thick description” is a “critical part of ethnography” (Neuman, 2006, p. 382).

Ethnographic field studies involve two major activities: fostering relationships with people in the setting and participating in activities of the group being studied. Secondly, ethnographers must systematically record the phenomenon being observed, accumulating data based on a “written record of those observations and experiences” (Emerson, Fritz & Shaw, 1995, p. 1).

Some of the ethnographic research techniques used for this project included:

- First hand observations of daily behavior, including participant observations.
- Conversations with different levels of formality – from short conversations to in-depth interviews.
- Detailed work with key stakeholders regarding particular aspects of community life.
- Discovery of local beliefs, cultural phenomenon, and perceptions.

Ethnographic research does not always require the use of all of the techniques; however, interviews and participant observations are the most widely used methodologies. Data sets gathered from the ethnographic notes were coded and analyzed.

Fifteen hours of participant observations were broken out into two, three and four hour segments. I conducted observations at the Akwesasne Museum, a Mohawk Longhouse, the tribal

court, and the Mohawk Health Clinic. I also attended two yearly International Powwow events sponsored by the Akwesasne community.

Direct observations are a valuable research tool. Although the primary source of qualitative data is what people say (through verbal exchanges or in a written format), there are limits to how much can be understood just from the spoken word. The reason for engaging in observational analysis is to engage the reader in the phenomenon being observed. Therefore, the observational data collected should be detailed and in-depth. Data must also be descriptive, providing a context within which the data can be understood, by explaining how and what occurred. What the observer sees and records ultimately becomes the “eyes, ears, and perceptual senses for the reader” (Patton, 2002, p. 23). Observing other individuals and groups in a social setting requires the researcher to pay attention to details. Careful recording of data gathered from qualitative fieldwork is a core component of participation observation. A field researcher must then translate “back and forth” between the “field and the outside world” (Neuman, 2006).

Community Based Participatory Research (CBPR) was the philosophical construct used, which played an integral role in the research design and implementation. CBPR, also called Action Research (AR), is rooted in the concept of participatory democracy. This style of inquiry takes a philosophical approach to research, and it is based on inclusivity and participation. Using CBPR, community members can identify issues that may be important to them and, along with a research professional, set the agenda, design the study, analyze the data, and implement an action plan. Instead of using traditional qualitative methodologies based on participant observation, Action Researchers often assume the role of a facilitator. Action Research is a method of providing community members with the opportunity to have an authentic voice in the decision-making process and ownership of the data collected.

Relying on a framework that emphasizes how to understand and interpret the interview situation is beneficial. It is critical to articulate what results are desired, the topic under study and what you want to get out of the research. How the researcher prepares and acts during the interview process is all relevant (Alvesson, 2010, p. 45). According to Alvesson, the best approach to conducting an interview is to utilize a reflective approach, which is more indirect than the process that is often promoted. Thinking in a nonlinear way can be more beneficial, carrying out a study informed by awareness of the complexity of the interview situation, with ongoing analysis and interpretation. The researcher should interpret what goes on in the interview situation, thinking more broadly about the interviews. Toward this end, the interpretation needs to be conducted on an ongoing basis (Alvesson, 2010).

Twenty-five interviews with Native American and First Nations respondents were based on the standardized open-ended interview technique, to identify common themes for evaluation, thereby minimizing variations from one interview to the next. Interviews were semi-structured so that follow up questions enabled respondents to expand on their answers. Using the open-ended technique maximized the use of the interviewee's time, while maintaining the focus of the interview. The same questions were asked in the same way and in the same order with standard probes. Standard probes ensured that conversations remained fluid (Patton, 2003). Five additional deductive interviews were conducted with local governmental and non-governmental officials to inform the study.

4.8 Research Findings

Driving on Route 37 through New York State during my first research site visit in the Mohawk Nation, I eagerly anticipated working with the tribe. I was struck by the beauty of the

landscape and rich biodiversity. I thought that I would be able to immediately access tribal resources and quickly identify potential interview participants.

Through meetings with numerous environmental leaders and tribe officials, it became clear that building trust relationships with community members would be a critical catalyst for them to consider working with me. I attended meetings with several members of local environmental organizations. I had to submit a formal application to conduct the study with the Akwesasne Task Force on the Environment. It took several months for them to approve, after many conversations about what methodologies would be acceptable for the tribe. I quickly learned that they did not want to be surveyed, and they were not going to consider participating in focus groups. For this reason, it took a few more years for final approval. Tribe members strongly resonated with the Community Based Participatory philosophy guiding the study; terminology that reflected a spirit of inclusivity and ensured collaboration consistently elicited a positive response. Utilizing ethnography, by immersing myself in the culture and daily life of tribe members, along with a Community Based Participatory Research approach, I was able to gain access to a community that requires researchers to adapt particular qualitative methodologies to suit the community under study. A Memorandum of Understanding that contained a number of benefits that UVM was willing to offer tribe members, such as educational opportunities and access to UVM's library services, also had to be developed and ultimately implemented, to ensure that the project would be mutually beneficial, fostering a spirit of collaboration and inclusivity, while sharing authenticity and power in order to ensure the research project was mutually beneficial.

Initially, it was hard to understand why a small Catholic community from Kahnawake, located near Montreal, Canada, first migrated to this area. The original descendants of

Akwesasne were mainly Catholic, and had come to Akwesasne to establish a place where the Mohawk, who had an affiliation with the Catholic religion, could live together in one area. The tribe is a reflection of the original aboriginal ancestry in the Mohawk Nation, based on this religious affiliation. Many interview participants recalled how their families blended Mohawk culture and Catholicism, by retaining some aspects of their cultural heritage while at the same time, attending Catholic churches. The Mohawk culture was able to be passed on from one generation to the next in this way, and over time, many community members are reconnecting with aspects of their traditional culture and language.

When the tribe migrated to Akwesasne in the eighteenth century, they found a lush environment with an abundance of natural resources and, according to the majority of individuals that participated in the interviews; they essentially lived off of the land. In this way, the land and nature played an integral role in Mohawk culture, and the activities that they engaged in were closely associated with nature. Much of their land was lost through failed treaties with both the U.S. and Canadian governments, but this remains an area that they can call home. Many of the Mohawk Islands, located off the coast of Canada, are still being litigated in Canadian courts.

When the St. Lawrence Seaway was built, in 1959, the Canadian and U.S. governments condemned specific Mohawk landmasses; condemning them meant that they could be seized in order to build the Seaway. The St. Lawrence Seaway was much more than an economic development plan for community members. In fact, when interviewees discussed the Seaway, they always called it the river. That is because they had a cultural and historical relationship with the river in ways that are not well understood by non-natives. They call it the river because it is part of their ability to maintain the integrity of their cultural life.

Some of the main characteristics of Mohawk culture are a direct reflection of how their society was originally organized, how decisions were made, and how they interacted with the environment. The tribe actively participated in activities that involved the natural resources in their area. From the interview transcripts, it became increasingly clear that their culture, ecological knowledge and traditional way of life were directly interrelated with the natural resources of the area.

Although many Mohawk men travelled to nearby cities for work in the iron industry, the main source of income for Mohawk families was fishing. Fish was also a fundamental diet staple, in addition to other ways that fishing was connected to Mohawk culture. Since fishing activities played an instrumental role in the economic development of Mohawk society at Akwesasne, it also played a significant role in cultural activities such as large gatherings with extended family, a cultural component that is closely aligned with tribal food systems and issues related to food security due to contaminants, mainly bio-accumulated and found in the fatty tissue of fish consumed by tribe members.

Of all of the interview questions asked throughout the entire study, the most frequently used words were “community” and “fish,” both with over two hundred response rates. This demonstrates that fish contamination had an overwhelming impact on Mohawk culture at Akwesasne, not to mention the fish economy that came to a sudden halt when the U.S. and Canadian governments issued fish advisories in their area. When tribe members were informed that fish were contaminated with PCBs, their culture and economy as they had known it for centuries came to a sudden halt. They could no longer consume fish, although they had previously eaten approximately five to six fish meals per week. The inability to consume fish meant that there would be no more family gatherings for fish fries, no more events where they

had the opportunity to pass on traditional stories, ecological knowledge, or pass down their traditional Mohawk Thanksgiving prayer; essentially, their culture and society could no longer survive without adapting to the reality that their food security was in jeopardy, significantly impacted by PCB contamination.

Honoring Mohawk traditions and cultural way of life is reflected in the large gatherings, closely associated with the consumption of fish, and their creation story and other traditional ecological knowledge are often passed on from one generation to the next during these cultural activities.

The Mohawk Thanksgiving Prayer is an important tradition and highlights the emphasis on protection of the environment; participants often referred to the earth as their Mother. Fish was a staple in the diet, but also represented the ability of the tribe to pass on knowledge within family and extended family units.

By the mid-1980s, tribe members found out that both fish consumption and using fish for economic purposes were not realistic or safe. They were prevented from even eating one fish meal per week. So fish was the main issue mentioned when discussing cultural impact with tribe members. The second highest frequency throughout the study was the word count for community. This demonstrates the importance of both community and fisheries as top priorities. The frequency rates emphasize the degree of importance among Akwesasne residents.

Another important key insight from data collected on Mohawk cultural impacts was that interviewees often responded to the question about culture by discussing diabetes. Initially, I did not fully understand this phenomenon; however, I soon realized that diabetes could be classified as having impacted culture since diet was closely aligned with aspects related to cultural activities and the nexus between health and culture. The overall health of the community has

declined because members report not being able to eat ‘fresh’ and winding up with diabetes, both due to exposure to PCBs and its impact on human health, and to the inability of tribe members to participate in cultural activities due to declining health from diabetes. This community has been identified as having high diabetes rates nationwide.

Due to the close relationship between food security and culture, the emergent answer related to diabetes was a culmination of these two issues. Health impacts, therefore, do influence the ability of tribe members to maintain their cultural heritage over time.

Other recreational activities closely aligned with Mohawk culture include hunting, picking berries and gathering fruits and nuts, picking medicinal herbs, trapping small animals for food, gardening, agriculture and livestock. Each of these areas is highlighted in the table and chart below. PCB contamination has had an overwhelming effect in all of the areas listed, including issues related to their ability to maintain their language, also a part of culture, and their traditional ecological knowledge. Cultural activities are a reflection of the nexus between culture and food security.

Connection to the Environment & Mohawk Creation Story

When asked about whether respondents thought that native people were closer to the environment than other communities, the results were varied. While some interviewees believed that native people were closer to nature, others stated that they had learned of other aboriginal groups that they thought had similar connections. Below are excerpts adapted from interview transcripts that are a reflection of the attitudes, values and beliefs of St. Regis Mohawk tribe members from data gathered on this topic. Pseudonyms have been used instead of names to protect confidentiality:

Sarah: Well, we have a different kind of relationship with it [nature], yeah. Customarily, yes. Like when you think about traditions and customs, culturally yes, we do because our culture was based upon our relationship with the environment. Mother Nature was the law of the land, that's the supreme law. Cause that's what you had to deal with in order to survive. That was your relationship -- well you need that. You need to clean the air, you need to replenish the rivers, and you need to feed the nature around you.

.....they [U.S. and Canadian governments] are not accountable. They don't make themselves accountable for how they've affected that -- what have they done, the pollution that's been spewed into the air. How have they done that? So they don't ever take any kind of responsibility for anything that they've done and how nature responds. And our view is that Mother Nature is like really shaken, and she's trying to shake it off.

Whatever it is that's hurting her and harming her, she's like really trying to shake it off. So that's how we view it -- she's a living, breathing thing, this earth that we walk on. She's our mother. She's gonna react, just like we would react. If someone was on our back and poking holes in us or whatever. There's tons, I don't know. That's how we look at it. Our opening address, our view, our vision of how we fit in the scheme of things, is just the opposite of mainstream.

[Interviewer: Do you think that native people are closer to the land than other cultural groups?]

Mary: It all, no...I just know what we have. You know when I go to environmental meetings with non-native people, there's a lot of people that have a strong relationship with the land and I don't know if it's the same as ours cause I'm not them and I just know what ours is and we have a responsibility because all of these things in the natural world they sacrifice themselves so that we can live -- we're not at the top of the chain you know, we're sort of dependent on everybody, all of the other parts of the natural world to survive and we have to be grateful that they do sacrifice themselves for us to survive.

Dennis: I think if you went back to your roots to Africa you would, cause I have met some traditional African people, you know -- from my environmental movement; they had the same connection to the land as we do. You know, I knew this one guy who says they have a Thanksgiving Address too. And I looked, he showed me his, I showed him mine, and he said, they are pretty similar, they have dances, they have festivals, you know, based on you know, based on their environment, just like we had ceremonies here. So, it's all based on, you know, where you are at, and where your land is. I think we still have that connection to our culture because we still have our land. All of these tribes that have lost their culture, those are the ones that have been displaced and don't have any land base anymore. That's what I think anyways.

[Cultural Traditions and Ceremonies)

We continue to do the ceremonies because everything is renewed every year. New life is

renewed; that is what the ceremony is about. But to do it, I don't think that's been impacted as much as the actual practice of growing our things. When you have our, let's say our strawberry ceremony, I think more people go out and purchase their strawberries when they used to go out on our land and be able to pick our berries because a lot of the land was well — I used to go and pick the berries at a certain area and now it was all scraped off because they are, that's the area they put sewer or sewage.

One of the data sets on culture was related to the Mohawk Creation Story. Interviewees were asked when they first heard about the Creation Story. This question appeared to prompt respondents to tell stories about their childhood, and it also surfaced issues within the community related to traditional and nontraditional life styles. Below are passages from data sets on the Mohawk Creation story, describing what meaning the story had for participants, as a lens to further understand aspects of their cultural life:

Andy: Yes. [Interviewer: age 10 or under?] Yeah. [Interviewer: passed on in your family?] Mmhmm. Literally, it was something that everybody believed in, or just something that was part of your culture - but you did not necessarily believe everything but just the philosophy.

The general idea is that the society as a whole is based on the Mohawk Creation Story and Thanksgiving Prayer, but contrary to what one might think, the story – in contemporary Mohawk society, is not taken literally.

Anna: Interesting question. When you are a child, you believe in Santa Claus, the Easter Bunny, and you believe in all of these things. So you believe in a literal sense, but as you get older and you find out that everybody lied to you, you start to think, well what does it really mean?

Myself, I've come up with my own idea, and I've heard other people talk about it in a sense that you got to remember that these were spiritual beings and maybe the only way you can think about it is in human terms because humanity is limited. So we think about it in relationship to ourselves – this is how it would be. And when you think about the relationship between the sun and the moon and the earth and how actually our life here does depend on them and their relationship and how they dance in the sky, how they move around each other, what they all give to our life here.

They are absolutely essential to our life, so you start thinking about it in spiritual terms and celestial terms -- that there is a relationship there, we are dependent on them so

therefore when we look at relationships here, we look at aunties and uncles and grandparents so we look at relationships like that. This is our mother [earth], she provides for us and she gives us everything that we need just like our own mother does. The sun is like our elder brother, always there, always there, you can depend on him and he helps you, lights your way, and assists you....

So, I can take that one creation story about when the sky woman fell, did you read it? {Interviewer: No, not yet}. Well, we believe that we come from there, right, so we came from the sky. There's a lot of cultures that think that we didn't come from here. So anyway we don't think we came from here. We don't think we came from across the Bering Strait either. That's somebody else's theory.

Yeah, and I can describe it and I can show it and I can tell it and also I can draw in the old people's teachings into that about the relationship between men and women and when I look backwards, how, if that's true, that's my own theory, if that's true then how could they know that to make this kind of a story and relate it to that? That's just me. [Interviewer: You mean like the Bible, everyone makes sense of it for themselves?] Right, and there's a lot of lessons there about how you conduct yourself, you know now as a person so it's totally relevant to daily life now. There's a book written by John Mohawk and it's called *Thinking in Indian* and they may even have it in our bookstore over here. And if you read that, it's a really remarkable book.

With regard to the effects of environmental pollution on Mohawk culture, the findings were significant. Several themes emerged related to specific natural resources that have been damaged, and areas where the culture has been specifically impacted were unanimous across data sets. When questioned about environmental impacts on the Mohawk culture, heritage, traditions – the main theme that emerged, which garnered the most frequencies of all the thematic codes, was the impact of fish contamination on the culture. The five main impacts from the data suggest impacts of pollution on culture in the following areas: hunting, food/diet, gardening, native medicines, fruits and berries, traditional relationships with nature, and cultural impacts on other related natural resources. One remarkable finding was that numerous participants immediately responded by saying there is a high prevalence of diabetes, because they do not eat “fresh” anymore. These statements enabled me to understand the close relationship between food security and culture.

Another area that was impacted was traditional ecological knowledge and language. Once community members were prevented from fishing, through fish advisories, the language surrounding that particular activity was lost and, hence, the traditional ecological knowledge that would have been passed on from one generation to the next is gone forever.

The excerpts highlighted on the following page provide the reader with an in- depth understanding of how the cultural aspects of Mohawk life are interrelated with the natural resources, food systems, and ecosystems:

Medicines, Fishing, Trapping, Gardening

Sean: Well, the fishing, the trapping [has been impacted by pollutants] but also even the way that we pick our medicines, we have to go far away from here. We feel we do.

Because you don't want to pick it especially near a contaminant cove, you don't want to go over there and pick certain kinds of medicines. So people have moved further and further away from here to ensure that they aren't impacted by that and it's an issue because you don't always get the medicine, like you use the medicines that are in your locale, and you've got to go way over there, and you may not find what you need way over there.

Because it's growing over here, because we're in the valley and you're gonna go into the foothills to get away and they don't have what you need here and you have to go to other places because they don't have it or you go without it and that's a serious thing. And even gardening, people were working gardens all the time, you kind of worry about what you need and what you're gonna plant.

[Interviewer: How would you say this pollution has impacted your culture?]

Traditional Ecological Knowledge, Language, Fishing, Harvesting

James: Oh it's had a huge impact [pollution on culture]. We've lost, uh, we've lost the language of the waters and our use of the waters and our relationship with the waters and the water animals, because people stopped fishing and it was an intergenerational practice so all of the language that goes with netting, fishing, harvesting, the fish, the water animals, you know the consumption; we all ate fish and now hardly anybody does, uh, we all ate muskrat and different water animals and hardly anyone does now. So we've lost that whole world and, um, we're a water people but when you go on the river, you don't see people swimming. We've moved away from the land and the water because we got afraid of it and so there's a whole cultural practice in our relationship with the waters and the land around

the waters that's gone. So our language, our cultural practices, our relationships have all been severely impacted.

[Interviewer: has hunting been effected by pollution? Bear, Deer?]

Matthew: Yes. Deer, yes we did -- there's not much hunting of deer locally. It's done elsewhere. Same with beaver, same with muskrat, same with any small animals [turtles?] -- yep.

[The fish have mutations?] Oh, yeah for sure [what are they like?] They're like lesions, yeah.

[Gardening] A long time ago they stopped planting, now it's starting to come back because the plants aren't contaminating, they're testing. They have people going to donate -- like I donated my tomatoes, my cucumbers and different things and they sent it out for testing and so you know they monitored that and it's safer now.

Loss of Language and Traditional Ecological Knowledge:

Pam: Yeah, you know our culture is made up of our connections with our environment, so if our environment, if we have a disconnect to our environment, then we have a disconnect to our culture. Because now we are not teaching the younger generation to fish, and so they lose everything about that part of their culture, you know, they lose that connection to the river, because they are not out there on the river, and we lose the language that goes along with it too, and then eventually, we stop doing. If we stop doing that action, then you stop doing the ceremonies that go along with that. With that particular part of that.

Information from interview respondents describes the cultural impacts of PCB contamination on Mohawk culture. The Mohawks were known for their expansive gardens, but once they found out about the contamination they had to stop growing eating and growing food from their gardens. Gardens were much larger than one might have imagined, filling a wide landscape with fresh vegetables and native medicines that they picked as part of the heritage and customs. Cattle from their farming activities were exposed to fluorides from the Domtar plant, and other pollutants from area industries, and the cattle's bones became brittle, bone structures decayed, and they were unable to stand. This was part of the culture of farming, but also played an integral role in the local economy prior to exposure. Farming mainly consisted of these activities: raising cattle, gardening, and picking plants for medicinal purposes.

Diet was directly impacted from PCBs; individuals in Akwesasne say they can no longer eat ‘fresh’ and that consumption of natural foods is a part of their traditional way of life. Information contained in the interview transcripts revealed that they had to travel to other locations to pick medicinal plants. The hunting of deer and bear, along with the trapping of small animals such as muskrat, also was affected, since tribe members were forced to leave their homeland and travel to other places to hunt and trap. An excerpt from April’s interview transcript describes the changes that occurred due to contamination, followed by a list and accompanying visual display of cultural impacts.

April: It’s um, it’s for the people, you know, the community. It’s about environmental issues. What I like is that we’re trying to get the community back into gardening and back into a lot of the old ways. Because they gave up on that when all this pollution happened and they found out how sick the land was so they didn’t want to. Well, they were told not to fish and all this stuff – they lived off the land. That’s what my parents did - lived off the land and now they couldn’t do that anymore. We’re trying to get our people back to this.

Table 6, highlighted below, lists interviewee word response frequencies related to cultural impacts:

Table 6: Word Frequency of Coded Responses: Cultural Impacts (n=25)

<u>Word Used</u>	<u>Frequency</u>
Fishing	200+
Community	200+
Gardens	30
Cattle	27
Farming	25
Diet	20
Medicines	6
Hunting	5

4.9 Conclusion

Although the connection between environmental decline due from pollution and indigenous culture has not yet been fully explored, this stud clearly demonstrates that there is a

direct link between the two. The degradation of ecosystems and the disruption of natural habitats from the anthropogenic byproducts of industrial pollution have caused the loss of numerous aspects of Mohawk culture. The inability of tribe members to maintain their cultural integrity is, perhaps, a major disparity, since their philosophy and cultural traditions teach them that the natural world should be preserved for seven future generations. The hazards of PCBs have clearly been identified as a result of this research project; the inability of these environmental toxins to degrade over time is unsettling, and has had far reaching consequences for numerous indigenous communities and for people of color.

Since cultural heritage and traditions is such a vital part of native identity, losing traditional ecological knowledge, the ability to hunt and fish on ancestral lands, and the negative impacts on growing and eating fresh foods, has had a devastating effect on the Mohawk's cultural heritage and traditional way of life. This research provides data that conclusively links exposure to PCBs with a significant loss of the tribe's cultural integrity. Perhaps this study will be a catalyst for change, by relying on research findings to elevate the discussion to the level of the basic human rights of Native Americans and First Nations communities, the right to live in a clean environment and practice traditions and cultural practices that have been in existence for hundreds of years.

Findings from this study indicate that the environmental degradation caused by chemical pollution has had a direct effect on the St. Regis Mohawk tribe's ability to maintain aspects of their culture and traditional way of life over time. This is particularly troublesome, since a major concept embedded in the Mohawk philosophy and Thanksgiving Prayer is to protect and preserve Mother Earth for seven future generations. They also believe that it is, essentially, their

job to be responsible for giving back to the earth, a core belief that is passed on from one generation to the next.

Input from community members that participated in the research project suggests that the tribe has had to adapt to the changes that have occurred as a result of the impact of environmental decline on their cultural heritage, ecological knowledge, ceremonies and traditional way of life. Many individuals spoke eloquently, and with pride, about their traditional way of life; however, it became increasingly clear that their culture has been compromised since they are unable to hunt on ancestral lands, they must avoid eating fish, and they have to travel to other areas to pick medicinal plants for health purposes. They also report that they cannot grow vegetables in their gardens, an activity that has long been a tradition, particularly since young children from a very early age participate in growing and harvesting vegetables from large gardens.

Travelling to other areas to engage in cultural activities is one strategy that tribe members have used to continue traditional cultural activities; one individual emphasized that the community has had to adapt to the significant loss specifically related to their heritage, ceremonies and traditions that they have experienced.

In light of the loss of their ability to pass on some of their cultural traditions from one generation to the next, they have used other adaptive strategies to address the loss, and have relied on substituting activities since they are no longer able to participate in an authentic way. One of the main methods has been including aspects of their culture and traditions in their educational curriculum, so that all students are required to learn about their heritage as a core competency.

Perhaps the most important impact is related to native identity and how the loss has affected who they are as individuals, both personally and as part of a larger community. Replacing cultural activities that they had previously engaged in demonstrates how adaptive strategies have contributed to being able to carry forward their culture. The data also revealed that there is a strong voice of resistance in the community, with tribal members emphatically stating that they will not let the contamination deter them from their traditional way of life, by eating fish, hunting, and continuing to garden. One woman said that she decided that she was not going to have any more children so she could eat as much fish as she wanted since she would not be harming anyone other than herself.

As the community continues to identify adaptive strategies that they can use to adapt to the cultural changes due to loss, food security, and scarcity of natural resources, it might be helpful to provide the reader with some insight on this issue, by discussing one of the most interesting stories I heard during the interview process. When attempting to understand the issues from his perspective, I thought of the best phrase to use to explain what we were discussing would be ‘environmental epistemology’. One of the individuals I interviewed asked me what the trophy fish was in Vermont and I told him I didn’t know. He said that the trophy fish in Akwesasne was the Muskellunge, a huge fish nearly fifty feet in length. I was amazed that a fish that large still existed in the St. Lawrence River, particularly given the negative impacts the pollution had on aquatic life in the area. He explained that the children growing up today will understand the environment within the context of the environment they are born into, which will only be a snapshot in time. He went on to state that his biggest fear was that, by the time his grandchildren were born, the Muskellunge would no longer be the trophy fish, but rather, a thing of the past, subsequently replaced by a much smaller fish. He is hopeful that the

Muskellunge will continue to be the trophy fish for generations to come, and when native children are born into the world, they will be able to experience the same aspects of Mohawk culture as much as the Mohawk people have in previous generations.

Some other adaptive strategies that could potentially be used by the tribe are to work with the government, perhaps to secure funding for cultural activities such as hunting and fishing, so tribe members can still retain aspects of their culture over time. Even though they would not be able to eat what they caught, they could still reap the benefits of participating in cultural activities that they otherwise would be unable to accomplish. Education is another key method of maintaining cultural traditions; the tribe should consider adding more stories about Mohawk community activism by giving credit to community members that have been working to protect and preserve the environment. Community members are continuing to get their produce tested, and many tribe members report that the vegetables are ‘coming back.’ It will be equally important for the U.S. and Canadian governments to ensure there is testing equipment, so the community can take their vegetables to an environmental office to see if the pollution levels are decreasing over time. Finally, documenting and recording native speakers, oral histories, traditional ecological knowledge, and language that have been lost is the most important method that tribe members can use to ensure they maintain their cultural integrity. This is essential, since native ceremonies and traditions are an integral part of the Mohawk’s ability to maintain their identity.

CHAPTER 5

CONCLUSION TO DISSERTATION

HARMONIZING LESSONS FOR INDIGENOUS ENVIRONMENTAL JUSTICE

Although the connection between environmental decline due to pollution and indigenous cultural transformation has not yet been definitively explored, this study clearly demonstrates that such linkages can be made on the basis of field research.. The degradation of ecosystems and the disruption of natural habitats from the anthropogenic byproducts of industrial pollution have caused the loss of numerous aspects of Mohawk culture. The inability of tribe members to maintain their cultural integrity is a major source of discord in the community, since tribal philosophy and cultural traditions teach the Mohawk that the natural world should be preserved for seven future generations. The social hazards of PCB contamination, beyond just the physical contamination, in this aboriginal community have clearly been identified as a result of this research project. The inability of environmental toxins to degrade over time has had far-reaching consequences for the Akwesasne community and their biopersistence also leaves a social legacy. A novel aspect of this study has been the binational analysis of the community that spans the United States and Canada. Pollution is not confined by geopolitical borders and, therefore, it has the potential of affecting an entire eco-region of communities, both native and non-native.

Many of the characteristics of Mohawk culture are a direct reflection of how their society was originally organized, how decisions were traditionally made, and how they have interacted with the environment in the past. These are some of the factors that have motivated tribe members to participate in community activism to protect the environment, a reflection of their commitment to the natural world based on what they describe as environmental responsibility. One individual that participated in the study stated that Mohawks generally reject the phrase

environmental stewardship, mainly because it represents a disconnect with nature, implying that humans must take care of the environment instead of experiencing the interconnectedness of living in the natural world. Such an integrative worldview is often out of sync with contemporary environmental impact assessment efforts as reflected in the research conducted for this dissertation.

Taking care of Mother Earth is a major cultural belief among the Mohawk people, demonstrating that the St. Regis Mohawk tribe has a unique connection with the environment. This study demonstrates through multiple methods that the St. Regis Mohawk people have a strong relationship with the natural world. The fieldwork highlights the strength of that connection, and the devastating consequences they have had to face as a result of environmental contamination. The overall concept or philosophy of the tribe is based on the following idea: if you take something from the environment, you must find a way to put something back. Even Mohawks that hunt for deer and bear state that they give thanks to those animals that they have killed, because they will be nourished by them. From the interview transcripts, it became evident that Mohawk culture, ecological knowledge and their traditional way of life is rooted in deeply held cultural beliefs about the need to protect even the smallest insect. They believe that, if the tiniest insect is protected, the rest of the natural world will be preserved. Life can only be taken to give life – an ethical imperative that is found in many traditional societies and challenged by modern industrialized societies.

The decline of the fishing sector was a significant loss for the Akwesasne community, both from a cultural and an economic perspective. Since the main economy was originally based on fishing, the degradation of aquatic life in the St. Lawrence River, and the resulting lack of food security had a devastating impact on traditions, ceremonies, and those cultural activities that

have, traditionally, been passed down from one generation to the next. Research participants often discussed childhood memories of gatherings that included large fish dinners with numerous family members in attendance. For the Mohawk people, this was a time of great joy, when the elders passed down oral history in the form of the Mohawk Thanksgiving Prayer.

During an interview with one of the men that participated in the research project, I noticed that he had begun to weep after I asked him a question about the cultural activities he had enjoyed as a child, specifically regarding fishing trips he had taken with his father. In that moment, I was able to fully comprehend how profound the loss was; how much of the cultural aspects of Mohawk life he had missed out on due to environmental contamination of the natural resources in the area. At the time, I thought he was reacting in that manner because I had touched upon a sensitive subject; however, he assured me that his response had nothing to do with the question I had asked, but rather, the sorrow he felt knowing that he would never be able to experience this cultural activity again in his lifetime.

The native diet was also directly impacted by PCB contamination; individuals reported they could no longer eat ‘fresh’ and consumption of natural foods had been a part of their traditional way of life. Information contained in interview transcripts revealed that tribe members had to travel to other locations in order to pick medicinal plants. The hunting of deer and bear, along with the trapping of small animals such as muskrat, was also affected, since they were forced to leave Akwesasne to hunt and trap in other locations.

Since cultural heritage and tradition is such a vital part of native identity, losing traditional ecological knowledge, the ability to hunt and fish on ancestral lands, and the negative impacts on growing and eating fresh foods, have had a devastating effect on the Mohawk’s cultural heritage and traditional way of life. This research provides data that links exposure to

PCBs with a significant loss of the tribe's cultural integrity. In the spirit of research-based advocacy, the data presented herein can be a catalyst for change in the way industrial development is planned and managed near indigenous lands on the basis of environmental rights as being linked to human rights discourse.

The Akwesasne Task Force on the Environment (ATFE), the main grassroots organization on the Mohawk Nation territory, was instrumental in advocating on behalf of the tribe, by responding to complaints regarding the negative effects of pollution on human health. This was a motivating factor in their organizing and advocacy efforts. For this reason, it will be important for health officials, in the U.S. and in Canada, to elevate the discussion on toxic hazardous waste exposure among native tribes, by raising awareness about this issue and prioritizing it as a serious public health matter. Identifying potential funding sources is one method of addressing some of the devastating health consequences associated with exposure to environmental toxins.

It will also be necessary for both governments to be more responsive to the community need for access to vital information about issues related to food safety and security. This can be accomplished by designating funding for community-based tribal health clinics so they can disseminate important scientific data and updates on fish advisories, in addition to ensuring that local environmental organizations have the testing equipment needed to assess pollution levels. This will reduce distress over whether or not local foods are contaminated, by providing updates on potential risks from other local polluting industries, in addition to the status of the GM clean-up.

Much of the scholarly academic literature on issues related to environmental justice has been conducted in African American communities, particularly during the Environmental Justice

Movement (EJM) in the United States. This research demonstrates that, at the local level, the ATFE engaged in activities similar to the civic participation and community activism that occurred in other low income neighborhoods and in communities of color during the same timeframe. A protest that occurred in a southern African American neighborhood in the early 1980s is widely recognized as the main catalyst for the EJM. During the same era, the ATFE was also protesting and lobbying governmental and corporate officials, within a transnational context.

For this reason, the ATFE should be included in the scholarly literature in this field. EJM theoretical constructs should be more inclusive of Native Americans and First Nations peoples, by recognizing their achievements and contributions to this important social movement. EJM framing theories used by scholars to analyze direct actions and protests in African American communities should also be applied to gain an in-depth understanding of Native American and First Nations' environmental activism.

The advocacy and activism that led to the establishment of the EPA's Superfund program in the United States should be duplicated in Canada, so that they have a comparable and more effective method of addressing chemical pollution within First Nations communities. This would likely require civic participation, advocacy, activism, media attention, and lobbying, since the study revealed that the Canadian government was closely aligned with industry and less likely to regulate in a way that might offend businesses or multinational corporations.

This combination of strategies might convince Canadian officials to support a program similar to Superfund. Interview participants stated that the Canadian government is reluctant to make the changes necessary for effective remediation of toxic hazardous waste. It is imperative

to demonstrate to Environment Canada that the effectiveness of the EPA's Superfund has been a far superior program.

Most of the interview respondents identified the ATFE as being the most effective organization to facilitate change; mainly because its structure was closely aligned with traditional leadership and governance styles. In contrast, non-traditional organizations, such as the St. Regis Mohawk Tribe Environmental Division (SRMT) and the Mohawk Council of Akwesasne (MCA) were required to adopt a bureaucratic governance structure in order to gain access to funding. Most organizations based on bureaucracies utilize a top down approach when crafting public policy. The bottom up approach used for this research project, demonstrates that it is equally important to promote civic engagement by providing those individuals that have been most affected with an authentic voice in the policy making process. This will also require a multi-layered approach in order to address challenging environmental problems in the future.

Further studies should also investigate the potential for "chemical diplomacy" across borders, and environmental justice for indigenous tribes who have been impacted by pollution from industrial sites. The sharing of these findings with other indigenous groups will likely suggest that the Mohawk predicament is emblematic of a much broader phenomenon of indigenous environmental linkages that deserve policy intervention through effective research.

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Appendix A: Map: Mohawk Nation of Akwesasne

