“Being Out on the Lake”:
Iskatewizaagegan Anishinaabeg Perspectives on Contemporary Fishing Practice and Well-Being

By

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ABSTRACT

Shoal Lake, Ontario has a complex history of resource developments and policy and legislation that has impacted Iskatewizaagegan No. 39 Independent First Nation (IIFN) socially, economically and culturally and continues to influence the community's contemporary fishing practices. The purpose of this research is to explore the linkages between contemporary fishing practices and IIFN members' well-being. The study employs a mixed-method approach by utilizing a combination of household survey, semi-structured and open-ended interviews with expert IIFN fishers as well as participation in contemporary fishing practices. It presents both material and non-material benefits of contemporary IIFN fishing practices. Results indicate that IIFN members actively partake in fishing activities and continue to rely on fish as an essential part of their diet. Fishing practices also provide avenues for IIFN to convey cultural knowledge, strengthen social cohesion and help articulate a sense of Iskatewizaagegan identity. As such, they are integral to the community's physical and psychological health as well as Iskatewizaagegan culture and spirituality.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The Anishinaabeg people of Shoal Lake have relied on the forest, water and its resources to sustain a complex seasonal subsistence-based economy that has supported them since time immemorial. The Shoal Lake watershed offers a variety of ecosystem services that have been integral to their survival and well-being. Livelihood practices, such as fishing, have produced material benefits to the community by providing food and sustenance, and have contributed to their local economy through trade. These practices have also supplied many important non-material benefits to these people. For example, they have been important vehicles for knowledge generation and learning for the Anishinaabeg and are also important conduits for defining and strengthening social institutions (Armitage et al. 2009; Davidson-Hunt and O'Flaherty 2007).

Presently, Iskatewizaagegan No. 39 Independent First Nation (IIFN) has limited participation in the governance of Shoal Lake and the management of its fisheries. The Ontario Ministry of Natural Resources (MNR) has the mandate to manage the Shoal Lake fisheries and currently does not incorporate IIFN's existing knowledge about fish and fish populations into their management approach. IIFN has practiced a variety of fishing methods - including both angling and netting techniques - for hundreds of years, and continue to today (Bosnich 1995). This suggests that there are community members that have expert knowledge of the Shoal Lake fisheries. It also suggests that the practice of fishing is an important contributor to their well-being. IIFN's contemporary knowledge of fishing and fish populations on Shoal Lake has not been recently documented and could potentially contribute to sustainable management of the Shoal Lake fisheries. In addition, the community fishing practices provide an analytical lens for articulating community-based natural resource management priorities and aspirations (Jones and Murphy 2010).

In many Anishinaabeg First Nations, there is a decline in the amount of "bush knowledge" that is being transmitted from one generation to the next through practices such as fishing (Davidson-Hunt and O'Flaherty 2007). This has recently motivated the IIFN community to record its existing knowledge of the fisheries for a variety of reasons, including cultural preservation, community sustainability and to fulfill governance objectives (Berkes 1998). Specifically, IIFN has expressed interest in exploring the existing knowledge relating to fish and fish populations to inform community-based land management approaches and to articulate management objectives of the Shoal Lake fisheries. The literature on community-based natural resource and environmental management highlights the fact that not enough attention has been paid to the restoration of indigenous land management institutions and organizations, and suggests that for this to occur, there is a need to deepen our understanding of social networks that exist within communities of practice (Armitage 2009; Berkes 2009; Davidson-Hunt 2003). Social practices, such as fishing, provide a useful analytical lens to explore how communities embed knowledge, organize production activities and interpret and derive meaning from the world (Jones and Murphy 2010). As such, they provide a framework to analyze both the material and symbolic ways that ecosystems contribute to human well-being.

"Well-being" in this context depends on the material resources, social relationships, psychological state and subjective perceptions of people and is therefore contingent on the cultural context, agency and the social identities in question (White and Ellison 2007). To understand the present context of how Shoal Lake fisheries contribute to IIFN's well-being requires an understanding of the subjective, material and relational benefits that result from IIFN fishing practices (White 2010). As IIFN fishing practices are affected by fishery management decisions, various questions relating to the management of the Shoal Lake fisheries and the governance over the watershed arise within this context. For instance, who and how many community members in IIFN are actively fishing? How have current and historical developments on Shoal Lake

affected contemporary fishing practices and knowledge of these resources? How is knowledge of fish and fish populations codified, communicated and transmitted across generations (Berkes 2009)? How do political and legislative factors enter into this discussion? Can existing indigenous knowledge about fish and fish populations on Shoal Lake contribute to more sustainable management of these resources? This thesis will address these questions by presenting the linkages between IIFN contemporary fishing practice and the community's well-being.

1. 2 Research Purpose and Objectives

This research project is aimed at exploring some of IIFN's existing knowledge relating to fishing and fish populations on Shoal Lake. The purpose of this research is to investigate how historic and contemporary developments on Shoal Lake have impacted fish populations and IIFN fishing practices, as observed by community fishers. This will include understanding how these developments have affected the frequency, intensity and form of IIFN fishing practices. It is also aimed at considering how these developments have impacted the well-being of the community.

Drawing on anthropological and collaborative research strategies, this research is aimed at exploring some of the linkages between fishing practices and IIFN members' well-being. Within the context of historical and contemporary developments on Shoal Lake, this research question relates to the larger international discussion of how ecosystem changes affect human well-being (MEA 2005). The Millennium Ecosystem Assessment (MEA) recognizes that people and communities obtain many non-material benefits from ecosystems, which among other things, improve mental health, enhance a sense of culture or place and contribute to their overall well-being. As a result, changes in ecosystems that have occurred from factors such as environmental disturbances, encroaching developments and policy and legislation, may have affected IIFN's well-being.

To approach this research question, I will work collaboratively with community fishers and knowledge holders to explore the following objectives:

1) Understand the history and political/legislative context of the Shoal Lake fisheries.
2) Investigate IIFN perspectives on how resource developments affect Shoal Lake fish and fish populations.
3) Document contemporary IIFN fishing practice.
4) Understand IIFN's perceptions of how economic, political and policy structures and processes influence contemporary IIFN fishing practice.

1.3 Background

1.3.1 Iskatewizaagegan No. 39 Independent First Nation

Iskatewizaagegan No. 39 Independent First Nation (IIFN) is located near the border of Ontario and Manitoba and is situated on the shore of Shoal Lake (pronounced *ska-tay-yee-za-eh-gun* in Ojibwe, which roughly translates into shallow water) (Bosnich 1995). IIFN is one of two Anishinaabeg communities located on this lake. It has a combined population of 830 people, 530 of which live on-reserve (Davidson-Hunt and Berkes 2010). The Anishinaabeg people of Shoal Lake have relied on the forest, water and its resources to support their community for several centuries. The Shoal Lake fishery and watershed has been integral to both their survival and well-being. Historical records suggest that the Anishinaabeg people of Shoal Lake were important participants in the European fur trade from the seventeenth to nineteenth centuries (Davidson-Hunt and Berkes 2010). Throughout this period, they practiced a seasonal round subsistence strategy that included, among other things, hunting waterfowl in the spring, harvesting wild rice in the fall, and hunting large game such as moose throughout the fall and winter (Davidson-Hunt 2003). Fish were also an essential contributing food source to their survival. It was relied on for subsistence and to trade to Europeans (Davidson-Hunt 2003). The practice of fishing was also

important for maintaining good social relations, strengthening social institutions and defining Anishinaabeg worldview.

The Anishinaabeg worldview characterizes natural resource and environmental management as a relationship or "stewardship" and not as control over resources (Davidson-Hunt 2003). This stems from an epistemology that is characterized by non-dualistic, holistic understandings of the environment, which privileges relational ways of "knowing-and-being-in-the-environment" (Bird-David and Naveh 2008). This form of being in the world has been described by some anthropologists as "relational epistemology", which suggests that there are relationships that guide "knowing-and-being-in-the-environment" and that they are based on immediacy and change depending on the individual and the context (Bird-David and Naveh 2008).

For the Anishinaabeg of IIFN, authority regarding resource knowledge is related to both geography and specialized knowledge (Davidson-Hunt 2003). Specifically, authority for specific lands comes from the Creator through an individual's direct experience and intimacy with a geographically defined place (Davidson-Hunt 2003). In addition, broader custodial responsibilities are based on the intimate knowledge of an individual in relation to a specialized set of resources, for example, fish (Davidson-Hunt 2003). Therefore, the amount and type of knowledge that a person holds is directly related to a specific relationship with the Creator and an intimate engagement and connection with particular resources in a defined geographic place. It is through this process that individuals carry expert knowledge. In this sense, Anishinaabeg worldview produces very particularized knowledge, which is distributed unevenly among individuals in the community (Davidson-Hunt 2003). Understanding the Anishinaabeg worldview is not only essential for understanding the non-material ways that fishing practices contribute to IIFN community members' well-being. It is also important for understanding how they feel the Shoal Lake fishery should be managed, which among other things, brings up questions relating to who has the authority to make management decisions about the resource in question.

1.3.2 Shoal Lake Fisheries

The Anishinaabeg of IIFN has relied on the fisheries at Shoal Lake for subsistence and to support local economies since time immemorial. For many centuries, the Anishinaabeg managed these resources without any imposed regulation or management regimes. In the 1920's, a commercial fishery was introduced on Shoal Lake, which included commercial harvest of walleye (*Sander vitreus*), northern pike (*Esox lucius*) and lake whitefish (*Coregonus clupeaformis*) (Borecky 1980). In 1923, Ontario MNR began managing the walleye fishery at Shoal Lake through the Natural Resource Transfer Act (MNR 1977). Until the 1960s, most of the commercial fishing licenses were owned by non-aboriginals, excluding two commercial licenses that were purchased by IIFN and Shoal Lake First Nation #40 in 1962. During this period however, IIFN continued to harvest in areas where no licenses were owned and continued to practice subsistence fishing throughout the lake.

Walleye and lake whitefish have been the two most important species for subsistence and commercial fisheries on Shoal Lake (Rodgers 1972 *in Bosnich 1995*). Historically, IIFN has relied heavily on these resources to support its local economies. In 1983, Ontario MNR closed the commercial walleye fishery and quotas for whitefish were diminished, which resulted in significant social and economic impacts to IIFN. Presently, there is very limited commercial fishing activity among members of IIFN, however, many community members continue to net fish for subsistence and practice angling for sport and leisure. As a result, there are likely various IIFN community members that hold expert knowledge about fishing and fish populations that could inform sustainable management of the Shoal Lake fishery.

Presently, a Shoal Lake Watershed Management Working Group exists that attempts to include all of the identified stakeholders in the monitoring and decision-making for the Shoal Lake watershed. This group is made up of agencies from the Government of Canada, Government of Ontario, Government of Manitoba, the Winnipeg Municipal Government and Shoal Lake First Nation #40.

In April 2002, the working group developed a Shoal Lake Watershed Management Plan, which among other things, recommends strategies and actions to: “maintain the ecological integrity and environmental quality of Shoal Lake; to sustain watershed communities and resources; and, to guide future development” (Shoal Lake Watershed Management Working Group 2002). IIFN has not signed on to this management plan and currently does not participate in working group meetings.

Today, several issues complicate the management of commercial, sport and subsistence walleye fisheries on Shoal Lake. Firstly, the initial closure of the fishery was attributed to aboriginal over-fishing, which has resulted in poor relations between IIFN and MNR personnel (Bosnich 1995). Secondly, aboriginal treaty rights make the rights for the commercial sale of fish by aboriginals to be highly contentious (Bosnich 1995). Thirdly, encroaching developments such as mining, cottage developments and a drinking water intake, further complicate the management of Shoal Lake fisheries. Finally, the watershed is currently being governed under the Shoal Lake Watershed Management Plan, which has not been signed on to by IIFN. As a result, IIFN feels that its contemporary knowledge surrounding fish and fish populations on Shoal Lake is not being considered in the governance of the Shoal Lake watershed or the management of its fisheries.

1.4 Approach

This research was broadly grounded in a pragmatic philosophical approach and employed a mixed-methods strategy of inquiry. This strategy was selected to allow for multiple data collection methods to be employed to solve my research problem. Essential to this study was that the research be collaborative in nature, involving a co-production of locally relevant knowledge (Davidson-Hunt and O'Flaherty 2007). Following a co-production of knowledge approach, it was necessary to allow the community to decide what information about fishing and well-being is relevant to them, and explore those areas with community research participants. The research approach was therefore inductive in nature and

maintained flexibility and adaptability during my fieldwork. In order to understand the ways that fish and fishing practices contribute to the community's well-being, I had to attempt to gain an understanding of Anishinaabeg worldview, which will required prolonged period of intensive interaction with the community. It is only possible to gain such intimate knowledge by studying a small number of subjects through extensive and prolonged engagement (Creswell 2009).

To obtain the necessary data to fulfill my research objectives, I partook in fieldwork during the months of August to November 2011. During this time I explored how fish and contemporary fishing practices contribute to IIFN members' well-being through direct observation and involvement in fishing activities. Specifically, I employed the qualitative methods of participant observation and field notes, as well as semi-structured and unstructured interviews, to understand social and cultural aspects of contemporary IIFN fishing practices and explore any linkages it has to the community's well-being. As an outsider to the community, I knew that my personal worldview would shape my interpretations and understandings of their experience and knowledge surrounding fishing practices and well-being (Creswell 2009). As a result, I purposefully maintained adaptable, open-ended research objectives that allowed for collaboration with the community research participants.

Gathering generalizable data about common characteristics of contemporary IIFN resource harvesting practices was a priority for the community and provided relevant data for the research problem. As a result, a quantitative household survey was co-designed and administered by the community. In order to gain an understanding of the political legislative context of Shoal Lake and the Shoal Lake fisheries, I drew on the method of primary documentation research, which was essential for understanding necessary contextual information about the policy and legislation that have affected IIFN fishing practices. Specifics regarding the methodologies are elaborated in the methods section.

1.5 Contribution of Research

This research draws on a diverse set of literature in the areas of ethnoecology, social practice and well-being to explore how fishing practices contribute to IIFN member's well-being. These areas of literature inform the conceptual framing for this research, while specific ethnoecology studies undertaken with IIFN provide the cultural framework (Davidson-Hunt 2003; 2010; Davidson-Hunt and Berkes 2003; Davidson-Hunt and O'Flaherty 2007). Within the Canadian context, there has been a significant amount of research on small-scale aboriginal fisheries. Beginning in the 1980s, alternative approaches to small-scale fisheries management began to emerge, which among other things, highlighted the necessity of collaborative approaches to bring resource user participation into the management process and decision-making (Berkes *et al*. 2001). This work offered new methodological approaches to "access fishers' knowledge to enrich the information available for management" (Berkes 2003:8), which contributed new models of fisheries management and governance.

A separate stream of small-scale aboriginal fisheries research focusses primarily on the social and economic importance of small-scale fisheries. Existing studies have explored Anishinaabeg fresh-water fisheries management through a socio-economic perspective (Usher 1987; Hough, Stansbury & Michalski Limited 1982; Vanderpool 1987), however, few studies have undertaken a study that explores the non-material benefits of Anishinaabeg fishing practice and how it contributes to community members' well-being within political / legislative contexts (Koenig 2005). Virtually all Anishinaabeg fisheries research has focussed on documenting its material socio-economic benefits (eg. Hopper & Power 1991; Vanderpool 1987; Usher 1976; 1987), rather than investigating the subjective social and cultural dimensions of these resource-based practices.

This research will offer a cultural-specific case of how small-scale aboriginal fisheries contribute to community well-being by exploring the social and cultural dimensions of fishing practices, specifically within the context of IIFN fresh-

water fisheries. This research will therefore contribute to knowledge in two specific areas:

1. Small-scale fresh-water Anishinaabeg fisheries management
2. Understandings of Anishinaabeg social practices and worldview

By focussing on these dimensions, this research will provide essential ethnographic information about IIFN, and will contribute to knowledge in the areas of social practice, well-being and community-based natural resource management. As a result, this research will provide an important contribution to disciplines in anthropology, ethnoecology, natural resource management, and developmental studies.

CHAPTER 2: LITERATURE REVIEW

There are various theories informing research that explores how aboriginal fishing practices contribute to IIFN community members' well-being. For my research, I primarily approach this question through the lens of ethnoecology but will also draw on literature from the areas of well-being and social practice. There is a rich literature in these areas that comes out of the disciplines of human geography, anthropology, sociology, science studies and developmental studies, which will inform the conceptual framing for this research.

In this section, I review literature on ethnoecology, social practice and well-being to develop my conceptual framework for this research. I begin with a brief review of the historical background of ethnoecology, highlighting its roots in ethnobiology, ethnoscience and human ecology and discussing the emergence of traditional ecological knowledge (TEK) research. I then provide a brief review of Canadian aboriginal fisheries research in the late twentieth century, focussing primarily on studies that explore socio-economic contributions of this resource. I briefly discuss some of the current thinking in social practice theory and well-being. Finally, I describe some characteristics of contemporary approaches to ethnoecology that inform my approach to this study.

2.1 Ethnoecology

The study of ethnoecology draws on various disciplines to understand how people classify, perceive and interact with their environments and the beings that share their landscape (Main Johnson and Hunn 2010). This discipline has theoretical roots in botany, ecology, pharmacology, anthropology, psychology and linguistics, all of which have shaped its methodology and research practice. Ethnoecology has a relatively brief history and the word itself was not coined until the 1950s. To understand the origins of this discipline it is necessary to trace it back to a time when the term had not yet emerged; when it instead was more commonly known as "ethnobiology".

The origins of ethnobiology research have been largely connected to colonial projects of European conquests of the Americas. Hunn (2007) argues that its origins date back to the sixteenth century with the works of Francisco Hernandez, who was commissioned by the King of Spain to document medical knowledge of local people living in the area that is now called Mexico. In its infancy, the motivation for conducting ethnobiology research was to document indigenous plant and animal knowledge for utilitarian purposes that would profit Western agendas (Hunn 2007; Clement 1998; Toledo 2002).

In the 1950s, an important shift in the approach to this form of research came from the work of Harold C. Conklin (1954). He introduced a more abstract intellectual approach that began to value ethnobiological knowledge for its own sake (Levi-Strauss 1966 *in Hunn 2007*). Conklin's work was particularly influential because it shifted the focus of the research from an etic perspective (from the perspective of the outsider) to the emic perspective (the perspective of the insider) (Hunn 2007; Clement 1998). Conklin took a "cognitive" approach to ethnobiology and was the first to emphasize the importance of understanding the "indigenous" perspective (Hunn 2007:4). He argued that in order to comprehend how different cultures perceive and interact with their environments and landscapes, the researcher must attempt to understand knowledge from the perspective of the subject, rather than through their preconceived notions of the environment. This approach also brought about an important step in understanding the importance of worldviews in this form of research and set the grounds for Conklin to develop the concept of ethnoecology.

Over the last two decades, this discipline began to take a more holistic approach to understanding peoples' perceptions and relationships to their environment, which generally characterizes contemporary approaches to ethnoecology. The term ethnoecology has been promoted by the Mexican anthropologist Victor Toledo, who has championed an approach to that goes beyond inventories of plants and animal names, and attempts to try and understand peoples' knowledge of ecological process and relationships among the different parts of

the ecosystem (Hunn 2007; Toldeo 1992; Toledo 2002). Focussing on local peoples' knowledge of ecological processes and their perceptions and relationships to their environment, provide a theoretical framework for my understanding of IIFN contemporary fishing practices.

2.2 Traditional Ecological Knowledge:

As the ecological approach to understanding peoples' perceptions and relationships to the environment developed, the concept of traditional ecological knowledge began to emerge in the literature (Hunn 2007). Since the 1980s, there has been a growing interest in literature relating to 'traditional ecological knowledge' (TEK). This concept has been drawn upon by researchers to better understand the complexity of indigenous ecological knowledge and its linkages to cultures' worldviews and ontologies. In this context, TEK has become a proxy for developing new models of sustainable natural resource and environmental management; as a result, it has developed into its own area of research (Hunn 2007; Berkes 2008).

The study of TEK by western academics emerged from research in the sub-disciplines of ethnoecology, ethnobiology and ethnotaxonomy, which find their intellectual roots in ethnoscience and human ecology (Berkes 2008). Ethnoscience was first practiced by biologists that were interested in systems of folk terminologies and species identification and classification (Berkes 2008). A major advancement in this area came from Berlin et. al (1973) who developed universal principals of how humans categorize plants and animal species. Specifically, Berlin et. al (1973) provided convincing evidence that "fundamental taxa recognized in folk systematics correspond fairly closely to scientifically-known species" (Berkes 2008:52). This, among other things, suggests that differences in folk and scientific taxonomic systems do not point to an inability to distinguish species, but that attention is focussed on the species that are important to livelihoods (Berkes 2008: 55).

Human ecology studies the functional relationships between people and their environment (Marten 2001). Berkes (2008) suggests that cultural ecology, a subfield of human ecology that was popularized by the anthropologist Julian Steward, offered a particularly useful contribution to the study of TEK. Cultural ecology suggests that the modes of production of societies around the world are adaptations to their environment (Berkes 2008). It argues against environmental determinism, suggesting that cultural characteristics are not determined by nature (Berkes 2008). This argument makes an important contribution to the application of TEK to resource management. It suggests that even though TEK is generated locally, comparative analysis has shown the existence of similar ecological adaptations in comparable areas (Berkes 2008). This demonstrates that TEK is more than locally significant, suggesting that it can inform resource management everywhere. Berkes (2008) suggests that advancements in both human ecology and ethnoscience have helped inform a holistic understanding of TEK, however, he emphasizes that one of the major aspects of study in traditional ecological knowledge relates to cosmologies and worldviews, which was not originally investigated by these disciplines.

Other approaches to the study of indigenous knowledge systems, which have been developed by indigenous academics, offer insightful contributions to my research. Cajete (1999, 2000) is one indigenous academic that offers a new concept to explain the linkages between people and their environment, which he terms 'native science'. There are many similarities between TEK and Cajete's concept of 'native science'. However, Cajete's approach employs a slightly different vocabulary and places emphasis on different aspects of social-ecological systems.

Cajete argues that native understandings of key ecological relationships and processes is 'native science', and suggests that native spirituality reflects a scientific understanding of nature. The concept of 'native science' moves beyond an objective view of "humans-in-nature" to include more subjective and nuanced

understandings of the human mind and creativity as central to an understanding of the dynamic elements of nature (Cajete 2000). He introduces the idea of the "creative mind" or "metaphoric mind" to explain how peoples' understandings of the workings of natural laws are gained through experience and participation with the natural world (Cajete 2000). This thinking has contributed to my understanding of the importance of worldview and ontology in peoples' perception and interaction with their environment.

In summary, ethnoecology, TEK, and native science all contribute to my intellectual approach to understanding peoples' perception of their environment and how it is interconnected with their worldview and ontology. In order to apply this body of literature to IIFN fishing practices, it is necessary to review some of the literature on aboriginal and Anishinaabeg fisheries research.

2.3 Aboriginal Fisheries Research

Throughout the 1970s and 80s there was a growing interest in quantifying the harvest of aboriginal fisheries to portray the importance of fish to a community (Berkes 1990; Hopper and Power 1991). This was occurring within the context of increased development and related stresses on aquatic ecosystems with the attempt to conserve fish populations (Hopper and Power 1991). At that time, much of the aboriginal fisheries research employed a conceptual framework that focussed on three variables: yield, investment and energy use (*Thomspon 1979; 1980 in* Berkes 1989). This approach was used to inform fisheries management and policy and characterized much of the "grey literature" in this area of research (Berkes 1990).

Under this conceptual framework, research that has explored how aboriginal fisheries contribute to well-being has generally used the approach of measuring material socio-economic benefits of fisheries (Usher 1987; Usher 1976; Vanderpool 1987). A second stream of aboriginal fisheries research focuses more on fisheries management, policy and governance (eg. Berkes et. al 2001; Wiber et al. 2004; Smith 1993). As it has become increasingly recognized that sustainable

fisheries management requires contributions from ecologists, economists and social scientists, understanding how the social and cultural dimensions of aboriginal fisheries contribute to community well-being has become increasingly important (Pinkerton and John 2008).

Vanderpool (1987) provides one of the first examples of research that looks specifically at social dimensions of Canadian aboriginal fisheries, and does so by focussing on the relationships, social structures, institutions, and worldviews of the social actors involved in fishing practices. Specifically, he is interested in understanding the "values and beliefs that determine how social actors define their relationships to the social world around them" (Vanderpool 1987:479). This contributes to an understanding of how local social institutions and epistemologies must be considered in the management of small-scale aboriginal fisheries.

Wiber et al. (2004) provide a useful methodological framework for approaching research with aboriginal fisherman and highlight a variety of social value questions that must be considered in this research. These include knowledge of: the practical livelihood (eg. where and when to fish and with what intensity of effort); social economic and political issues and related institutional structures; and values and ethics that guide policy and implementation of regulations (Wiber et al. 2004). This work highlights the many facets that must be considered in Canadian aboriginal fisheries research. However, this work focusses on coastal commercial fisheries and does not directly contribute to understandings of small-scale fresh water fishing practices. Indeed there has been a growing body of literature that has documented indigenous management systems based on TEK within small-scale aboriginal fisheries, yet they tend to focus primarily on management agendas rather than on community well-being (Neis et al. 1999).

Koenig (2005) highlights the myriad of issues that must be considered in contemporary small-scale Canadian aboriginal fresh-water fisheries research. In

this work he further develops our understanding of how culture, values, and social relations factor into aboriginal fisheries practice. He also highlights the importance of considering historical and contemporary socio-political factors in contemporary fisheries conflicts. In his work, the importance of economic and ceremonial aspects of fishing activities are emphasized, which highlight how fishing is integral to group and intergroup relations. This work greatly informed my approach to this study as it provides an insightful framework for understanding aboriginal fisheries management issues, by placing contemporary obstacles and conflicts within cultural, political, and historic contexts. This comprehensive approach highlights the variety of factors that must be considered community-based fisheries management and also demonstrates social, cultural and symbolic aspects of fishing practices and how they contribute to community well-being.

2.4 Ecosystems and Human Well-Being

The concept of human well-being has become a central topic in policy debates about environmental sustainability (Coulthard et al. 2011). Between 2001 and 2005, the Millennium Ecosystem Assessment (MEA) produced a number of peer-reviewed and internationally recognized documents that, among other things, highlighted how ecosystems contribute to human well-being. They described these contributions as "ecosystem services" that provide: material benefits (eg. food, fresh water, etc.), regulating services (eg. climate regulation, disease regulation, water purification), and cultural benefits (eg. spiritual, cultural heritage, recreational, aesthetic) (MEA 2005). The MEA recognizes that people and communities obtain many non-material benefits from ecosystems, which include: improving mental health, enhancing a sense of culture or place and contributing to their overall well-being (MEA 2005).

Well-being, explored through the disciplines of anthropology, sociology and development studies introduces a more nuanced approach to understanding this concept. Development studies, for example, identifies the existing practice of

assigning quantifiable measures to preconceived categories of human well-being as problematic. Instead, the discipline prefers a more dynamic approach to characterizing well-being. (Ellison and White 2007). In particular, it highlights that the term must be used more dynamically in order to explore for social, cultural and psychological dimensions of this phenomenon. Drawing off this body of literature, I use the term "well-being" to refer to the material resources, social relationships, psychological state and subjective perceptions of people, which are contingent on cultural context, agency and the social identities in question (White and Ellison 2007).

While well-being has been defined in a variety of different ways, this study is shaped by White's (2010) conceptual definition of: "doing well – feeling good / doing good – feeling well" - which reflects the subjective, material and relational dimensions of health, happiness and welfare, as seen from the individual perspective rather than from a societal perspective (White 2010). It is important to stress that when I use this term, I wish to emphasize the fact that it is always contingent on the particular cultural and historical context (Adelson 2000; White 2010). This approach to understanding well-being therefore takes a more interpretive approach, which also generally characterizes some of the contemporary approaches to understanding social practice.

2.5 Social Practice

During the 1970s there was an important change that occurred in 'practice theories', which was characterized by a shift from a classical social theory approach to a more interpretive or cultural approach (Reckwitz 2002). At that time, theories of social practice were emerging from a multitude of disciplines, including sociology, cultural studies, anthropology, science studies and philosophy (Reckwitz 2002). Before this, practices were understood to serve important instrumental purposes for communities and individuals, such as production, consumption and learning; however, this shift in thinking revealed that they also offer a conceptual lens to explore the complexities, identities and meanings inherent in all forms of economic organization (Jones and Murphy

2010). Among other things, it began to explore how actors and communities embed knowledge, organize production activities and interpret and derive meaning from the world (Jones and Murphy 2010).

For my research, I employ the concept of practice using a governance and structural approach, which has emerged predominantly from the disciplines of anthropology and sociology. In 1977, Bourdieu introduced the concept of *habitus*, which he defines as a "system of durable, transposable dispositions" (p.72). These 'dispositions' produce "practices which tend to reproduce regularities" that structure societies (Bourdieu 1977:78). An individual's *habitus* is formed and reformed through interaction in the material and social worlds and provides a way for individuals to understand and classify the world that they live in. I draw off of the concept of habitus to illustrate how practices embody individuals' meanings and identities and help structure, organize and govern cultures and societies (Jones and Murphy 2010).

Bourdieu (1977) suggests that cultural rituals and individual habits, or practices, reflect unconscious understandings of the world, which evolve historically. More recent thinking on practice, introduced by Reckwits (2002), suggests that practices are more than social relations driven by structural power; they are instead “amalgamations of materials, performances, structural factors and cognitions that are contingent on the agency of actors and are therefore open to improvisation and accident” (Jones and Murphy 2010: 374). This approach acknowledges the individual agency of the actor within structural factors.

Latour’s (1999) actor-network theory also contributes to my understanding of practice. I draw specifically on his discussion on practice that focuses on learning and collective knowledge, which reflects on how it contributes to organizational cohesion and embodies tacit forms of knowledge (Latour 1999). This is particularly important for understanding how IIFN fishers convey information within communities of practice.

These approaches to understanding practice contribute to my theoretical understanding of the term and how I applied it in this study. This thinking also informs some of the contemporary approaches to ethnoecological research, and therefore generally contributes to my conceptual framing for this research.

2.6 Contemporary Ethnoecology Approaches

In the 1990s, Toledo developed a conceptual framework for approaching ethnoecology research that greatly informed my approach to this research. In his framework there are three inseparable dominions that must be considered in totality: nature, production and culture (Toledo 1992; 2002). He has developed a conceptual framework that he calls the "belief-knowledge-practice" complex that calls for the use of various epistemological and methodological procedures to explore ethnoecological questions (Toledo 2002). He criticizes ethnoecology research that attempts to separate culture from practice and production. This approach suggests that ethnoecology research must incorporate both intellectual and practical aspects of knowledge and that it should begin with the concrete process of production (Toldeo 2002). In this manner, Toledo's (2002) approach stresses the importance of applying a holistic approach to ethnoecology research and emphasizes that practice should guide community-based natural resource management research. Following this approach, this study presents aspects of Iskatewizaagegan ethnoecology through an exploration of contemporary IIFN fishing practices.

A second aspect of contemporary approaches to ethnoecology research that contributed to my approach for conducting fieldwork relates to recent developments in its methodology. The ethnoecology literature indicates that contemporary ethnoecology research is practiced using two broad approaches. Firstly, there are the western-trained academics that are conscious of their role as an outsider and the power relations that exist in that context, and therefore, are very sensitive to conducting ethical research. Secondly, there is an emergence of indigenous academics that conduct research with their own

communities for their benefit. Both of these approaches demonstrate the ethical and methodological advancements in the field of ethnoecology. The former characterizes the approach to this research.

Recent ethnoecology research has argued that in order for it to be ethical it should be practiced in a manner by which the work directly benefits the community of study, and that the findings should be presented in the language of the people (Hunn 2007). Contemporary approaches also highlight the importance of disseminating finished work to the community, and doing so in a manner where the knowledge can be transmitted to community members in a way that it can be understood and used by them (Hunn 2007).

Davidson-Hunt and O'Flaherty (2007) make a significant contribution to ethnoecology research by introducing new research methodologies that empower the community through meaningful collaboration throughout the data collection process. These authors recognize that local peoples' ethnoecological knowledge is dynamic and therefore, researchers must have adaptive methodologies to account for these dynamic processes (Davidson-Hunt and O'Flaherty 2007). In order to account for the dynamic knowledge systems and overcome ethical issues surrounding the role of the researcher and how they can influence the research process, Davidson-Hunt and O'Flaherty (2007) emphasize the importance of departing from the traditional approach to ethnoecology research, which objectifies knowledge and attempts to "document" and "describe" it. Instead, they have developed the concept of 'place-based learning communities", which describes a collaborative research environment where the researcher recognizes his / her role in the process of knowledge production and therefore creates a process of learning between researchers and local people (Davidson-Hunt and O'Flaherty 2007). In my fieldwork, I drew on these methodological and ethical advancements by developing a mutually agreed upon research protocol with the community which helped guide the research process.

CHAPTER 3: METHODS

3.1 Research Approach

3.1.1 Pragmatism:

My research is grounded in a pragmatic philosophical approach and employs a mixed-methods strategy of inquiry (Creswell 2009). This strategy was selected to allow for multiple data collection methods to be employed to solve my research problem. This approach is not committed to a particular system of philosophy and reality, which allowed me to utilize pluralistic approaches to derive knowledge about contemporary IIFN fishing practices (Creswell 2009). I therefore applied both quantitative and qualitative methods to the study design in order to provide the best understanding of these phenomena. This was particularly useful for understanding contemporary IIFN fishing practice and its linkages to the community's well-being, within social, historical and political contexts. For example, understanding the social and cultural aspects of IIFN fishing practice required obtaining thick description data which lends itself to a qualitative, exploratory research approach that takes place in the community setting. Inquiry into symbolic or non-material aspects of IIFN fishing practice required open-ended participatory methods and prolonged communication with a small number of individuals. Generating generalizable data about common characteristics of contemporary IIFN fishing practices required the use of quantitative methods. Obtaining an in-depth understanding of IIFN fishing practice therefore required the following principal methods: household survey, participant observation and field notes (Bernard 2006), semi-structured interviews (Bernard 2001), and primary documentation research.

3.2 Research Strategy of Inquiry

My strategy of inquiry is characterized as a concurrent mixed-methods approach using a pragmatic strategy of inquiry to guide my methodology.

3.2.1 Mixed – Methods:

Mixed methods strategies of inquiry were first employed in 1959 by Campbell and Fisk and originated out of the discipline of psychology (Creswell 2009). Research that utilizes this strategy often employs qualitative methods of participant observation and interviews combined with traditional quantitative methods, such as surveys. Some of the advantages of a mixed-methods strategy is that it allows researchers not only to identify convergences across data, but also provides an opportunity for integration of both methods to allow results to reinforce each other (Creswell 2009). Another advantage of this strategy is that the quantitative survey procedures often help the researcher identify participants for more in-depth qualitative interviews (Creswell 2009).

3.2.2 Concurrent Triangulation Strategy:

For my research I employed a concurrent triangulation strategy where the qualitative method of participant observation occurred in tandem with a quantitative household survey. The results of these data sources were then cross-validated to determine any convergences or disparities between them (Creswell 2009). A concurrent triangulation mixed-methods strategy was particularly appropriate to apply in this context, given the fact that the majority of my data was collected during one field season. The cross-validation between qualitative and quantitative methods helps to ensure the validity and accuracy of results. In addition, information was gathered from quantitative survey aided in the development of interview schedules for semi-structured qualitative interviews.

3.2.3 Rationale for the Mixed-Methods Approach:

My rationale for using both qualitative and quantitative methods is based off the premise that all methods have limitations and that biases of a single method could neutralize the biases of another (Creswell 2009). It is also grounded in my pragmatic approach to this study. As a researcher, I require that the results of my study have a direct benefit to the community that I am working with and that

they work to answer to the questions and problems that IIFN identified. Similarly, it is necessary that my work offer tangible benefits through the form of deliverables to the Iskatewizaagegan community. Before the fieldwork for this research began, the community suggested that the use of a household survey would be an appropriate method to gain baseline data on the community's resource harvesting practices, which includes fishing. The purpose of collecting this data was to inform my research and aid the community in building capacity for community-based management of the Shoal Lake watershed. The community agreed that a household survey would generate the types of results that are particularly useful in securing funding from public and private agencies. In addition, this data can be used to inform educational programming and Band policies, and help develop the community's own Shoal Lake Watershed Management Plan.

Gathering qualitative data on the non-material and symbolic aspects of Iskatewizaagegan fishing practice required gaining an understanding of Anishinaabeg worldview and culture, which was best achieved using open-ended methods of participant observation and open-ended and semi-structured interviews. These methods also provided me with the opportunity to establish trust and rapport with community members, which was essential for the success of this study and ensuring the validity of data collected. Utilizing of both quantitative and qualitative methods was therefore necessary to address my research problem and fulfill the requirements of IIFN.

3.3 Methods

In order to obtain the data that was necessary to fulfill the objectives of my research, I employed a variety of research methods. Table 1 summarizes how this data was collected in relation to each specific objective.

Table 1. Summary of Research Methods

Objective	Method	Data Collected
1. Understand the history / legislative context of the Shoal Lake fisheries.	• Primary documentation research	l compiled and analyzed government policy documents that govern Shoal Lake fisheries management, watershed governance and resource developments. I also compiled and analyzed historical documents relating to resource developments on Shoal Lake and the Shoal Lake watershed. In addition, I reviewed correspondence between MNR and IIFN that related to the Shoal Lake fisheries, from the period of the walleye closure to present.
2. Investigate IIFN perspectives on how resource developments affect Shoal Lake fish and fish populations.	• Unstructured interviews • Semi-structured interviews	Through unstructured and semi-structured interviews, I asked community fishers to reflect on how / if they feel resource developments have affected Shoal Lake fish and fish populations. This included asking them to reflect on how the opening of Ash Rapids, the Winnipeg aqueduct project, cottage developments, mining explorations, forestry operations and sports fishing lodges have impacted fish and fish populations on Shoal Lake.
3. Document contemporary IIFN fishing practices.	• Household survey • Participant observation • Unstructured interviews • Semi-structured interviews	By conducting a household survey that was co-designed and administered with community members, I documented contemporary fishing practices, including: frequency of fishing activities, fishing techniques, gear utilized, type of fish taken, access and barriers to fishing, and consumption of fish species.

		Through participant observation I observed fishing locations, knowledge of fish movements, population structures and species life cycles. Through this method I also observed relational aspects of fishing, which included who fishes with who, what their relationships are based on and how fishing practices help strengthen these relationships. The data that I gathered regarding IIFN fishing practice was further investigated and clarified through unstructured and semi-structured interviews.
4. Understand IIFN's perceptions of how economic, political and policy structures and processes influence contemporary IIFN fishing practice.	• Unstructured interviews • Semi-structured interviews	Through unstructured and semi-structured interviews, I asked community fishers about how they feel economic, political and policy processes influence contemporary fishing practice. This included asking fishers about changes that may have occurred in the frequency, intensity or form of IIFN fishing practice due to financial costs associated with fishing; implementation of imposed fisheries legislation; contemporary fisheries management approaches; and relationships with other stakeholders.

3.3.1 Participant Observation

Participant observation is the foundation of cultural anthropology and has deep roots in the discipline of sociology (Bernard 2006). For this method, the researcher becomes the instrument for data collection and analysis (Bernard 2006). Using this method, I immersed myself into the IIFN culture by partaking in fishing activities and community events. By doing so, I gained experiential knowledge and was able to establish trust with the research participants, which

contributes to the validity of my data (Bernard 2006). The extensive and intimate engagement that was possible using this method was particularly useful for gaining a general understanding of social institutions. This was particularly important for understanding how non-material aspects of fishing practices contribute to well-being.

The data that was generated from participant observation was documented in extensive field notes. To ensure that these notes were dependable and consistent, I followed Bernard's (2006) system of field note taking, which includes jottings, a daily log and a diary. The process of observing or partaking in fishing activities often only allowed me the time to take down quick "jottings" to help me recall specific details. In addition, there were some scenarios where it seemed inappropriate to take any field notes. It was therefore necessary for me to spend several hours at the end of each day to reflect on what was observed on that particular day and record it in my daily log. The notes in this log consist primarily of what Bernard (2006) calls "methodological" and "descriptive" field notes. These include reflections on my techniques of collecting data, and documentation of what occurred each day. Towards the end of my fieldwork, I began to reflect on the data that I had been collecting and began producing some analytic field notes that described what I had learned up until that point of the fieldwork. This allowed me to take note of any themes that were beginning to emerge from the data. After conducting my fieldwork, these notes were coded in order to identify themes and patterns that existed in the data. To achieve this, I used an open source qualitative coding software package called "TamsAnalyzer", which allowed me to colour code both general themes, as well as more detailed interpretive themes.

3.3.2 Interviews

There are many different forms of interview styles that are distinguished by the amount of control that the researcher has over the interview process (Bernard 2001). For my research, I employed a combination of both unstructured and

semi-structured interviews. Employing unstructured and semi-structured open-ended interviews is consistent with an approach that targets the co-production of knowledge (Davidson-Hunt and O'Flaherty 2007). By allowing the research participants to have a considerable amount of control over the interview process, they can decide what is relevant to discuss about a particular topic. My role as an interviewer was therefore to guide the discussion around the general topics of fishing practice and IIFN conceptions of well-being.

Unstructured Interviews:

Unstructured interviews involve a clear plan of what the researcher is trying to accomplish with the interview, however, the participant has a great deal of control over his / her responses (Bernard 2001). The advantage of utilizing this method is that it allowed participants to express themselves in their own terms and in their own time (Bernard 2001). This method was particularly useful in the initial stages of my research because it allowed community experts to have a significant control over the research process, which was important for establishing rapport. By avoiding the assertion of my own ideas about what should be explored and allowing the research participants to have some degree of control over what they felt was relevant, this method of interview allowed for a more collaborative research process. Following Davidson-Hunt and O'Flaherty's (2007) philosophy of "co-production of knowledge", employing unstructured interviews in the initial phases of the research is necessary to allow the participants (eg. fishers and community members) decide what is most relevant to discuss relating to fishing practices. However, some general questions were prepared in advance of these interviews to focus the discussions on topics that related generally to knowledge surrounding fishing and fish populations on Shoal Lake.

Semi-structured Interviews:

In later phases of my research, I applied a more structured approach to my interviews. Specifically, I utilized semi-structured interviews that were open-

ended but followed a general script about topics that should be covered (Bernard 2001). I used this method with participants with whom I had already had the chance to establish some rapport. Employing a more structured form of interview at this stage was beneficial for drawing out specific information that I had observed or discussed with participants, but still required further clarification or detail. In order to achieve this, I developed an interview schedule that helped frame the discussion around specific topics that were relevant to past discussions that I have had with individuals. (see Appendix 1). The interview schedule included questions that built on knowledge that I had learned from community participants relating to contemporary fishing practice and fish populations, as well as information relating to how this practice contributes to their well-being.

3.3.3 Primary Documentation Research

A third method that I employed for my research was primary documentation research. As opposed to secondary research, which consists of examining sources of data and information collected by others (Stewart and Kamins 1993), primary documentation research is a process of making sense of uninterpreted materials and considering its intellectual and historical significance (Hill 1993). The key to employing this method is to let the research questions engage and direct the researcher in investigating documents that are relevant to the research topic (Stewart and Kamins 1993). For my research, this method was used to investigate information relating to the political and legislative context of the management of the Shoal Lake watershed, in order to fulfill my first objective. This process included reviewing government documents relating to watershed management and fisheries legislation prepared by the Ontario Ministry of Natural Resources (MNR), the City of Winnipeg and the Government of Canada and relevant correspondence between MNR and IIFN relating to Shoal Lake fisheries. Specific documents included the Shoal Lake Watershed Management Plan (2002), MNR policy documents, biological studies and fisheries review documents prepared by the Anishinabek / Ontario Fisheries Resource Centre.

This information was useful to gain an understanding of the history of fishery policies and regulations, specifically from the time of the walleye closure in 1983 to present. It was also useful for gaining an understanding of fish population estimates that have been made over the past three decades. I also conducted primary documentation research on the history of developments that occurred on Shoal Lake and within the Shoal Lake watershed. This included a review of mining and forestry reports, as well as historical documents relating to the Winnipeg Aqueduct project. Some of this research took place before I entered into the field, which equipped me with a general understanding of the current political legislative context.

3.3.4 Household Survey

Well-designed household surveys have been recognized as an essential method for assessing land-based practices and rural welfare (Angelsen et al. 2011). The decision to utilize a household survey for this research project came out of collaborative discussions with IIFN, when they expressed their desire to document IIFN members' contemporary resource harvesting practices. Specifically, the community was interested in collecting quantitative household-level data to get a representative picture of contemporary land-based practices and consumption of country foods by IIFN members. The purpose of collecting this data was to document how resources from the land and water contribute to IIFN's well-being. IIFN was also interested in creating a community database of contemporary land-based practices to support the Chief and Council in the development of educational programs and policies and to develop a First Nation's watershed management plan. Following a pragmatic worldview and contemporary approaches to ethnoecology research, early in my fieldwork, I adapted my methodology to include a household survey as the fourth method of data collection. The process for determining the purpose of the household survey is illustrated in Figure 1. It highlights the intentions of the various actors involved and who contributed to funding the project. It also illustrates that

collaborative discussions between trusted parties were essential for designing a process that ensured high community ownership of the project.

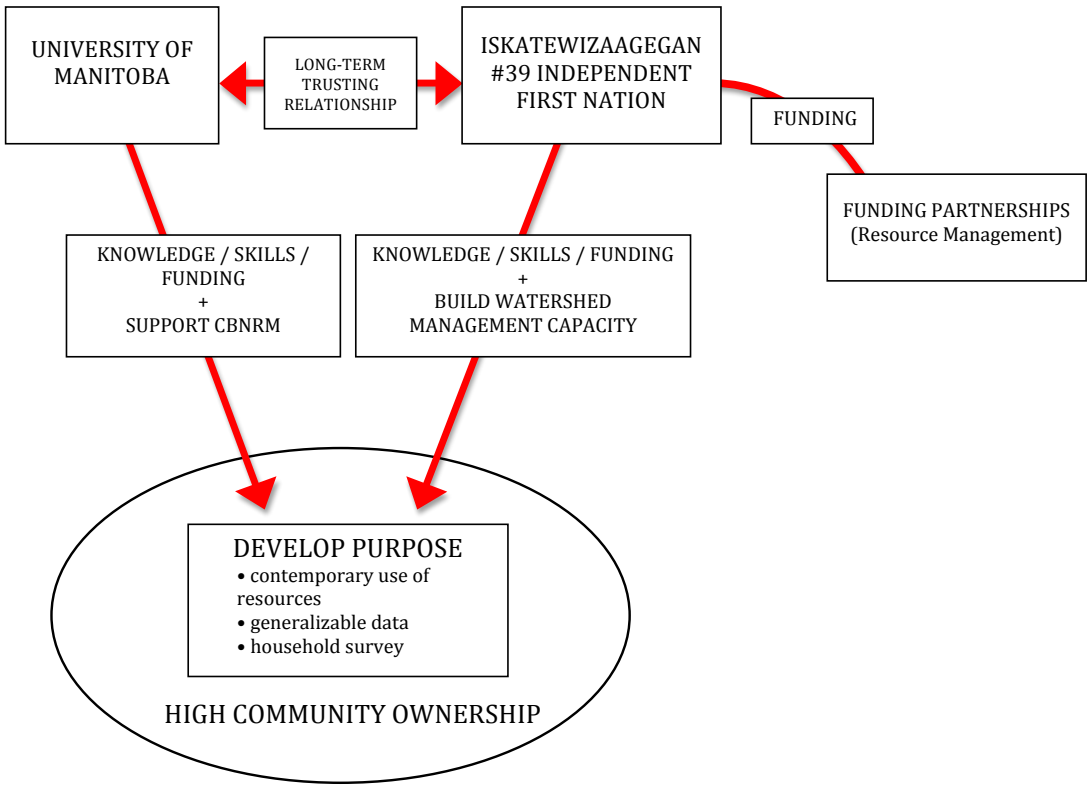


Figure 1. Developing a Purpose for a Household Survey

For this project, a household was defined as the dwellings of inhabitants living in the IIFN community on Shoal Lake, Ontario. Household size varied from one individual to over ten people.

To administer the household survey, a questionnaire was developed in a collaborative process involving a community researcher and myself, along with some guidance from my advisor (see Appendix 2). This questionnaire aimed at documenting how resources from the land and water contribute to the

community's well being. This included asking various questions about household composition, contemporary resource harvesting practices, such as fishing, hunting, trapping and gathering plants and medicines, and consumption of country foods. The questionnaire was designed to take approximately 30 minutes to complete and was administered through face-to-face interviews. Household survey participants were compensated by having their name entered into a raffle. The process for developing this research instrument is highlighted in Figure 2 below.

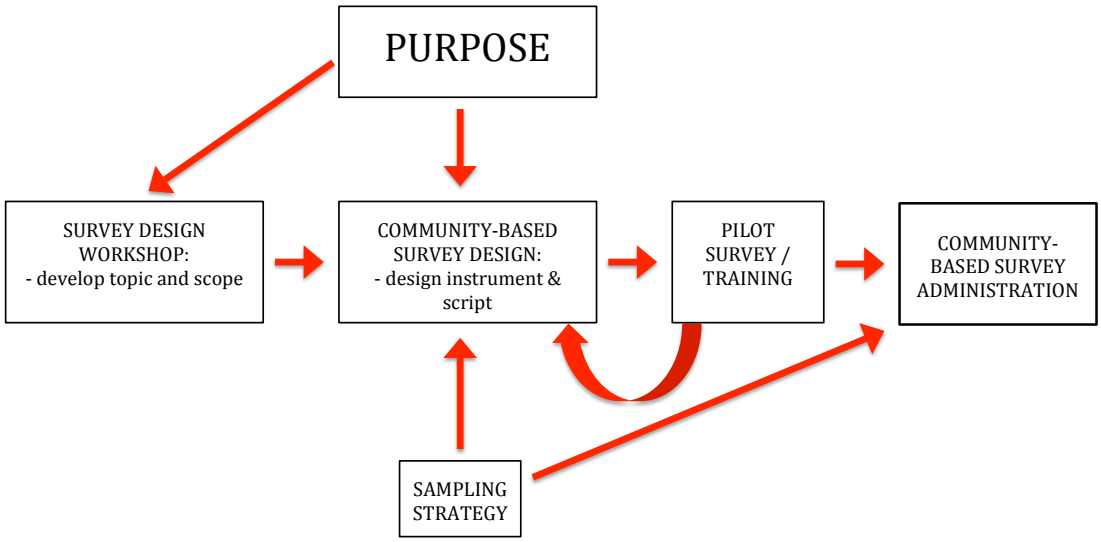


Figure 2. Community-Based Household Survey Design

A systematic sampling strategy was employed for this household survey that was applied to a randomly prepared list of the sample frame (Angelsen et al. 2011).

This sampling strategy also informed the design of the survey instrument. Knowing that we were not going to survey every household in the community allowed us to maximize the information that we gathered from each interview. Time restraints and funding resources limited our ability to survey the entire population, therefore, we selected a sample of 50 households (*n = 50*) to produce generalizable information about the total population (*N=144* households). Households were selected at random, using a household numbering system that was created for a previous community survey conducted in 2001. Using the random household numbering system, we created a household list, which numbered households from 1 to 144. We then had a community member select a number between 1 and 144 to provide us with our random starting point (household 107). That same community member then selected a number between 1 and 9, to provide us with the interval for randomly selecting households on the list. The number selected was 7 (*s = 7*). Following this methodology, the first household selected from the list was 107. We then selected every seventh household on the list until we reached 50 households. For each household selected, we interviewed the head of the household, as defined by household members.

This process is illustrated by the equation illustrated in Figure 3.

$$a = N / s$$

a = household N = total population (household list) s = interval (7)

(adapted from Angelsen et al. 2010)

Figure 3. Systematic Random Sampling Strategy

Before initiating the interview process, we tested our household survey instrument on three volunteer community members. This allowed us to make observations about aspects of the questionnaire that required some adjustments and allowed us to elicit feedback from community members on any suggested

changes or additions to the survey instrument. In response to the testing phase, we made some small revisions to the content and format of the household survey and incorporated community suggestions. The household survey itself was implemented throughout the month of August and was designed to document information that occurred over the course of the previous three months (May, June, July 2011).

3.4 Community Access and Working with the Community

When I began my research, I was an outsider to both the community and cultural context. As a result, a main hurdle that I had to overcome was gaining access to the community and finding research participants and interpreters to work with while I was in the field. My access to the IIFN community arose out of a long-term relationship between my supervisor, Dr. Iain Davidson-Hunt, and two community members: Phyllis Pinesse and Ed Mandamin. Throughout this project, Phyllis worked as a Councilor for the First Nation and had been allocated natural resources and environment as part of her portfolio. Ed Mandamin was the leader of the IIFN Natural Resources branch. As a result, my research was grounded in a long-term trusting relationship between my advisor and individual community members that was fostered over the course of several decades. With this stated, I was still partaking in research with a culturally distinct aboriginal group where I was an outsider to the community and to the culture. In my case, access to the community had been negotiated in advance of the commencement of the fieldwork, however, I conceptualized my access as a continuous process (Lee 1993). In many ways, the quality of relationships and rapport that I built with fishers and community researchers determined the success of my research.

Before I began the fieldwork for this research I tried to learn as much as I could about Anishinaabeg culture and worldview in an attempt to make sure that I would not project my dualistic view of the universe onto the culture that I was working with (Descola and Palsson 1996). When I began my fieldwork, I quickly learned that understanding aspects of an Anishinaabeg worldiew required

spending time out on the lake and land engaging with its resources. IIFN fishers and other community members graciously took me out on the lake and shared stories and teachings that would guide me in strengthening my understanding of how to relate to the lake and surrounding landscape. This greatly contributed to the success in communicating across cultures and was essential for understanding how to talk about the resources in question.

During my fieldwork, my lodgings were a rustic hunting cabin that was situated on the north end of Indian Bay. I spent many nights alone in this cabin, or partaking in fishing activities in the surrounding area. This exposed me to the serene beauty of Shoal Lake as well as its power and ruggedness. I was quickly humbled by the dangers associated with navigating around the various shoals, islands and reefs and became more aware of the little amount of knowledge I carried about the lake and its resources. I began to understand that the people that shared their knowledge about the lake and its resources for this thesis, hold this knowledge from spending significant amounts of time on the lake engaging with the living world. As I began to learn a little bit about the landscape over the course of my fieldwork, it seemed that my conversations with IIFN fishers about the lake and its resources became easier and the IIFN fishers began to divulge more information. I wish to recognize and acknowledge that the information presented in the following chapters would not be as rich as it is, without the lessons taught to me and the patience shown by the IIFN fishers that participated in this study.

CHAPTER 4: IMPACTS TO WATER, FISH AND COMMUNITY

4.1 Introduction:

In order to understand contemporary IIFN fishing practices it is first necessary to reflect on how resource developments and policy / legislation have affected these practices over time. Shoal Lake has a long history of resource developments, dating back to the 1880s. These include mining and forestry activities beginning in the late 1880s; the deepening and widening of Ash Rapids, which occurred at the turn of the 20th century; the construction and operation of the City of Winnipeg aqueduct project; the closure of the commercial walleye fishery in the spring of 1983; and more recently, seasonal cottage developments for urban residents. IIFN fishers perceive that resource developments have altered the hydrology of the lake, impacted fish spawning habitat and are having long-term adverse effects on the quality of water on Shoal Lake and its fish populations. There are a variety of social impacts that IIFN has endured from these ecological changes, which have been compounded since the 1980s by increased cottage development and the closure of the commercial walleye fishery. Today, IIFN contemporary fishing practices are influenced by a variety of factors. This chapter will describe what IIFN fishers see as major impacts to the Shoal Lake watershed and will share their perspectives on how they are impacting their contemporary fishing practices. This information is essential for understanding contemporary IIFN fishing practices and how they contribute to the community's well-being.

4.2 Iskatewizaagegan Perceived Impacts to Shoal Lake:

Table 2 (see p.38) highlights IIFN fishers perceived impacts on the health and integrity of Shoal Lake and their contemporary fishing practices. These include resource developments that have altered the hydrology of the lake, impacted the quality of water, and effected fish spawning habitat. It also includes government policies and legislations that have impacted their fishing practice. This chapter will provide a brief historical account of each of these perceived impacts and

describe IIFN fishers perceptions of their effect on Shoal Lake and their contemporary fishing practice. It should be noted that residential school is listed as a perceived impact as individuals, families and the broader community experienced a variety of social, cultural and spiritual impacts from this system, however, interviews with community fishers did not result in lengthy discussions about residential schools in relation to contemporary fishing practice. As a result, this is the only perceived impact that is not described in detail in this chapter. Other perceived impacts listed in this table are explained in detail throughout this chapter.

4.2.1 Opening of Ash Rapids

The blasting and widening of Ash Rapids occurred around the turn of the 20th century and was done to provide water-based transportation for timber operations that were taking place on Shoal Lake at this time (Shoal Lake Watershed Management Working Group 2002). Increasing the width of the channel to ten meters and deepening it to a minimum of 1.5 meters facilitated boat travel, and also increased the two-way flow of water between Lake of the Woods and Shoal Lake. Contributing to this exchange of water flow is the operation of the Lake of the Woods inlet dams near Kenora and the withdrawal of water out of Shoal Lake via the City of Winnipeg water intake (Consolidated Professor Mines Ltd.1992). The fluctuations in Shoal Lake water levels that occur from these factors are not well understood, however, community members perceive that the opening of Ash Rapids has caused long-term impacts on the quality of Shoal Lake water.

Table 2. IIFN Perceived Impacts on Contemporary IIFN Fishing Practices

Perceived Impact	Time Period	Effect on IIFN Fishing Practices
Residential Schools	1800s - 1980s	1) social and psychological impacts 2) linguistic, cultural and spiritual impacts 3) effects on disseminating fishing knowledge across generations
Opening of Ash Rapids	1880s	1) long-term impacts on water quality 2) introduction of new fish species
City of Winnipeg Water Intake and Associated Dyke	1915 - 1919	1) reversed seasonal water flows 2) disrupted walleye spawning habitat
Falcon River	on-going	1) degrading water quality (pollution from upstream cottage developments)
Mining Developments	1892 - 1985	1) driver for the opening of Ash Rapids 2) future threats to water quality
Forestry Developments	1890s - present	1) effects on water quality 2) future threats to water quality
Cottage Developments	1970s - 80s	1) increased water traffic 2) degraded water quality 3) increased fishing activity
Closure of Commercial Walleye Fishery	1983	1) disrupted fish populations and age structures 2) resulted in too many fish in the lake 3) created an imbalance in the lake

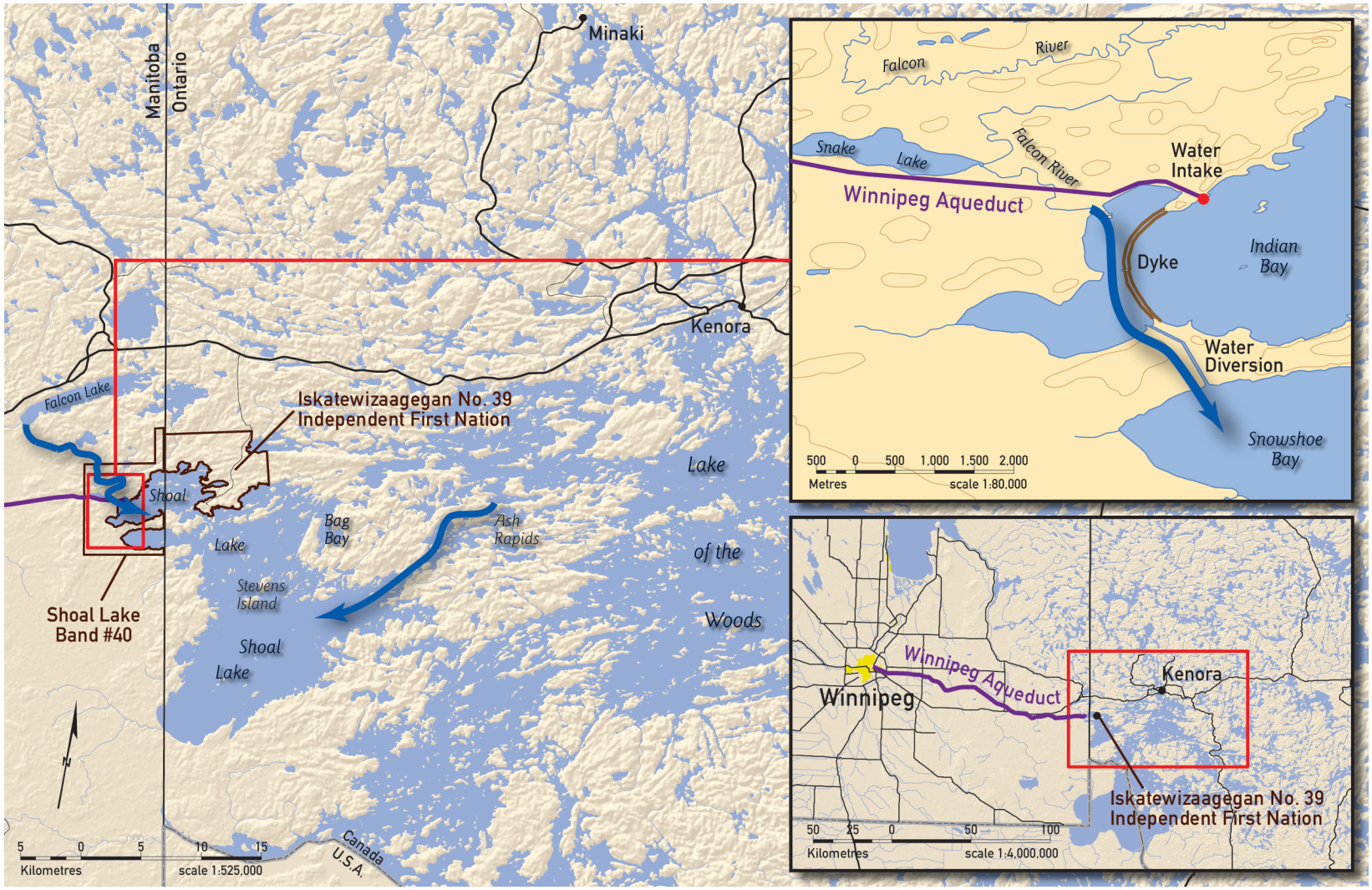


Figure 4. Shoal Lake, Ontario: Factors Affecting Water Quality

Ash Rapids: *(Photo accessed from Winnipeg Sun website, May 2012)*

(http://www.winnipegsun.com/2011/09/13/battle-bubbling-over-winnipeg-water)

It is also perceived that the opening of Ash Rapids has resulted in the introduction of new fish species into Shoal Lake, specifically smallmouth bass (Micropterus dolomieu) and largemouth bass (Micropterus salmoides). This is highlighted by the following statement made by an IIFN fisher:

> *"the bass fish were never part of this lake and when they were first brought into the lake, it was through Ash Rapids and around the Machin's area. That's where they were first concentrated but now it seems like they're all over the place."*
>
> (Randy Paishk, interview 008, 2011)

Contemporary IIFN fishers have observed increases in Shoal Lake bass populations within their lifetime. They have also observed an expansion in the area which the bass inhabit within Shoal Lake. For instance, several IIFN fishers commented on the fact that several decades ago bass were mostly found on the

east and southeast parts of the lake, however, more recently they have begun to spawn and inhabit areas all throughout Shoal Lake. Many IIFN fishers do not necessarily see the introduction of bass being detrimental to the ecology of the lake. They have observed changes in the composition of fish populations, however, they do not necessarily believe that the introduction of bass is causing adverse effects on other fish species.

Of greater concern to IIFN fishers are the potential long-term impacts on the quality of water resulting from the opening of Ash Rapids. In particular, these concerns are attributed to an uncertainty about the long-term impacts and how these may be affecting long-term ecological cycles of the lake. This sentiment is described in the following statement:

> "*You never really know what kind of other impacts that it may have…because of…Ash Rapids being opened for so long now and whether or not there's other contaminants entering into Shoal Lake. And it is, I guess for me, I look at if it can be proven scientifically that there is impacts on how we mitigate some of those impacts on the water quality. You know it is just the life cycle of each ecosystem that is impacted."*
>
> (Randy Paishk, interview 008, 2011)

Several IIFN fishers commented that they do not know the specific ways that the lake is being altered from the opening of Ash Rapids, and that this uncertainty itself is a concern. What they do seem certain about however is that the opening of Ash Rapids has decreased Shoal Lake's water quality, and that these effects are closely linked and exacerbated by the withdrawal of water via the City of Winnipeg water intake. The following community fisher's statement highlights his concern with the connection between the opening of Ash Rapids and the withdrawal of Shoal Lake water from the Winnipeg water intake.

> *"They're trying to minimize the activity on Shoal Lake itself, but the more water they take, the more water comes in from Ash Rapids as they take it*

out from Indian Bay [via the water intake]. So my concern is when Shoal Lake water levels go down the water that's coming in from Lake of the Woods – where does that water come from? From Lake of the Woods? Does it come from Rainy River? Does it come from the Great Lakes? How is that filtered? How is it managed? How is the water quality being managed on that end of the lake? We're affected by it."

(Brennan Wapioke, interview 007, 2011)

This statement highlights a concern with Lake of the Woods water entering into Shoal Lake and raises questions relating to the management of this controlled hydrological system. In addition, it demonstrates IIFN concern and knowledge of the inter-linkages between water entering into Shoal Lake via Ash Rapids and the withdrawal of water from the City of Winnipeg water intake.

4.2.2 City of Winnipeg Water Intake and Aqueduct

In 1913, the City of Winnipeg was given approval by the governments of Canada and the United States of America to withdraw 100 million gallons (455 million liters) of water from Shoal Lake per day to provide a reliable source of clean drinking water to people living in Winnipeg (Tawney et. al 1913). Construction on this project was undertaken between May 15, 1915 and April 6, 1919 and cost $17 million dollars (Winnipeg Water and Waste Department 2002). The location of the Winnipeg aqueduct project and its supporting infrastructure are highlighted in Table 3 (p.17).

IIFN fishers perceive a variety of impacts from this development. The most notable concerns are its potential long-term impacts on water quality and fish spawning success. IIFN fishers are concerned with the rate on impingement of larval, spawn and juvenile fish associated with the intake. They are also concerned with the effects that this project has had on the spawning success of walleye and sucker populations.

Table 3. The City of Winnipeg Aqueduct and Supporting Infrastructure

Infrastructure	Location
Water Intake	Northwest Shore of Indian Bay
Dyke	West end of Indian Bay
Concrete Aqueduct	From intake site to east side of the City of Winnipeg (156 kilometers long)
Greater Winnipeg Water District Railway	From intake site to the City of Winnipeg

Water Intake Facilities (Shoal Lake Watershed Management Plan 2002)

Shoal Lake fisheries studies have noted the direct impacts that the water intake has on fish mortality (Bosnich 1995; Seyler 2000). Some IIFN fishers who have worked at the water intake in the past have commented on the large amount of fish eggs and fish fry that get sucked into the intake. This sentiment is highlighted in the following statement made by one IIFN member who worked at the intake:

> "*You should have seen the pickerel there in the nighttime. Um, 10 – 12 pounders, uh…you know, my old boss was telling me one year you could almost walk across…in front of the intake. And, you'd see the eggs, you'd see the milt, and 100 percent kill rate down the pipe – chlorinated. The fish were even clogging the screens. When the suckers were spawning, the screens were, uh, they'd be almost continuously running because there would be so many eggs coming in that they would plug the filters up …and the water flow slowed down so the screens would turn on, eh. They would turn on quite a bit, just from not enough water going through, and the eggs were plugging the screens up."*
>
> (Wayne Holmstrom, interview 001, 2011)

Many IIFN fishers feel that more scientific studies should be undertaken to better understand the impacts of fish mortality due to the intake on fish populations. Short-term studies have been undertaken to understand the effects the intake has had on walleye populations. However, IIFN fishers feel that these lack longer-term analysis of these effects. In addition, IIFN fishers feel that the long-term effects need to be studied in other fish species, such as lake whitefish and white suckers *(Catostomus commersonii).* One IIFN fisher comments on the concern for long-term impacts of the water intake:

> *"I guess the biggest [impact] would be the intake and the water that the City [of Winnipeg] uses for its drinking source. I've always been concerned about the impacts. And a lot of the stories that have come out from the people that have worked at the intake and we still don't have a good handle on some of*

the questions around the impacts of the intake. That's always been my interest, to know. And in my mind, I think it does have a big impact in terms of spawning areas and fish habitat. I guess, so historically those kinds of development have had impact that we still don't have a real picture of. But in terms of…the impacts that it has with the ecology, or where they live, is what I think has changed."

(Randy Paishk, interview 008, 2011)

Many IIFN fishers feel that the current created by the intake attracts fish and perpetuates fish mortality. It is widely understood that walleye spawning activity typically occurs in rivers and streams that have moving water. IIFN fishers perceive that during spring spawning season, the water current generated from the intake attracts walleye resulting in increased mortality of fish eggs, fry and juvenile fish. This sentiment is highlighted in the following statement:

"…I worked at the intake and I did see some fish swimming, right inside the intake, near the water drop-off. It would be like a river system for them, eh. [The fish] were thinking that it is a river system. And that is where they would mate, you might say. Fertilize the eggs. So most of the eggs after they are fertilized, uh…and I guess, the female pickerel lay their eggs, it gets sucked up…the aqueduct. All the eggs and that."

(Oliver Pinesse, interview 004, 2011)

Several IIFN fishers emphasize that the long-term effects of the water intake on fish populations are not well understood and they must be considered in order to understand the dynamics of fish populations on Shoal Lake.

Another main perceived impact of the water intake is how it has altered the hydrological cycles of the lake and the linkages of this to decreased water quality on Shoal Lake. Specifically, the combination of the opening of Ash Rapids and the withdrawal of up to 100 million gallons (422 million litres) of water each day has reversed the hydrology of the lake during certain seasons, increasing the amount

of polluted water that is drawn in from Lake of the Woods via Ash Rapids (see Figure 4, p.13). A fifth generation commercial IIFN fisher commented on the fact that "the lake used to flow the other way, but now it flows this way" (Jim Holmstrom, interview 002, 2011). This change in seasonal water flows is also coupled with changes in water levels, which have impacted wild rice harvest and certain fishing areas. The concern with the long-term impacts of these changes in the Shoal Lake water regime is highlighted below:

> *"…when the aqueduct was first built –20 to 50 years – you didn't have major impacts. But the amount of water over a longer period of time, you start seeing some of the impacts that it has on the fishery and the wild rice fields…"*
>
> (Randy Paishk, interview 008, 2011)

The fluctuation in water levels on Shoal Lake as well as the reversal of water flows is perceived as impacting the health and integrity of the lake, and IIFN fishers who spend time out on the lake observe changes in water levels. One IIFN fisher comments on the fluctuation of water levels below:

> *"I camped there [at Ash Rapids] for at least two months and saw that current just whipping by one day and then going the other way the next three days and back again…There was that much water coming through and sometimes on the rocks it would be that much different – sometimes it would be even a foot."*
>
> (Jim Mandamin, interview 009, 2011)

As part of the City of Winnipeg's permit, they must ensure that Shoal Lake water levels do not fluctuate more than 3 feet a year. IIFN members are skeptical about whether these regulations are observed, and feel that overall the City of Winnipeg does not regulate Shoal Lake water levels with very much precision As indicated in the previous sections, IIFN members attribute the steadily decreasing quality of water on Shoal Lake to the reversal of seasonal water flows.

They perceive that the more water that is withdrawn from Shoal Lake, the more polluted it becomes because it is replaced with water from Lake of the Woods. By understanding these dynamics, IIFN members believe the intake is having long-term detrimental impacts to Shoal Lake's water quality.

Another concern associated with the Winnipeg aqueduct project is its impacts on walleye spawning habitat. The Falcon River system is recognized as the most productive walleye-spawning habitat on Shoal Lake (Shoal Lake Watershed Working Group, 2002). Both scientific and local knowledge support this. Fisheries studies conducted by MNR, Anishinaabeg Ontario Fisheries Resource Council (AOFRC) and the local knowledge of IIFN fishers conclude that the majority of walleye that inhabit Shoal Lake, travel up the Falcon River in the springtime to spawn.

The hydrology of the Falcon River is controlled by three factors: a culvert and stop-log dam located in the southwest corner of Falcon Lake where it outlets to the Falcon River; a dyke located at the western end of Indian Bay on Shoal Lake; and, the diversion of water from Indian Bay into Snowshoe Bay (see Figure 4). The Falcon River naturally drained directly into Indian Bay located at the northeastern end of Shoal Lake. However, in 1916 the lower end of the Falcon River was altered to drain into Snowshoe Bay (a bay located directly to the south of Indian Bay). Changing the course of the Falcon River was done as part of construction of the Winnipeg aqueduct project. The purpose was to divert the highly coloured river discharge away from the water intake located near the outlet of the Falcon River (Shoal Lake Watershed Management Group 2002).

The construction of the dyke and the diversion of the Falcon River into Snowshoe Bay is perceived as having detrimental effects on spawning success, which is highlighted by the following statement made by an IIFN fisher:

> *"When they first built [the water intake], there would have been a big impact on [walleye populations]. Because…the dykes there, eh. When the water used to come into Indian Bay [via the Falcon River]…they blocked it off so the fish –*

if they would have to spawn – they would have to go around Snowshoe Bay way."

(Jim Holmstrom, interview 002, 2011)

IIFN fishers have noted that walleye have adapted to the diversion of the Falcon River and now travel through Snowshoe Bay to reach their spawning grounds. However, it is perceived that there is a lower spawning success since the construction of the dyke and the diversion of this waterway. IIFN fishers believe that the long-term impacts of this development on the spawning success of walleye are exacerbated by upstream pollution flowing down the Falcon River.

4.2.3 Falcon River

IIFN community members perceive the Falcon River system as a main impact to the health and integrity of Shoal Lake's ecology. Specifically, they are concerned about the amount of pollution that is being transported from the densely populated Falcon Lake to Shoal Lake. There are two main issues that were raised by community fishers in relation to this phenomenon.

1) Pollution from Falcon Lake is affecting water quality and water clarity
2) The alteration of the river itself is affecting walleye spawning productivity

Many community members commented that they have personally observed pollution entering Shoal Lake via the Falcon River. They feel that the water quality on Falcon Lake is poor in comparison to the water quality on Shoal Lake, due to a high density of cottages and related water-based activities. Therefore, it is perceived that the Falcon River is constantly transporting polluted water into Shoal Lake via Snowshoe Bay. This sentiment is described below:

"…Falcon River, flows from Falcon Lake – and you look at all those cottages in Falcon Lake, and their raw sewage comes into Snowshoe Bay."

(Francine Lee, interview 006, 2011)

Prior beach closures on Falcon Lake due to high levels of E. coli recorded in its waters are a concern to IIFN community fishers (Winnipeg Free Press 2010). Because Falcon Lake flows into Shoal Lake, there is a wariness and uncertainty of the amount of pollutants that are being transported into Shoal Lake. One IIFN fisher describes this sentiment below:

> *"…You have Falcon Lake there that always has their beaches closed due to E. coli bacteria and just the poor water quality that they have there. And that is what is coming into our lake through Falcon Creek – Snake Lake."*
>
> (Brennan Wapioke, interview 007, 2011)

Other concerns include issues surrounding the control structure at the west end of Falcon Lake. Because the Falcon River is a main spawning site for Shoal Lake walleye, some IIFN fishers are concerned that at times the water levels are kept too low on the Falcon River, which can impact the fish spawning success. For instance, one IIFN fisher reflected on times that he observed walleye and white sucker populations being stranded in shallow waters on the Falcon River. He describes this in the following statement:

> *"All of a sudden somebody will turn the water level down at Falcon Lake and all these fish are stranded. And they are accessible to the birds eh and I could not believe the amount of kill rate. It was just unreal, boy. Yeah, the amount of suckers and pickerel [walleye] that they killed. And when you go up there…you can just see the pickerel, like you can just grab them with your hands…just they are so thick. So the birds would have had a hay-day. If I am catching them by hand, it is amazing what the birds are doing."*
>
> (Wayne Holmstrom, interview 001, 2011)

From these statements, it is clear that IIFN fishers perceive the inflow of Falcon Lake into Shoal Lake as having an impact on water quality and fish spawning success. The fact that harmful bacteria and other pollutants are potentially being carried into Shoal Lake via the Falcon River is perceived as a major threat to

Shoal Lake's water quality. Because the Falcon River is the main spawning site for Shoal Lake walleye, it is perceived that decreases in its water quality and water quantity are likely having adverse effects on these fish populations.

4.2.4 Forestry Development

Shoal Lake has a long history of forestry development. Beginning in the 1880s, logging and sawmilling became a part of the Kenora economy supporting the Canadian Pacific Railway (CPR) (Ontario Ministry of Natural Resources website accessed May 2012). Over the past century logging activities have generally focussed on pine and spruce (Shoal Lake Watershed Management Working Group 2002). Currently, the forests of Shoal Lake have been designated as part of the Kenora Forest by MNR. In size, this forest unit has a total area of 1,225,536 hectares. Of this, 521,278 hectares are managed Crown productive forest land, with the remaining consisting of muskeg, rock, non-forested land, water, private land and federal land (Ontario Ministry of Natural Resources website accessed May 2012). Tree species include: poplar, jack pine and spruce (black and white) and to a lesser degree balsam fir, eastern white cedar, white pine and red pine. The region is currently managed under the Kenora Forest Plan, which has a plan period of 2012 to 2022.

IIFN members did not emphasize that forestry activities are significantly impacting the integrity of Shoal Lake or their contemporary fishing practices. However, they did speak more generally about the importance of having healthy forests because they provide a variety of ecological services, such as providing essential animal habitat and purifying Shoal Lake's water. IIFN fishers perceive forestry activities, particularly on the Manitoba side of the lake, are contributing to the degradation of water quality. This is described in the following statement:

> *"I think our lake has had it. With Manitoba cutting their forests on the Manitoba side [of the lake]. Well that's our aquifer, and they're not helping. Especially for Manitoba saying they're looking after their water resources and everything else. Well they're [ruining] our lake by cutting the trees there*

- that's our aquifer. On the…southwest end of the lake. All that big swamp back there, that's where the majority of our water comes from. But overtime it's going to go down. They shouldn't be logging it, eh, but they are."

(Wayne Holmstrom, interview 001, 2011)

Forestry activities are perceived to be another factor threatening the health of the lake's ecosystem and the quality of the water. In particular, the risk of future forestry developments and their potential environmental impacts are a concern for IIFN members.

4.2.5 Mining Development

The Lake of the Woods - Shoal Lake area is underlain by granite greenstone terrain, which is often host to many major mineral deposits, such as gold, silver and nickel. The discovery of gold on Lake of the Woods in 1872 stimulated the first gold mining boom in the area, which occurred between 1892 and 1906 (Smith 1987). The Lake of the Woods gold rush attracted prospectors to the area, who eventually set up gold mining projects in Shoal Lake. Today there exist two main mining sites on Shoal Lake: the Duport / Cameron Island Mines on Cameron Island and the Mikado and Cedar Bay Mines at Bag Bay (see Figure 5). Most IIFN fishers did not describe mining developments as a major impact to their fishing practice or to the health and integrity of Shoal Lake, which may be related to the fact that the last mining activity on Shoal Lake occurred in 1985. Impacts of mining activities may not be in the recent memories of IIFN fishers, however, the potential impacts of these forms of resource developments should not be discounted. As indicated earlier, the opening of Ash Rapids occurred to facilitate travel between Lake of the Woods and Shoal Lake for the purpose of mining and forestry activities (Shoal Lake Watershed Working Group 2002). The increased inflow of water from Lake of the Woods into Shoal Lake is seen as a major impact to water quality on Shoal Lake, therefore mining developments may have indirectly impacted water quality on Shoal Lake.

Mikado Mine at Bag Bay:

The Mikado mine has been the second most productive gold mine in the Kenora district and the most substantial mining operation on Shoal Lake. It's peak production years were 1896 -1902; 1910-1911 and 1931, which resulted in the extraction of 28, 300 ounces of gold (Consolidated Professor Mines Ltd. 1992). This is also the first mine in North America to use cyanide for gold recovery (Perry 1990). The Cedar Island mine was also connected to this mine and operated in years 1896; 1932; and between 1935 – 36. This resulted in the extraction of 4,941 ounces of gold and made it the fifth most productive gold mine in the Kenora district (Consolidated Professor Mines Ltd. 1992).

Duport Mine at Cameron Island:

Mining explorations on Cameron Island began in the 1880s. Gold was first discovered at the Cameron Island site in 1896 (Smith 1987). Between 1887 and 1900, four different gold structures were identified, stimulating underground development of two of the veins (Smith 1987). Underground development took place in the years of 1896 – 1906; and 1934 – 1936, which resulted in the production of considerable amounts of ore, gold and silver (Smith 1987). Approximately 4, 670 ounces of gold have been extracted from the Duport gold deposit, making it the 6th biggest gold producer in the Kenora district (Consolidated Professor Mines Ltd. 1992). Mining activity has been undertaken at this site throughout the second half of the twentieth century, including the years 1950; 1965-67; 1973 and 1984. These explorations have revealed that the Duport gold deposit is of exceptional grade, and potentially contains an excess of 700,000 ounces of gold (Consolidated Professor Mines Ltd. 1992). Contemporary mining explorations of the Duport Mine that have been attempted by Consolidated Professor Mines Ltd., but have been met with opposition from cottage owners and the City of Winnipeg, due to the potential risks of contaminating Shoal Lake's water quality.

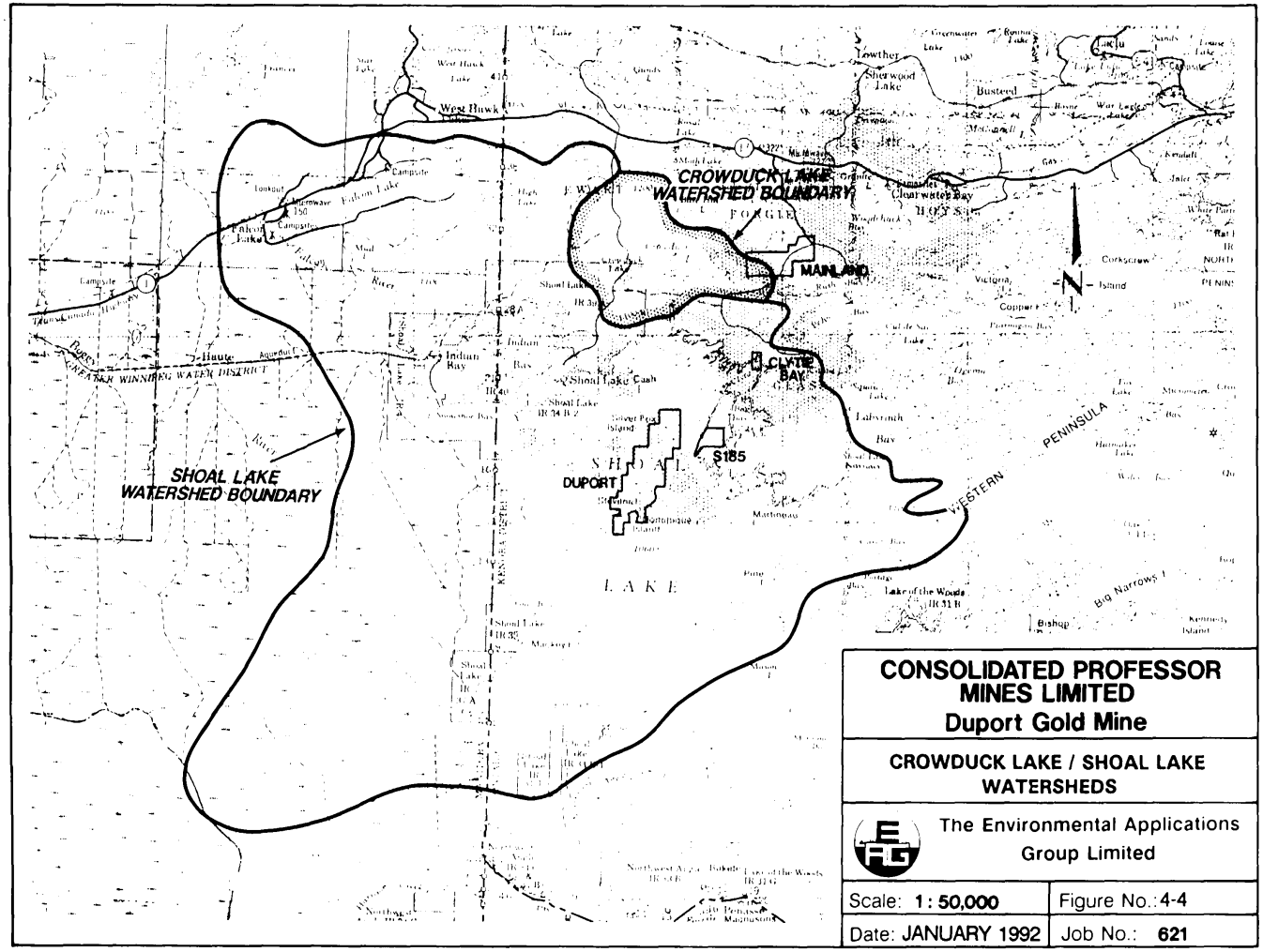


Figure 5. Shoal Lake Gold Mining Sites (Consolidated Professor Mines 1992)

Even though IIFN community members are aware of earlier mining activities on Shoal Lake and the linkages to the opening of Ash Rapids, they do not perceive this to have had a significant impact to their contemporary fishing practices and the health of the Shoal Lake ecosystem. With this stated, IIFN fishers are wary of the potential for future mining exploration on Shoal Lake and are uncomfortable with the uncertainty surrounding when and at what scale this might occur. It is clear that IIFN fishers perceive that future mining activity on Shoal Lake is inevitable because of its rich gold deposits. As one IIFN fisher put it: *"there will be a mine here, the gold is here - it is proven. It's proven it is in the ground. You just have to take it out"* (Jim Holmstrom, interview 002, 2011). Several members commented on the fact that developers are only waiting for ideal market conditions to recommence mining operations.

IIFN fishers perceive that early mining and forestry activities are the first form of resource development on Shoal Lake and have therefore impacted Shoal Lake by opening it up for other forms of resource developments, such as the more recent cottage developments.

4.2.6 Cottage Development

Cottage developments on Shoal Lake occurred much later than some of the other lakes in the watershed, such as Falcon Lake and Lake of the Woods. In fact, up until the 1980s, there were virtually no cottages on Shoal Lake. Community members that grew up in commercial fishing families described how unusual it was to see a boat out on the lake that they did not recognize prior to the 1970s and 80s.

> *"Yeah, 70s – 80s. Uh, when I was growing up you heard a boat – you already knew who it was before you seen it. It was so quiet back then, there was nobody out. You never would see anybody out. There was a guy with one cottage on the lake - he was an American – he used to come up once a year for maybe three weeks. That was the only stranger, pretty well. You would see*

him every, every summer he would come out and they would just target big pickerel and that was it, eh? And uh, yeah it was pretty quite back then. There was nobody out there, then."

(Wayne Holmstrom, interview 001, 2011)

Cottage construction came to Shoal Lake when a series of mining claims that were transferred into private lands in the 1970s. The newly acquired private lands were then divided into multiple land parcels, to allow for the sale of these parcels to prospective cottage owners. IIFN community members were not informed of the land transfers that were occurring on their traditional lands, and were therefore surprised when they began. This phenomenon is described by the following IIFN fishers' statement:

"Each property owner was allowed one house, one boat house, one dock. So all these old mining claims, which were fairly big, well people bought them and then turned them into a corporation. And then turned them into parcels. So instead of one landowner, there's all of a sudden twenty people that have…own that parcel and each person is entitled to a house and a dock. That's how they got around that law, eh? So all of a sudden all these cottages come up (laughs). So they just bent the rules a little bit and the MNR couldn't stop them, and they built their cottages."

(Wayne Holmstrom, interview 001, 2011)

Today, there are approximately 180 cottages on Shoal Lake, many of them owned by city residents from Winnipeg, Manitoba (Shoal Lake Watershed Management Working Group 2002). Most cottages are situated along the shoreline in the northeast quadrant of the lake and on the many islands located in the northern portion of the lake. Seasonal cottage residents use either the Clytie Bay Road or the Shoal Lake Road to access parking, docking and boat launching facilities (Shoal Lake Watershed Management Working Group 2002).

Many IIFN fishers perceive that the recent introduction of seasonal cottagers to the area has impacted their contemporary fishing practice in a variety of social and environmental ways. Impacts include increased boat traffic on the lake and a perceived increase in water pollution. There have also been some cases of cottagers tampering with IIFN fishers' nets. Many IIFN members commented on the fact that Shoal Lake's First Nations communities are often blamed for polluting the lake while they feel it is the seasonal cottagers who should be held accountable. One IIFN Elder describes this sentiment below:

> *"Look at the cottages - all these cottagers from Manitoba. They come here and pollute the water. You never hear that."*
>
> (Francine Lee, interview 006, 2011)

IIFN members perceive that the impact of cottages on water quality is often not considered by MNR. Several IIFN members are frustrated by the fact that their community gets blamed for these issues when they rely on Shoal Lake for their survival and therefore must ensure that it remains healthy for future generations. As such, IIFN assumes a custodial responsibility for the lake and its territory (Davidson-Hunt 2003). It is perceived that the seasonal cottagers do not have a vested interest in maintaining a healthy lake because they come to the lake only for leisure and recreational purposes, primarily during the summer months. Some IIFN members described how this lack of dependence on the lake for its resources disconnects them from how they are impacting it. This sentiment is described in the following statement made by one IIFN fisher:

> *"That is one thing that a lot of people do not understand around here – you can move into a place and once you contaminate the water, and harvested all the wood and your food source is gone. And that is I guess comparable to us: we are on the lake and we need the lake to survive, whereas the majority of the Canadian population is going to the lake for recreation and that. So if there is any contamination in that lake or that lake is no good – the water is no good then they will move onto another lake. Contaminate that – populate*

that. And they will just keep going on, moving on. Whereas us here, in general, who live in Shoal Lake – if this lake was contaminated whether it is – who knows mercury or cryptosporidium, or anything like e. coli - if we cannot drink that water or eat anything out of that lake then we cannot go over anywhere. We're stuck here."

(Brennan Wapioke, interview 007, 2011)

This comment highlights a variety of issues concerning IIFN perception of the impacts of cottage development on Shoal Lake and its people. It also highlights the fact that IIFN fishers perceive that cottagers have a transient relationship with the lake and therefore do not adopt the same custodial responsibilities that are required to ensure the lake remains healthy for future generations.

4.2.7 Commercial Walleye Closure

The closure of the commercial walleye fishery in 1983 caused devastating social and economic impacts to IIFN community members that are described in detail in the next chapter. In addition, many IIFN fishers believe that the closure of the commercial walleye fishery has caused adverse environmental impacts to Shoal Lake's ecological systems. In particular, they perceive that it has caused changes to food webs that have resulted in unhealthy and unbalanced fish populations. Several IIFN fishers believe re-introducing a commercial walleye fishery on Shoal Lake is essential for restoring the health of the lake and fish populations. In addition, they believe that it "would ease the quality of the water…and maintain its purity" (Oliver Pinesse, interview 004, 2011).

IIFN fishers perceive that maintaining a healthy balance of different fish populations requires a regular harvest of walleye. The next chapter emphasizes the fact that since the walleye fishery was closed the majority of IIFN members have shifted their fishing practice from gillnetting techniques to angling techniques. This shift in fishing technique has caused a considerable decrease in walleye harvests, which is perceived to have resulted in dramatic increases in northern pike and walleye populations. The increases of these fish populations

are perceived to be degrading the quality of fish in the lake. This sentiment is described below:

> *"No, it was just way too many [fish]. If anything I would say our lake is downgraded to a level two lake, instead of a number one. There is lots of worms in the fish now and that is because there is too many fish in the lake."*
>
> (Wayne Holmstrom, interview 001, 2011)

In addition to worms, IIFN fishers perceive that there have been increases in the amount of lesions and warts on fish and that "they are passing [them] to each other" more easily because there are too many fish in the lake (Wayne Holmstrom, interview 001, 2011). MNR fisheries technicians assure that this is natural and does not reflect "unhealthy fish populations", however, community members do not necessarily see it the same way (Bolton field notes 2011). Many IIFN fishers are concerned by warts, blemishes and lesions that are found on fish. This sentiment is described in the following statement made by one IIFN fisher:

> *"I still do a lot of fishing – and if there are fish that have these warts or marking or cuts on them, or anything different about them. I would throw them back in the lake. Like for me it is more personal, I guess. I do not know whether or not it is safe to eat or not."*
>
> (Randy Paishk, interview 008, 2011)

Other IIFN fishers shared this same sentiment and described that whether or not these blemishes affect the meat of the fish, they will still throw them back for "personal" reasons.

The perceived impacts surrounding high walleye populations are thought to be exacerbated by the dramatic increases in the size of walleye since the closure. The amount of large walleye in the lake is impacting contemporary IIFN fishing practices, especially for fishers who continue to use gill nets for subsistence purposes. Typically IIFN fishers prefer to eat walleye that are under 20 inches (50.8 centimeters), and preferably between 14 and 18 inches (35.6 to 45.7

centimeters) (Bolton field notes 2011). With the overall increase in walleye sizes, IIFN fishers have had to adapt their fishing practice by lifting their nets more frequently than in the past, and having to discard many of the fish in their catch that are too large. This phenomenon is described by one IIFN fisher:

> *"[There are] just too many fish. And, so the fish are all fresh and I am letting the big jackfish [northern pike] go, I am letting the big pickerel [walleye] go and keeping all the smaller ones…half my fish that I catch I am letting go. They are all over four pounds and that is [fishing with] a small meshed net yet, eh? If I left it there all night, it is just a…waste. Too many big fish killed. Just too many big fish period."* (Wayne Holmstrom, interview 001, 2011)

IIFN fishers continue to adapt their fishing practices to the changing conditions of the lake and its resources. However, the decrease in gill netting since the closure of the commercial walleye fishery is seen as having detrimental effects on the ecology of the lake. It is perceived that fish populations are 'out of balance' and too many large fish in the lake are making gill-netting efforts more difficult. In the past, IIFN fishers would leave gill nets out over night, however, nowadays they usually only leave them out for a few hours. Sometimes, IIFN fishers will lift their nets within 10 minutes of setting them. The size of walleye and the abundance of fish in the lake is perceived to be 'not normal' by IIFN fishers standards. As a result, many IIFN fishers believe that the reintroduction of a commercial walleye fishery would "bring back the balance on the lake" and restore the health and integrity of the lake (Vernon Fair, interview 005, 2011).

4.2.8 Potential Future Impacts

During my fieldwork in the summer and fall of 2011, IIFN's concern for environmental impacts to Shoal Lake were brought into the forefront of local political decision-making in response to new resource development proposals by the City of Winnipeg and the Government of Ontario. A comprehensive discussion of these contemporary developments is beyond the scope of this chapter, however, it should be noted that IIFN fishers are concerned with

potential impacts future developments will have on their fishing practices. Of major concern is the City of Winnipeg's proposal to increase its drinking water service to surrounding rural municipalities, which in turn would increase the amount of water that the City of Winnipeg is permitted to withdraw from Shoal Lake. Increasing the volume of water being taken out of Shoal Lake would increase the rate at which water from Lake of the Woods would enter into Shoal Lake, which may exacerbate the impacts that have been observed over the past century. In particular, IIFN believe that this would result in a more rapid deterioration of water quality on Shoal Lake, which would drastically impact future resource harvesting activities, including IIFN fishing practices.

4.3 Chapter Summary

This chapter has highlighted resource developments and other factors that are perceived to have impacted the health and integrity of Shoal Lake and that have influenced contemporary IIFN fishing practice. It is clear that IIFN fishers have detailed knowledge of the changes that have occurred to the Shoal Lake ecosystem within their lifetime. Several IIFN fishers also hold detailed knowledge of what Shoal Lake looked like before their lifetime, as stories of the lake have been passed down across generations. IIFN fishers have a deep understanding of the hydrology of Shoal Lake, especially in relation to the different waterways that are entering into the lake. IIFN fishers perceive that the inflow of water from outside sources such as Lake of the Woods and Falcon Lake is degrading the water quality on Shoal Lake. The combination of impacts that are being experienced from the water intake and associated dyke, the diversion of the Falcon River and the opening of Ash Rapids has reversed the hydrology of the lake during certain seasons and has drastically altered Shoal Lake's most productive spawning habitat. IIFN fishers are concerned about the potential long-term effects of these factors on the health and integrity of Shoal Lake and believe that more scientific studies need to be conducted to understand these dynamics and how they might be impacting fish.

Mining development and forestry developments are seen as potential future threats that will inevitably occur, and will greatly impact Shoal Lake's water quality, ecosystem functions and the Iskatewizaagegan people. It is perceived that cottagers are also contributing to the pollution of Shoal Lake, both from the use of improper septic systems and pollution from boating activities. Their presence on the lake is a concern to IIFN fishers. Because of cottagers' transient relationship with the lake, IIFN believes that these people do not have the same connection or assume the same custodial role for the lake.

There is also a considerable concern with the impacts from the closure of the walleye fishery. IIFN fishers believe and that too many walleye, and in particular, too many large walleye provide signs that the lake is 'out of balance'. Imbalances in fish populations are thought to be a result of decreases in fish harvests. IIFN fishers perceive that re-introducing a commercial harvest of walleye could alleviate some of these effects. Finally, IIFN fishers are unsure of the ways that contemporary and future developments will impact Shoal Lake and their fishing practices and feel that more scientific studies need to be conducted to understand some of these potential impacts.

CHAPTER 5: SHOAL LAKE COMMERCIAL WALLEYE FISHERY

5.1 Introduction:

Fishing is an integral aspect of the life, culture and identity of the IIFN peoples and is an essential component of their complex seasonal subsistence strategy. Over the past several hundred years, IIFN has adapted their fishing practices to meet their needs within changing political, economic and environmental circumstances. Prior to contact with Europeans, fishing was an essential component of a complex seasonal subsistence strategy. In the mid 17th century, the IIFN adapted their fishing practice and began trading fish with European newcomers for various goods. With the introduction of a commercial fishery in the 1920s, the community again adapted their practice to the newly introduced resource-based industry in order to provide economic inputs for their families. When the commercial walleye fishery was closed in 1983, it was the "bread and butter" of the IIFN local economy and the main source of livelihood for IIFN families. As a result of the closure of the commercial walleye fishery, the community experienced various social and cultural impacts to be explored further in this chapter.

Shoal Lake has a very complex political legislative history with a long history of resource development. In order to understand contemporary IIFN fishing practice, it is therefore necessary to provide a relevant contextual and historical background. This will include a discussion of community members' perspectives on IIFN fishing practices throughout the commercial fishery period (1920 – 1983) and a recounting of some of the social and economic impacts that community members endured as a result of the commercial walleye closure in 1983. This will set the context for the remainder of this chapter.

5.2 Shoal Lake Commercial Fishery: 1920 - 1983

The Anishinaabeg people of Shoal Lake practiced a variety of fishing methods prior to the introduction of a commercial fishing industry in the 1920s. Resources obtained through this practice made up an essential component of their diets and provided a sense of identity and social cohesion for many families (Francine Lee, interview 006, 2011). Because none of IIFN's contemporary fishers were alive prior to the introduction of the commercial fishery in the 1920s, this section will describe the period when the Shoal Lake commercial fishery was prospering, focussing specifically on the period from the 1950s until the closure in 1983. Interviews with contemporary IIFN fishers provide a rich source of information to describe what life was like for IIFN during this time.

Throughout this period, commercial fishing was a source livelihood for many IIFN families. The fishery supported families financially through the sale of fish to local markets and provided sustenance to fishing families and to the community as a whole. Contemporary IIFN fishers reflected on the variety of ways that the commercial fishery contributed to the community's well-being noting that "people did make a good living from it, and a lot of people used it for their own use and to sustain themselves as a source of food" (Randy Paishk, interview 008, 2011). While many families relied on fishing for a livelihood, it was also an important source of leisure for families. For instance, angling activities that families partook in were remembered as important to family cohesion and a source of fun.

> *"And even though [my mother] fished for a living – did commercial fishing - we also went fishing just to have fun…You know, imagine fishing for a living and also taking your family out and fishing for fun. And we would go out fishing, and we would go swimming out there. And she would cook for us. And it was great growing up. So that's what I remember the most about growing up in a fishing family."*
>
> (Francine Lee, interview 006, 2011)

Throughout the majority of the twentieth century, the commercial fishery was perhaps the most important contributor to the local economy providing "a regular job" for several individuals in IIFN fishing families (Jim Homstrom, interview 002, 2011). However, this livelihood was not without costs. Living the life of a commercial fisherman was labour-intensive, and several IIFN fishers repeatedly comment on how long the days were and that there was no time for breaks. They also stress the fact that in order to make a living at it, it had to be practiced in every season, as opposed to other land-based practices such as wild rice harvesting or hunting, which are seasonally-based practices. The consistency in work ethic that was required of a commercial fisher is reflected in the following statement made by one IIFN fisher:

> *"My dad used to always brag – he fished for, I don't know, 20 or 30 years and never missed a day. He would put his nets in the springtime and fish all the way until it froze…he never missed a day - sick or whatever - he was always there. But, for years he never did miss a day, as far as I know."*
>
> (Jim Holmstrom, interview 002, 2011)

This passage highlights the strong work ethic that was required of commercial fisherman. Throughout the commercial fishing period, this practice and work ethic was successfully passed on to children who grew up in fishing families and became commercial fishers themselves. For example, Wayne Holmstrom demonstrates the continuing tradition of the commercial fisher's strong work ethic when he describes his commercial fishing practice: "*yeah, it was a five-day week all summer and then on the weekends I'd be out there - right until freeze up. Right from spring, all of the year – holidays - really until I was uh 19.*" (Wayne Holmstrom, interview 001, 2011)

5.2.1 Commercial Fishing: An Intergenerational Practice

The majority of the IIFN fishers who were interviewed for this project began fishing as children, helping their parents with fishing duties. Many of them

reflected on commercial fishing as a family activity. Often the father, or mother, who held the most knowledge of fish movements and the lake's habitat, would choose the locations of where to set gill nets and when to pull the nets, while the children would be responsible for other duties, both while on the boat and back on land. For many children that grew up in fishing families, their duties were often processing fish for sale to fish buyers who would in turn sell the fish on international fish markets. This included cleaning fish, as well as packing them on ice in fish boxes to be transported to buyers.

Several contemporary IIFN community fishers suggested that their knowledge of fishing was gained through observations that were made while in the boat and out on the water with their parents. Knowledge about the location of different fish species during different seasons, fish movements, as well as how to set and pull nets was gained through direct observation and participation in activities. Most of the research participants did not reflect on specific teachings that were shared with them about how to set gill nets or how to be a successful commercial fisher, however, they all hold this fishing knowledge today. Many of them recounted the first time that they were told to go out to set and pull their own net. When they were told to do this, they were often not told where to go or how to do it. At that point in their lives, it was expected that the children should hold the knowledge of when, where and how to set the nets, and for how long to leave them out. Through participation in fishing activities, individuals obtained fishing knowledge from their parents:

> *"Yeah, me and my father. That's how we started. And he – you could say – he taught me 'the trade'. Taught me where the locations for the best fish and that. And then, after awhile I went out on my own – me and my brother."*
>
> (Oliver Pinesse, interview 004, 2011)

In the past, the practice of fishing was an important way for family members to transmit knowledge about the land and water to their children. By observing and helping out on fishing boats children learned the practice of fishing, which

equipped them with the knowledge to survive off the land and to provide a source of income for themselves and their families in the future. Some contemporary fishers commented on the financial independence that this practice provided during the commercial fishing period, which contributed to their overall sense of well-being. This is demonstrated by the comment made by Earl Fair, below:

> *"And my dad told me to go and get some walleyes. So I went and sat – he gave me a map and told me to sit 'here'…and I went and did it. That was the first time I was happy about myself. Learning how to set a net by myself out there – working. I didn't like it at first, but I figured it would probably be a way for me to make money down the road."*
>
> (Earl Fair, interview 003, 2011)

As children grew up and gained fishing knowledge, they began going out by themselves or with their siblings to catch fish for commercial sale. In fact, many of the contemporary IIFN fishers that practiced commercial fishing as adolescents were quite successful. Wayne Holmstrom provides a good example of this: *"Yeah, I was out by myself. On the big lake by myself and…14 foot boat and, all I could handle was 5 nets by myself and I did really well"* (Wayne Holmstrom, interview 001, 2011). Other contemporary IIFN fishers described going out with their brothers when they were between 14 – 18 years old and selling their catches to local buyers in Clearwater Bay (Vernon Fair, interview 005, 2011) and recounted stories where they required their brother's help to lift the nets and process the fish for sale (Jim Holmstrom, interview 002, 2011). In all of these stories, IIFN fishers commented on the fact that they would "share the profits" (Oliver Pinesse, interview 004, 2011). In this way, the commercial fishery served as a way to strengthen social cohesion within fishing families and provided an "honest" source of income.

Many contemporary IIFN fishers reflected that throughout the commercial fishing period on Shoal Lake, the entire community was busy. This was perceived

as beneficial because "everybody had something to do" and people "didn't have time to [mess] around" (Jim Mandamin, interview 009, 2011). By keeping people "busy", the commercial fishery promoted a healthy lifestyle that encouraged a strong work ethic and respect for older generations that were knowledgeable about the land and the water. By working hard and keeping busy with fishing duties the practice of fishing contributed greatly to the well-being of fishing families and the community as a whole by providing a variety of social and cultural benefits. Commercial fishing also contributed financially and was an essential source of subsistence for the community. IIFN fishers reflected on the fact that throughout the commercial fishing period on Shoal Lake, the community worked hard to sustain a complex subsistence economy that relied on a combination of country foods gathered from traditional resource harvesting practices and economic inputs from the commercial fisheries and wild rice harvest. The diversity of IIFN subsistence-based economy is described below:

> *"Before [the closure of the walleye fishery] everybody had to work. And we had these islands all planted [points in direction of Potato Islands and Garden Islands]. We used to plant…you had your produce, you had your hunting and you had your fishing."*
>
> (Jim Mandamin, interview 009, 2011)

By the late 1970s the economic inputs from the commercial fishery, which supported the local economy, would be in jeopardy as MNR implemented policies that would attempt to control fishing mortality. These included the implementation of catch quotas to reduce pressure on commercial fish species on Shoal Lake, particularly the walleye. This would greatly alter IIFN's local economy.

5.2.2 Commercial Catch Quotas

The Department of Fisheries and Oceans (DFO) usually implements commercial catch quotas through the Federal Fisheries Act of Commercial Fisheries, however

in the case of Ontario's fresh-water fisheries, MNR has full regulatory power. MNR first introduced a commercial catch quota on walleye in 1979, which limited the annual harvest of walleye on Shoal Lake to 146,000 lbs. MNR utilized Ryder's Morphoedaphic Index to determine the total allowable catch on Shoal Lake. This index is derived from two factors: the mean depth of the water body and the total dissolved solids in the water (Ryder 1965). It is used to estimate the total annual potential fish production or yield for a given lake (Ontario Ministry of Natural Resources 2004).

IIFN fishers suggest that in the time leading up to the implementation of the catch quota system, they did not receive any forewarning or formal consultation from MNR about their management plans. MNR officials suggest that several community meetings were held prior to the implementation of the catch quota system, however such meetings do not stand out in the memories of IIFN fishers. IIFN fishers recall that the quota system was regulated indirectly through fish buyers in the local area by restricting the amount of Shoal Lake walleye they were able to purchase. IIFN fishers were frustrated that the implementation of the quota system did not occur through direct communication with IIFN fisherman (Oliver Pinesse, interview 004, 2011).

Throughout the early 1980s MNR continued to lower commercial catch quotas as Shoal Lake fisheries studies were revealing rapid decreases in walleye populations. Between 1980 and 1983 the overall commercial fish harvest on Shoal Lake had decreased significantly, with the most drastic declines being to the commercial walleye harvest (see Table 4). By 1983 - the final year of the commercial walleye fishery - the total commercial fishing quota was reduced to 47, 950 lbs. Limiting the amount of fish that could be taken from Shoal Lake increased competition among local fishers and made it difficult for IIFN fishers to sustain a livelihood.

Table 4. Shoal Lake Commercial Fish Harvest - 1980 and 1983

Year	Commercial Harvest (lbs)			
	northern pike	lake whitefish	walleye	white suckers
1980	56,470	7,057	56,684	34,657
1983	20,962	4,625	9,919	7,441

Although decreases in walleye quotas may have provided some forewarning of the complete closure of the walleye fishery, when this occurred, it still came as a shock to IIFN fishers.

5.3 Closure of Commercial Walleye Fishery on Shoal Lake

With sustained fishing pressure and considerable declines in walleye population levels, in the spring of 1983 MNR shut down Shoal Lake's commercial fishery indefinitely. This came as a great shock to IIFN and would prove to impact the community financially, socially and culturally. The economic losses resulting from the closure of the Shoal Lake commercial fishery are highlighted in Table 5. It provides the estimated loss of commercial fishery landed value in 1999 dollars based on average quotas in the early 1980s.

Table 5. Estimated Loss of the Shoal Lake Commercial Fishery Closure

Fish Species	Catch (kg)	Estimated Value (CDN)
walleye	31,140	$124,560
northern pike	30,455	$57,865
lake whitefish	22,800	$43,320
black crappie	2,000	$8,400
"coarse fish"	41,300	$18,175
Total	127,695	$252,320

The commercial walleye fishery was the "bread and butter" of IIFN's local economy (Oliver Pinesse, interview 004, 2011), therefore, its closure was met

with great distress by the community. An IIFN fisher describes this sentiment in the following statement that recalls the day that the walleye fishery was closed:

> *"I was there when they closed the fishery. I wasn't very old – just in my teens. A lot of people were crying that day. It wasn't a good day for the community."*
>
> (Jim Mandamin, interview 009, 2011)

Emotions ran high in the community leaving some members depressed, while others were angered and began to organize protests in opposition of the commercial fishery closure. This included community protests at the MNR offices in Kenora and blockading the Shoal Lake road in order to prevent MNR employees from coming onto the reserve lands. Community fishers remember that *"there was a big dispute over [the closure] and the community – this community – ended up shutting the road down"* (Vernon Fair, interview 005, 2011). Community members also recall that at this time other IIFN members drove into Kenora to protest "*as a show of force to let MNR know that they had put a stop to their livelihood"* (Francine Lee, interview 006, 2011).

Unfortunately for IIFN, these protests did not result in the re-opening of the commercial fishery. Instead, IIFN fishers recall that shortly after the closure MNR began purchasing the commercial fishing licenses on Shoal Lake. Individual licenses held by non-aboriginal fishers were bought out by MNR, which provided them with some financial compensation. However, IIFN fishers did not hold individual fishing licenses, and therefore no financial compensation was provided to them. Several community members are still angered that no monetary compensation was provided to individual IIFN fishers after the closure of the commercial fishery (Oliver Pinesse, interview 004, 2011). One IIFN fisher describes his frustration relating to this phenomenon:

> *"Yeah, and [the closure of the commercial fishery] kind of…hurt us financially…the First Nations. And we wanted to be compensated for it. Yeah,*

like I wasn't compensated for it, my dad wasn't compensated for it. But all the non-aboriginal people were compensated for it."

(Oliver Pinesse, interview 004, 2011)

Throughout the 1980s all but two of the non-aboriginal commercial licenses were bought out by the MNR. The aboriginal license, which at the time of the closure was jointly owned by both IIFN and Shoal Lake #40, was subsequently divided into two separate aboriginal licenses for each band. Indian and Northern Affairs Canada purchased two of the non-aboriginal licenses on behalf of the two bands in an attempt to alleviate some of the hardships associated with the commercial walleye closure. Unfortunately, with commercial catch quotas for lake whitefish and northern pike in place, having "block" aboriginal licenses has dramatically decreased the amount of fish that individual IIFN fishers have been able to commercially harvest since the closure and has increased competition among IIFN fishers.

IIFN community fishers recounted a variety of ways that the closure of the commercial fishery impacted their well-being and changed their fishing practice. They suggested that they were left with no compensation and were forced to adapt to new livelihoods and drastic changes in their local economy. This would have long-lasting social and economic impacts on individual families and the community as whole, which are still being felt by the community today.

5.3.1 Adaptations to the Closure of the Commercial Walleye Fishery

When the commercial fishery on Shoal Lake was closed, fishing was a main source of livelihood for the IIFN community and the greatest contributor to the local economy. For IIFN fishers to be able to support their families, they were forced to adapt to these changing economic circumstances by searching for new sources of employment. Because the local IIFN economy relied almost entirely on the commercial walleye fishery, finding new forms of employment often required IIFN fishers to leave the community and their families. Many of them recounted

working all around Ontario and Manitoba, and all over Canada. This phenomenon is reflected in the following statement:

> *"They closed the lake and went to, uh, work off the reserve, or work off the lake, I guess. Went diamond drilling after that, no more fishing. Nothing here, eh. Then all around Canada for fifteen years."*
>
> (Wayne Holmstrom, interview 001, 2011)

Some IIFN fishers who left the community in search of jobs did find employment in other resource-based industries, such as forestry and mining. However, it was mostly the younger generations of IIFN fishers that were able to adapt to these changing circumstances. For the older generations, the life of a fisher was "all they knew" and when that was taken away from them, many were devastated and did not know how to cope (Oliver Pinesse, interview 004, 2011).

Several community members feel that because the community's main livelihood source was essentially taken away from them, training programs should have been offered for to facilitate transferring into other resource-based industries. One community member expresses this sentiment in the following statement:

> *"There was no formal training to re-educate the fisherman after they lost their livelihood. Yeah, so you were pretty well on your own, kind of like 'who cares'."*
>
> (Oliver Pinesse, interview 004, 2011)

Some IIFN fishers were not interested in pursuing other forms of employment and continued to fish commercially on other lakes in northwestern Ontario. However, there were various sacrifices associated with leaving the Shoal Lake to continue fishing. Individuals who partook in these activities had to work for other commercial fishermen on different lakes and would receive lower financial

returns for greater efforts. One IIFN fisher describes the irregularity and transient nature of these fishing efforts below:

> *"…I was fishing different lakes…But you would move to different lakes – you would have 5 different lakes – you'd fish this lake one year, every five years you'd just go around because it's a pain…to go out here and bring them over. Catch a certain amount here and there…"*
>
> (Jim Holmstrom, interview 002, 2011)

The difficulties associated with leaving the community to find work in other industries or commercial fishing on different lakes led IIFN fishers to entertain the idea of adapting their practice to the sport-fishing economy. While some IIFN fishers did find employment in this area, many found adapting from commercial to sport fishing to be difficult. Each fishing practice requires different skill sets, equipment and knowledge. IIFN fishers felt that training was required to aid in the transition from a commercial fisher to a fishing guide. IIFN fishers recall MNR providing some funding for the Band to set up training for IIFN members to become fishing guides, however, for various reasons they feel these efforts were largely unsuccessful. A number of community members were trained at this time; however, few of them actually secured employment as fishing guides. Several IIFN fishers criticized these training efforts as "band-aid" solutions that were destined to fail from the beginning. They perceived that the failure of this training was related to the fact that there was no established market for sports lodges on the lake at this time. As a result, IIFN members who were trained as fish guides could not find employment in local outfits and were again required to leave the community to obtain employment in this industry. The frustration with failed training attempts is highlighted in the following statement:

> *"I believe the Band did some training with people on guiding. And over the years, after awhile it gets to be a little monotonous, because you end up training a lot people for various activities – and they just been referred to as "band-aid" solutions, you know, just to kind of keep things rolling and keep*

the communities happy – "yeah, we'll throw some resources in there for training". But after training, they got to go out because it is not viable here for them after they are done."

(Vernon Fair, interview 005, 2011)

IIFN fishers acknowledge that some community members were able to take advantage of these training efforts, but emphasized that in order to do so they were again required to leave the community. For instance, some community members found employment as professional guides in neighbouring lakes, such as Lake of the Woods while others were forced to travel to northern Manitoba and as far as the Northwest Territories to obtain employment as fishing guides. It is clear that there were a variety of barriers for IIFN members to continue fishing as a livelihood, which highlights both the economic and social impacts that IIFN members endured from the commercial walleye fishery closure.

5.3.2 Social Impacts of the Commercial Walleye Closure

When IIFN fishers left the community to pursue new forms of employment and livelihoods, it also meant leaving their home, families and friends. This had considerable impact on the well-being of individual fishers and the community as a whole. It disrupted social networks that were reinforced through fishing practices and put stresses on the social cohesion of family groups. With many expert IIFN fishers out of the community, there were fewer individuals to convey fishing knowledge to younger generations. The IIFN fishers that were not able to find employment and remained in the community experienced severe socio-economic and cultural impacts. With a depressed local economy and an overall low morale in the community, many fishing families were unable to adapt to the changing circumstances and were left with no choice but to support themselves and their families through social assistance payments from the Government of Ontario. An IIFN community member highlights the impacts experienced from the introduction of transfer payments below:

"People were busy and then when they shut the commercial fishery down…that is when the welfare came. And that well pretty much was I guess the damage, eh…it started there… when they took the commercial fishing away, that is what a lot of people began to depend on, was welfare. Because not many people wanted to leave the community to go for work."

(Vernon Fair, interview 005, 2011)

IIFN fishers recall that it was not until the closure of the commercial walleye fishery that social assistance payments became widespread in the community. Its introduction would drastically impact the ability of community members to contribute to the local economy. Before the closure of the Shoal Lake commercial fishery, the community of IIFN was thriving and had a self-sustaining local economy. The practice of commercial fishing supported families financially, but was also an important practice for transmitting cultural knowledge that equipped younger generation with strong work ethic and the skills for survival. Being a commercial fisher or part of a commercial fishing family provided an important sense of identity and pride of what it was to be an Iskatewizaagegan Anishinaabeg. By taking away the commercial fishing practice, it was more difficult for children to learn the benefits of a hard work ethic or the important cultural teachings that were associated with this practice. A whole generation of commercial fishers was devastated by the destruction of their means of securing a livelihood. Forced to cope and survive by taking transfer payments from government, some IIFN fishers developed a sense of helplessness. This sense of helplessness trickled down to the younger generations and caused a whole host of social and psychological impacts that affected the next generation and can still be observed today.

5.3.3 Fishing for Subsistence Post Commercial Walleye Closure

In light of the social, psychological and economic impacts associated with the closure of the commercial fishery, many IIFN fishers continued to practice gill netting for subsistence purposes. This fishing practice allowed for important

cultural and spiritual teachings to continue and provided sustenance to family groups. Those who did continue fishing for subsistence suggest that walleye was harvested throughout the lake with the same effort as it had been in the past. In fact, many IIFN fishers who continued to net fish throughout this period did not perceive that there were drastic declines in walleye populations. This observation led many band members to question the reasons for the closure by MNR. An IIFN community fisher describes this sentiment:

> *"Basically after [the commercial walleye closure] we fished for food. We weren't allowed to sell it. We were catching pickerel the same way. As there was no decline…of the pickerel. Some were small, some were ten-pounders, twelve-pounders…some of them were one-pounders. And we were catching them. It did not seem like there was any effect on them."*
>
> (Oliver Pinesse, interview 004, 2011)

Recollections by many IIFN fishers' of the period leading up to and after the commercial walleye closure highlight the drastic changes to IIFN's local economy and fishing culture. In spite of these changes, the community began to adapt their fishing practices to meet its subsistence needs and it continued to provide a variety of material and non-material benefits. While it is necessary to acknowledge that the closure of the commercial fishery had a huge impact on the community, the following chapter will highlight the vibrancy and form of contemporary fishing practices that have emerged in the last three decades.

5.4 Chapter Summary

This chapter provided a brief history of IIFN fishing practices going back to the beginning of the commercial fishing on Shoal Lake in the 1920s. Included was a description of what it was like growing up in an IIFN commercial fishing family. The commercial fishery provided a source of livelihood and was associated with strong family connections and a sense of Iskatewizaagegan identity. Understanding how integral fishing was to IIFN families during this period also

sets the context for understanding the drastic social and cultural impacts that resulted from the closure of the commercial walleye fishery in the spring of 1983.

At the time of the closure, IIFN fishers were forced to adapt to changing economic circumstances, which often required their departure from the community in search of other resource-based employment. This disrupted the dissemination of fishing knowledge to younger generations and put stresses on the social cohesion of family groups. With a depressed local economy and an overall low morale in the community, many fishing families were unable to adapt to the changing circumstances and were left with no choice but to support themselves and their families through social assistance payments from the Government of Ontario. In spite of these challenges, today many of IIFN fishers practice a variety of fishing techniques for leisure, subsistence and commercial purposes. This background is necessary for understanding contemporary IIFN fishing practices and highlights the ways that the community has culturally adapted their fishing practices within changing political and economic circumstances.

CHAPTER 6: CONTEMPORARY ISKATEWIZAAGEGAN FISHING PRACTICE

6.1 Introduction

This chapter draws on data that was gathered from a community household survey, a series of semi-structured interviews and participation in fishing activities to provide a general overview of contemporary IIFN fishing practice. Quotas for northern pike and lake whitefish are still in effect for IIFN members living on Shoal Lake, therefore some commercial fishing activity does occur. However, the majority of IIFN fishers have adapted their fishing practice to a subsistence and leisure-based activity, which continues to provide a variety of benefits to the community. For descriptive purposes, contemporary IIFN fishing practices are presented in terms of their material and non-material benefits to the community. The discussion of the material benefits of contemporary IIFN fishing will draw heavily on quantitative data obtained from the household survey, while the non-material benefits will draw on qualitative data gathered from interviews and participation in fishing activities to provide an interpretive discussion of the social and cultural dimensions of contemporary IIFN fishing practice. The results presented in this chapter indicate that contemporary IIFN fishing practice contributes to the well-being of the community in a variety of ways.

6.2 Contemporary Iskatewizaagegan Fishing Practices:

Contemporary IIFN fishing practices are influenced by a variety of factors. A major impact has come as a result of policies and regulations regarding the management of resources within the Shoal Lake watershed. These include resource developments that have altered the hydrology of the lake, affected fish spawning habitat and impacted the quality of water. In particular, policies and regulations relating to the commercial fishing of walleye have drastically altered IIFN fishing practices throughout the twentieth century. As suggested by Koenig (2005) “insights into cases where fishing rights are disputed can contribute to a

better general understanding of the effects that outside forces can have on local communities, and how local communities can deal with them" (p.4). Today, fishing by IIFN members continues to be a widely practiced resource harvesting activity, which provides a variety of material (income / sustenance) and non-material (social / cultural) benefits to the community. Presented in this section are results from a community household survey that documents various aspects of contemporary fishing practices. This discussion begins by presenting general aspects of contemporary IIFN fishing practices and then describes more specific aspects of these practices. The final section provides an interpretive discussion of the social and cultural aspects of contemporary IIFN fishing practices to highlight its importance to well-being.

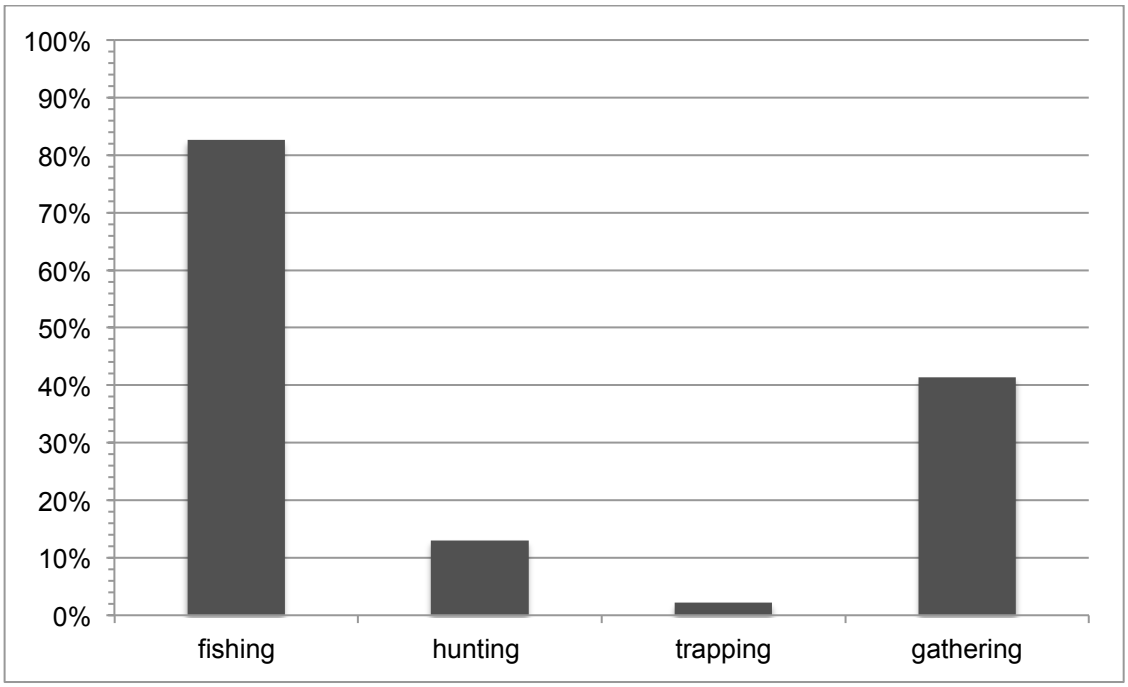
6.2.1 General Characteristics of Contemporary IIFN Fishing Practice

In this section, general characteristics of contemporary IIFN fishing practice include: how many people participate in fishing activities compared to other resource harvesting activities; the frequency of fishing; why band members fish; and lastly, the form that the fishing practice takes.

Table 4 presents the results of a household survey question that asked IIFN community members what resource harvesting activities had been undertaken in the summer of 2011.

Table 6. IIFN Participation in Resource Harvesting Activities

** (n = 50 for all tables presented in this chapter)*



This table indicates that 82% [standards deviation (SD) = 0.31] of respondents had practiced some form of fishing between July and September, 2011. Gathering plants and medicines was the second most frequently practiced resource harvesting activity during this period, at 41% (SD = 0.11). Some household survey participants suggest that climatic factors influence the frequency of plant gathering activities. Community members described that it was a bad year for harvesting plant foods, such as berries, because the summer of 2011 was very hot and dry. Hunting was only practiced by 13% (SD =0.05) of household survey respondents. The majority of hunting activities occur in the fall, which would account for low response rate for participating in hunting activities. Trapping is the least frequently practiced resource harvesting activity at 2% (SD=0.02). This result is consistent with community members' discussion of trapping activities documented in semi-structured interviews, which highlights that there is only a few people in the community that continue to trap today. This table clearly

indicates that fishing is practiced more frequently than other resource harvesting activities during the summer season.

To understand why fishing remains a widely practiced resource harvesting activity by IIFN members, we developed a household survey question that asked respondents to reflect on their perceived barriers to fishing activities.

Table 7. Barriers to Fishing Activities

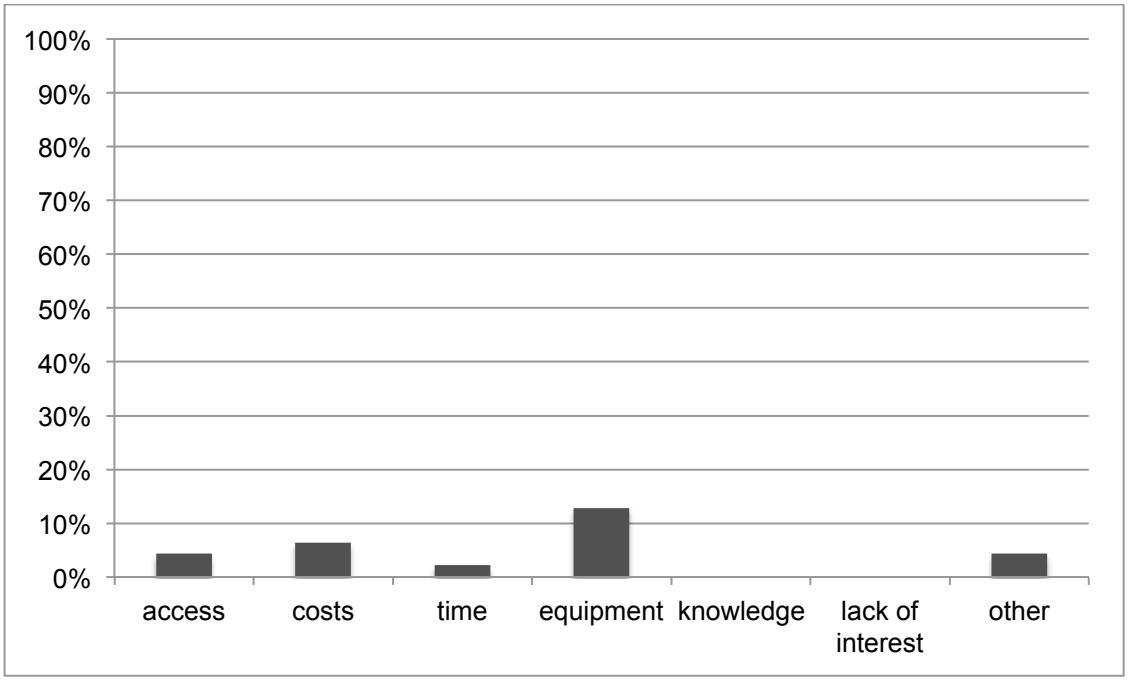


Table 7 highlights low response rates for each identified barrier, which suggests that overall IIFN members do not perceive that there are significant barriers to this practice. Of all factors, “equipment” is perceived as the most significant barrier to participation in fishing activities, accounting for only 13% (SD = 0.03) of respondents. The second most significant barrier is “costs”, however this only accounts for 6% (SD = 0.04) of total respondents. Other barriers that were noted are “access” and “other” 4% (SD = 0.03) and "time" at 2% (SD = 0.02). The fact that household survey results indicate relatively low response rates for all identified barriers indicates that IIFN members do not perceive many barriers to contemporary fishing practices.

To understand the frequency of fishing activities throughout the year, we asked a household survey question that targeted the seasonality of resource practices.

Table 8. Seasonality of Fishing Activities

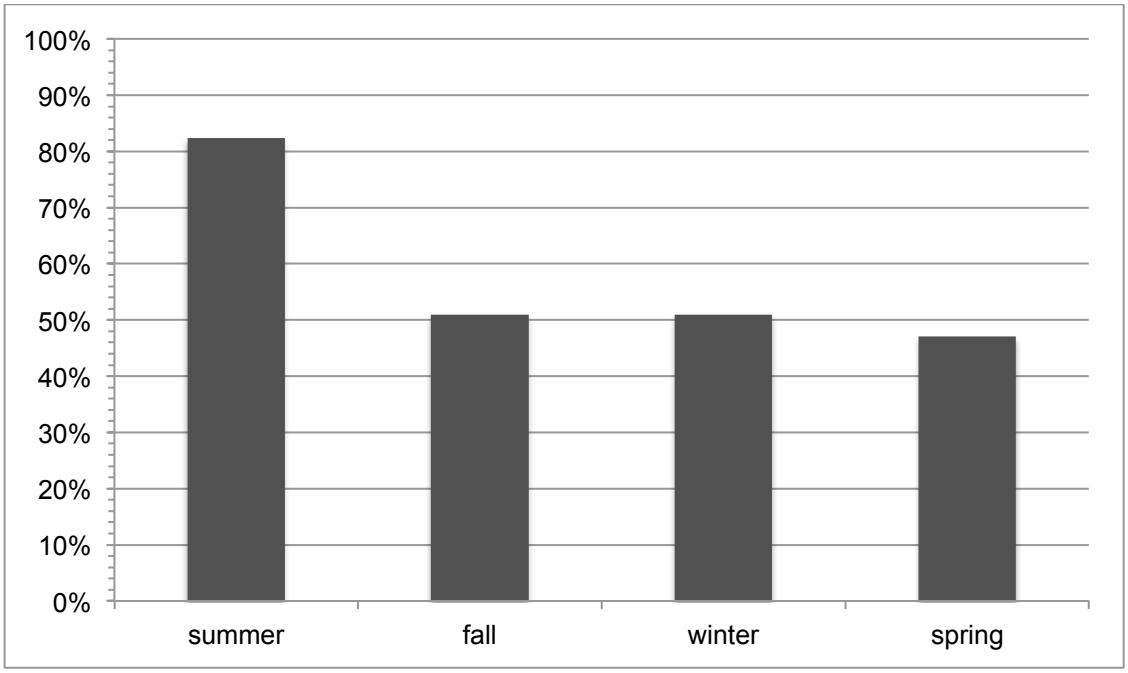


Table 8 presents the results from a household survey question that asked IIFN members what seasons they partake in fishing activities. Responses indicate that the most significant fishing activities occur in the summer, at 82% (SD = 0.31). Fifty one percent of respondents (SD = 0.14) indicate that they partake in fishing activities in both the fall and winter seasons respectively. Forty-seven percent of respondents (SD = 0.13) indicate that they partake in fishing activities in the spring. While the highest percentage of fishing activity occurs in the summer, these results indicate that a substantial proportion of the community partakes in fishing activities in every season. This suggests that IIFN can still very much be described as a fishing community in the sense that fishing activities occur throughout the entire year. Fishing therefore remains an important resource harvesting activity for IIFN households when compared to the seasonality of other resource harvesting practices, which are presented in the following tables (see Table 9, Table 10, Table 11).

Table 9. Seasonality of Hunting Activities

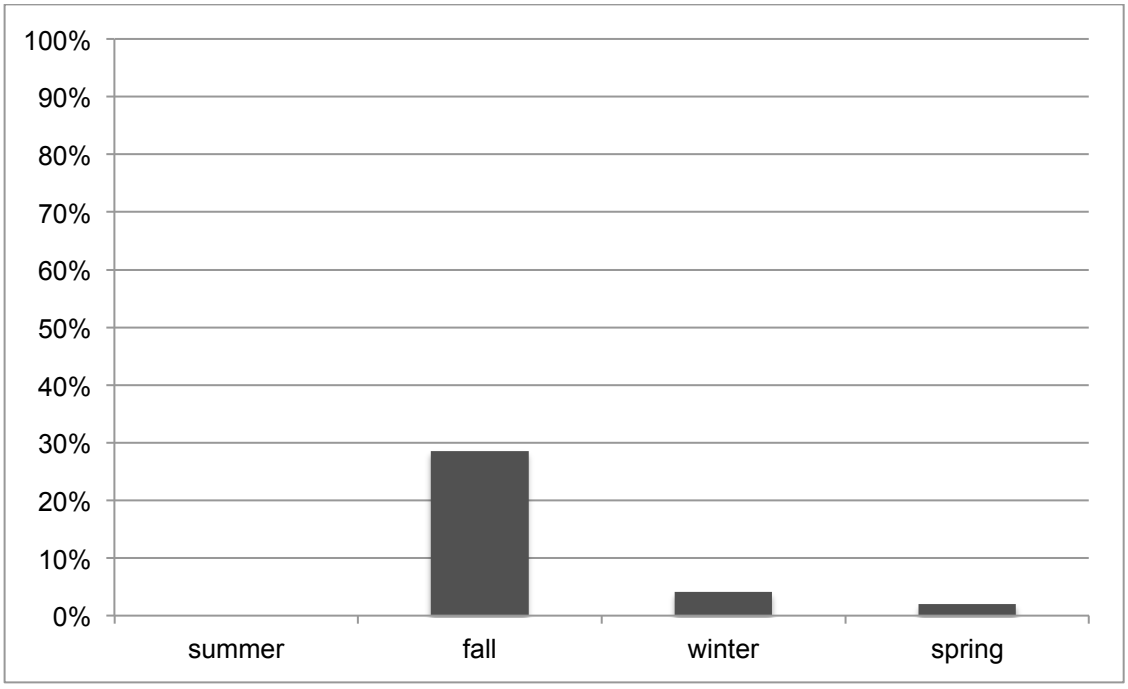


Table 9 highlights the high-degree of seasonality associated with IIFN hunting activities. Household survey results indicate that 29% (SD = 0.09) of community members partake in hunting activities in the fall. Only 4% (SD = 0.03) of members partake in this practice during the winter and 2% (SD = 0.02) partaking in spring hunts.

Table 10. Seasonality of Trapping Activities

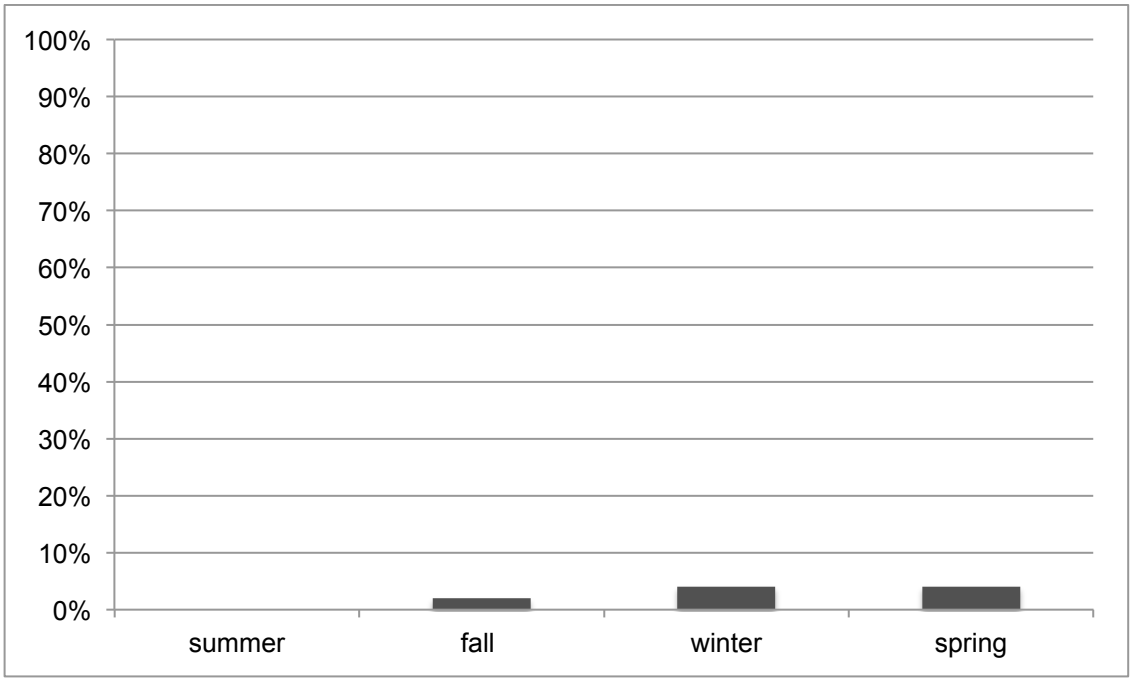


Table 10 highlights a low frequency of contemporary trapping activities by IIFN members. Results indicate that 0% of respondents had partaken in trapping activities during the summer of 2011. Only 2% (SD = 0.02) of respondents indicate that they partake in trapping activities in the fall, and 4% (SD = 0.03) indicate participation in these activities during the winter and spring seasons respectively.

Table 11. Seasonality of Gathering Plants and Medicines

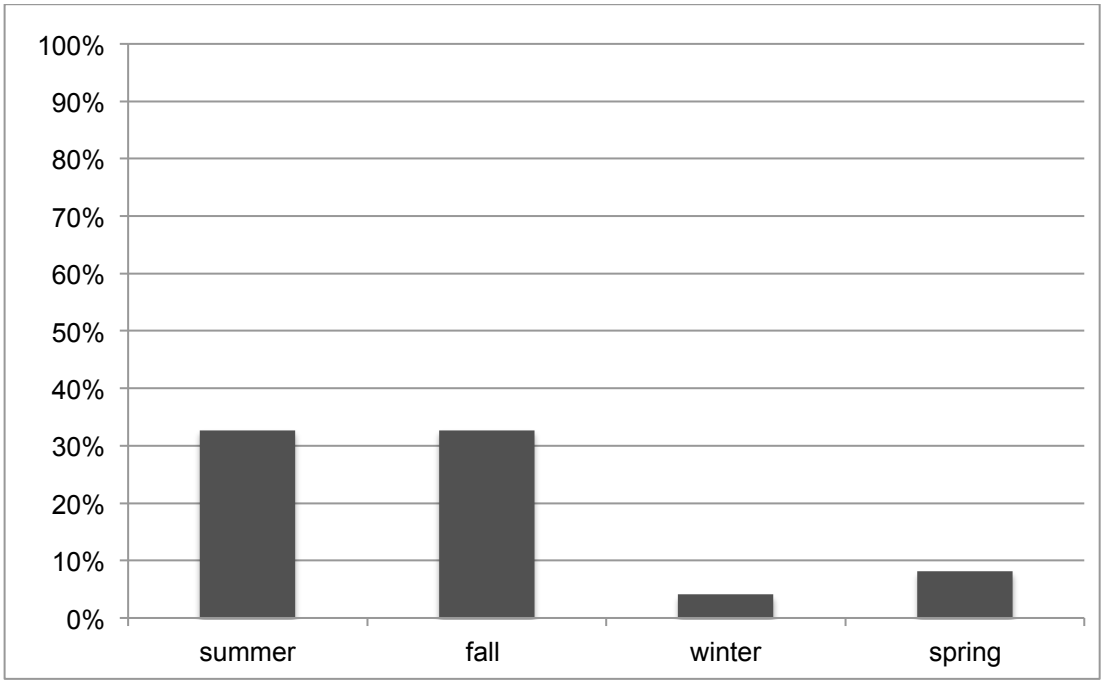


Table 11 presents the results from a household survey question asking IIFN members the seasons that they gather plants and medicines. Results indicate that 48% of respondents have partaken in plant gathering activities during the summer and fall respectively (SD = 0.1). Four percent (SD = 0.03) of respondents indicate that they gather plants and medicines in the winter, and 9% (SD = 0.04) indicate that they partake in plant gathering activities in the spring. This demonstrates that plant-gathering activities take place primarily in summer and fall seasons, which suggests some degree of seasonality. It highlights that a significant number of IIFN members partake in contemporary plant gathering activities in comparison to other resource harvesting activities.

6.2.2 Observations of Household Survey Results

A few general observations can be made from the results presented above. Firstly, these results suggest that during the summer of 2011 there were more IIFN households partaking in fishing activities than any other resource harvesting practice. Secondly, the results indicate that fishing is a resource harvesting activity that is practiced by a significant number of households throughout every season, whereas other activities show a higher degree of seasonality. These observations suggest that fishing is an important resource activity for IIFN households simply because it is a widely practiced activity. The high degree of participation in this activity suggests that it must offer various benefits to the community. The following section will provide specific information on the material benefits of contemporary IIFN fishing practices, including the frequency of fishing practices and the consumption of fish.

6.3 MATERIAL BENEFITS OF CONTEMPORARAY IIFN FISHING PRACTICE

As highlighted in the previous section, household survey results suggest that fishing remains an important resource harvesting activity for the community and is practiced by many households in the community during every season. This section will present the material benefits of contemporary IIFN fishing practice by describing first the dietary contributions of subsistence fishing practices. In order to describe these practices in detail, both gill netting and angling techniques will be discussed. IIFN contemporary subsistence fishery practice will be presented using a combination of descriptive statistics obtained from the household survey data and information collected from semi-structured interviews. The majority of this section will focus on walleye and lake whitefish, as they have been identified as the most widely harvested and consumed fish species. Lake whitefish are also the only species that are harvested commercially by IIFN fishers. Bass species are discussed as an important resource for sport and leisure fishing practices. Contributions of the commercial fishery will draw

on IIFN fishers perspectives obtained from open-ended and semi-structured interviews.

Tables 12 and 13 provide detailed information on the frequency of fishing activities and the reasons why people partake in these practices.

Table 12. Frequency of Fishing Activities

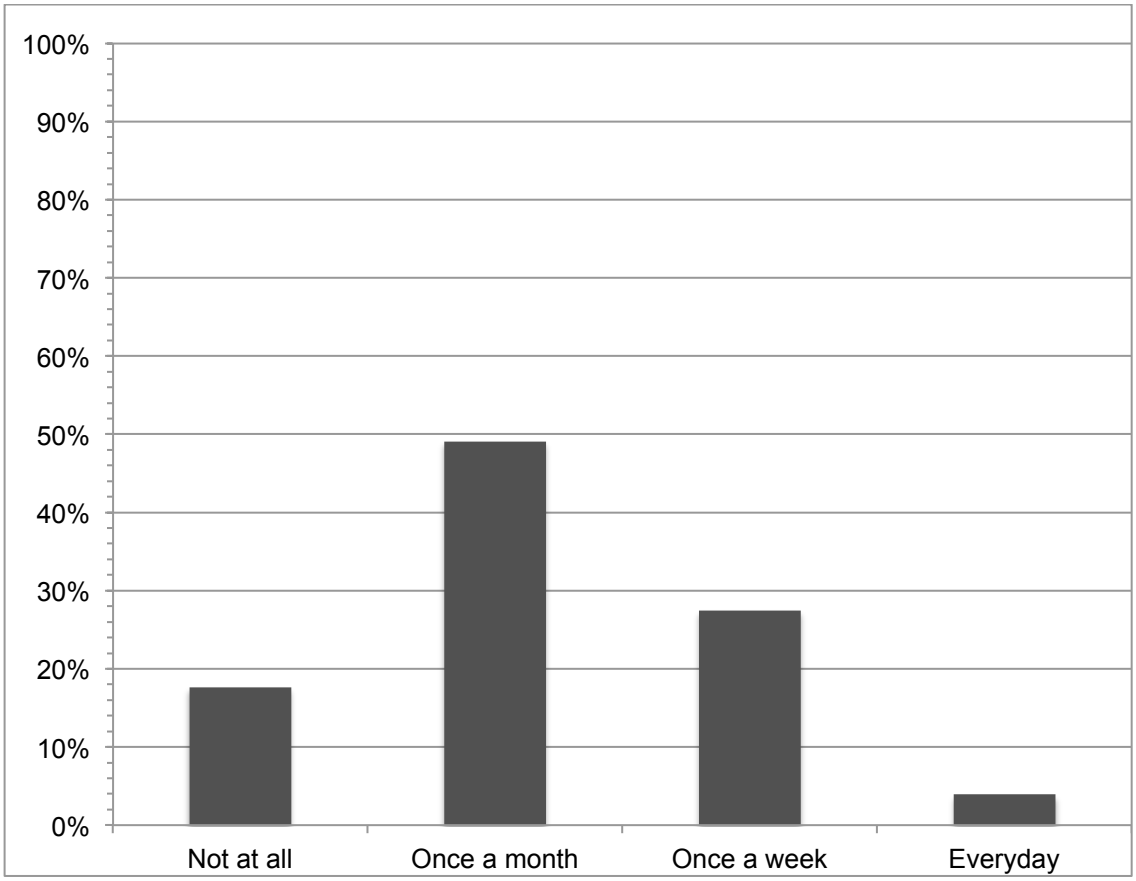


Table 12 presents the results from a household survey question asking IIFN members how often they partake in fishing activities. These results demonstrate that most of respondents fish "once a month" (49%) (SD = 0.14). Just over a quarter of respondents (27%) (SD = 0.09) of respondents fish "once a week" and approximately 5% (SD=0.03) of respondents fish "everyday". Only, 17% percent (SD = 0.07) of the respondents did not fish at all throughout the summer of 2011. These results suggest that for the vast majority of IIFN members, contemporary fishing practices do not provide a source of livelihood as only small percentages

partake in fishing activities on a daily basis. However, fishing is still a widely practiced activity as the vast majority of respondents did indicate that they partake in fishing activities on a casual basis ("once a week" and "once a month"). These results beg the following question: *if fishing does not provide a source of livelihood for most community members, why do community members continue to fish*? While there are a variety of factors that must be accounted for in order to attempt to answer such a complex question, the descriptive data highlighted in Table 13, provides some insight into this question.

Table 13. Purpose of Fishing

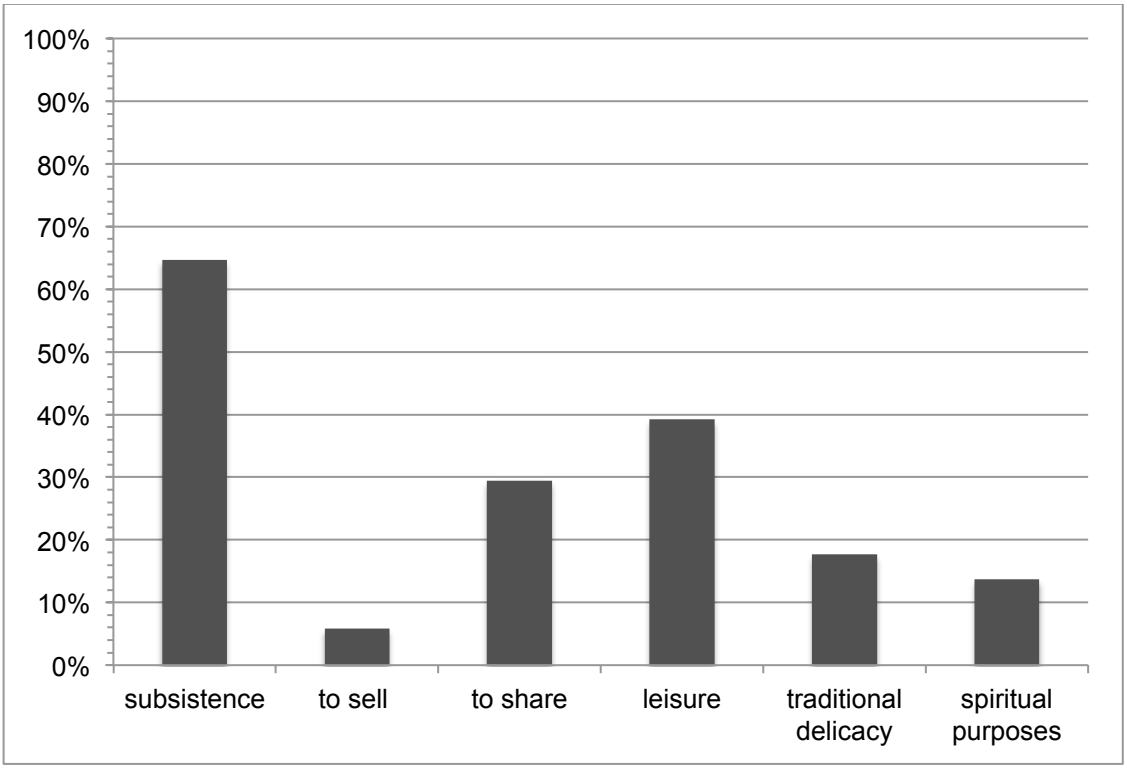


Table 13 presents results from a household survey question asking IIFN community members why they partake in fishing activities. The categories for this question were developed in collaboration with community members who grew up in fishing families and continue to participate in fishing activities today. This provides some confidence that they reflect what community fishers feel are the main reasons for partaking in fishing activities. The results from this question

indicate that 65% (SD = 0.19) of the respondents characterize their fishing practice as “subsistence”. The second most significant response is “leisure”, which accounted for 39% of responses (SD = 0.11). Sharing was also a significant variable, which accounted for 29% of responses (SD = 0.09). The next most significant responses were traditional delicacy at 18% (SD = 0.07) and spiritual purposes at 14% (SD = 0.06). Another significant response was that only 6% (SD = 0.04) of respondents partake in fishing practices to sell their fish.

The low proportion of community members that currently partake in fishing practices to sell to markets reflects the drastic decrease in commercial fishing activities that resulted from the closure of the walleye fishery in 1983. Only 6% of respondents indicated that they harvest fish for sale, which highlights a low participation by IIFN members in the commercial harvest of lake whitefish. While quotas for northern pike exist on Shoal Lake, no IIFN fishers recalled participating in the commercial sale of northern pike. The results presented in this table highlight that IIFN have adapted its fishing practices to changing economic, political and environmental factors and that contemporary IIFN fishing activities fulfill subsistence, leisure and various cultural needs. IIFN contemporary fishing practices contribute a variety of material benefits to the community, including significant contributions to IIFN members diet.

6.3.1 Contemporary Subsistence Fishing Practices

The household survey results presented in the following three tables (Tables 14, 15 and 16) provide detailed information about the material benefits that are enjoyed through the consumption of fish. These tables present results on: what fish species are being consumed by IIFN members; preferred species for consumption; and, the frequency particular fish species are consumed. Also presented in this section are the methods that are used to harvest fish for consumption, including both angling and gill netting techniques.

Table 14. Species Consumed in Summer 2011

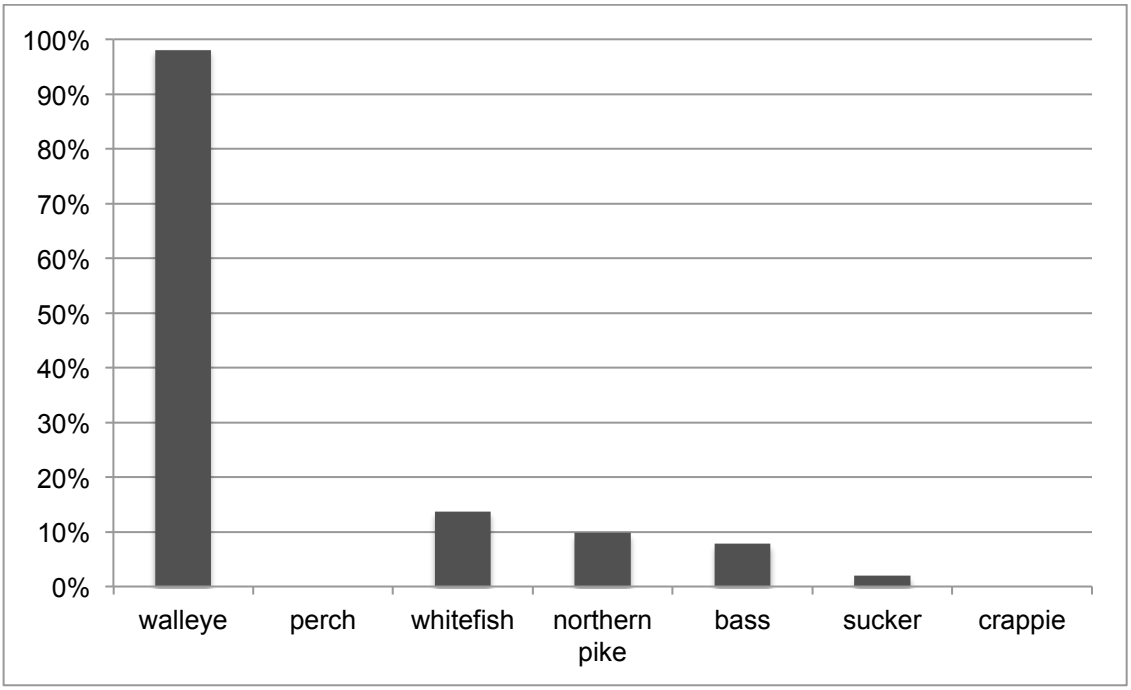


Table 14 presents the results of a household survey question that asked respondents what fish species they consumed during the summer of 2011. A significant result is that 98% (SD = 1) of respondents had consumed walleye during this period. Other species that were consumed are as follows: whitefish 16% (SD = 0.06); northern pike 11% (SD = 0.05); and smallmouth bass *(Micropterus dolomieu)* / largemouth bass *(Micropterus salmoides)* 9% (SD = 0.04). The two bass species were not distinguished in the household survey because community researchers believed that IIFN fishers utilize these species for the same purposes. These results indicate that during the summer walleye is the preferred species for consumption, and that virtually every IIFN household consumes this fish species. It should be noted however that several household survey respondents suggested that lake whitefish is also an important subsistence fish, but it is consumed more regularly in late fall and winter seasons.

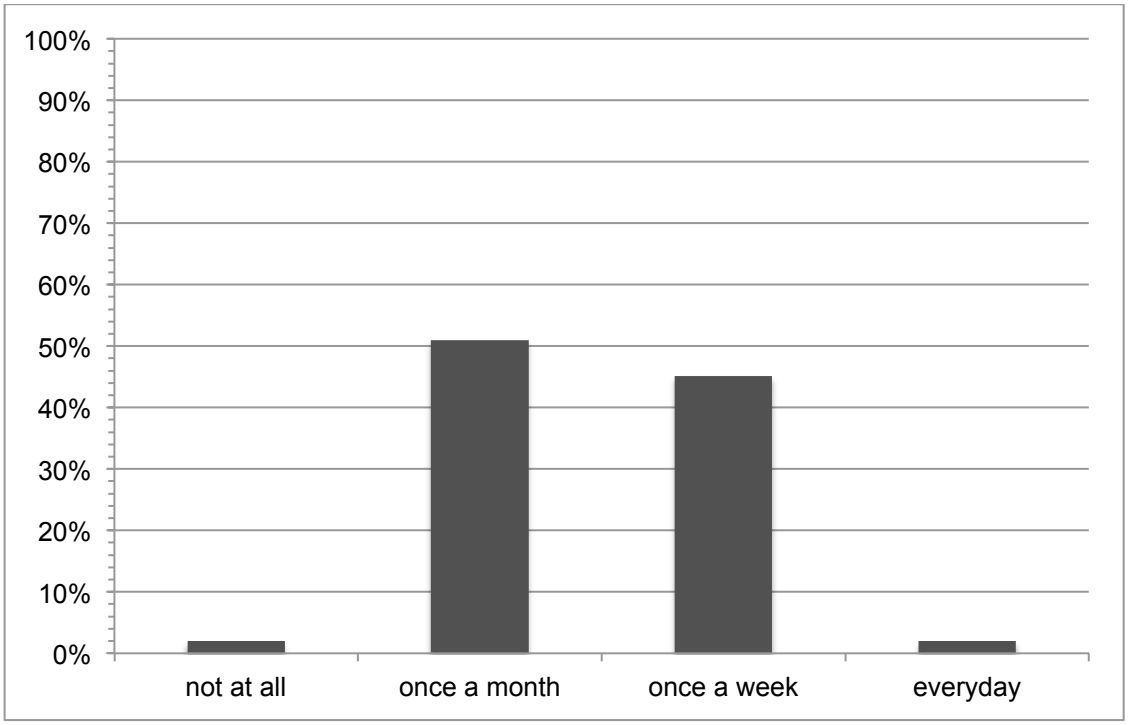
Similarly, semi-structured interviews with IIFN fishers revealed that many IIFN fishers consider white sucker to be a traditional delicacy and a highly preferred

food source (Jim Mandamin, interview 009, 2011). Because white suckers are typically harvested in the springtime, the preference for consuming white sucker were not significant in the household survey results, which indicate that it was consumed by 2% (SD = 0.2) of respondents in the summer of 2011. However, interviews with IIFN fishers indicate that this is a delicacy. It is usually prepared by smoking the fish and has been given the nickname "Shoal Lake bacon". Several IIFN members reflected on their memories of consuming "Shoal Lake bacon" in the past, which is highlighted in the following passage:

> *"Yeah, I remember my mother teaching us how to make smoked…smoked suckers. That's the only fish they – that I recall being smoked way back then… Yeah, I remember Shoal Lake bacon. I haven't had any for a while. There are still people here that smoke the fish but they add different flavors to it…I prefer the plain simple - plain old Shoal Lake bacon with no flavoring added."* (Francine Lee, interview 006, 2011)

Household surveys conducted for fall, spring and winter seasons will likely help confirm seasonality of consuming particular fish species, such as white sucker, lake whitefish and walleye.

Table 15. Frequency of Walleye Consumption in Summer 2011



To understand the contribution of walleye to IIFN households' summer diet, we developed a household survey question that asked respondents the frequency that they consumed walleye in the summer of 2011. Table 15 presents the results of this survey question. Of the four options presented above ("not at all", "once a month", "once a week", "everyday"), respondents were asked to select the option that best described their frequency of walleye consumption. Fifty-one percent (SD = 0.14) of respondents indicate that their household consumes walleye approximately "once a month", while 45% (SD = 0.13) of respondents indicate that their household consumes walleye "once a week". Two percent (SD = 0.02) of respondents indicate that they consumed fish "everyday" or "not at all", respectively. These results suggest that walleye is consumed regularly by most households. However, for some households it may not be a staple of contemporary IIFN diet. To determine whether or not these results relate to IIFN households ability to obtain walleye or reflect more their desire to consume walleye, we asked respondents about their preference for consuming walleye.

Table 16. Preference for Consuming Walleye

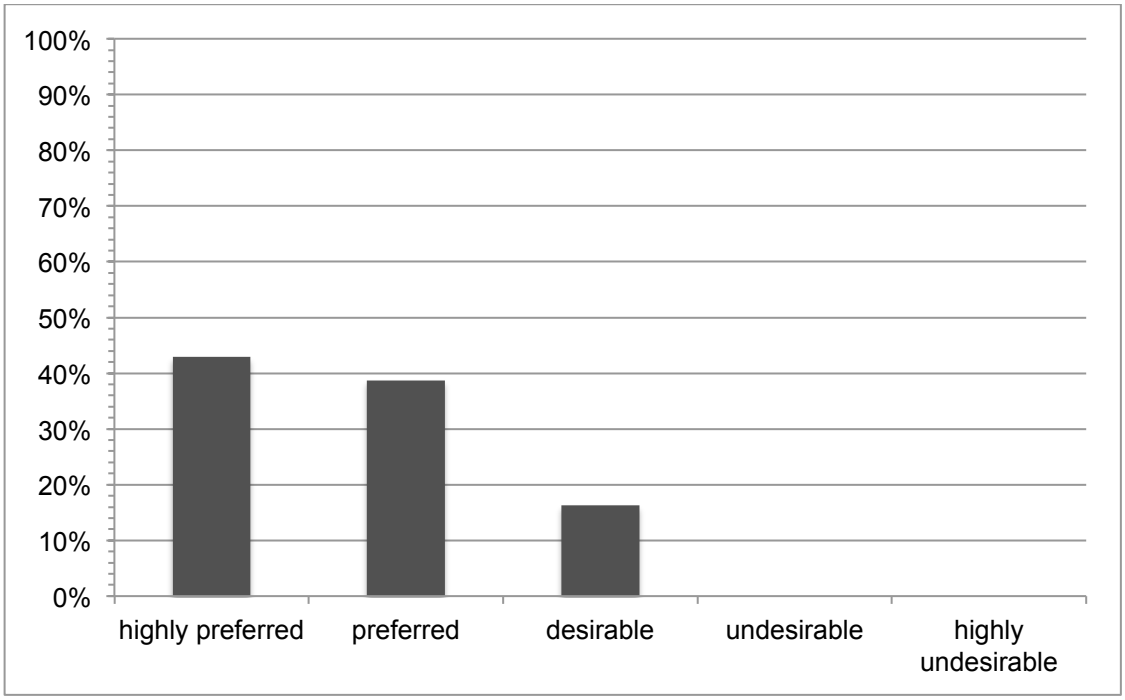


Table 16 presents results from a household survey question that asked IIFN members about their preference for consuming walleye. The highest proportion of respondents indicate that walleye is a "highly preferred" food at 43% (SD = 0.12). The second highest proportion of respondents indicate that walleye is a "preferred" food source at 39% (SD = 0.11) and the remaining 16% (SD = 0.06) characterize walleye as "desirable". No respondents characterize walleye as "undesirable" or "highly undesirable". These results suggest that, in addition to walleye being the fish species that is consumed most by IIFN members, it is also a highly preferred food source.

To understand the preference for consuming walleye relative to other subsistence fish species, household survey questions asked respondents to reflect on their preference of other species they consumed.

Table 17. Preference for Consuming Lake Whitefish

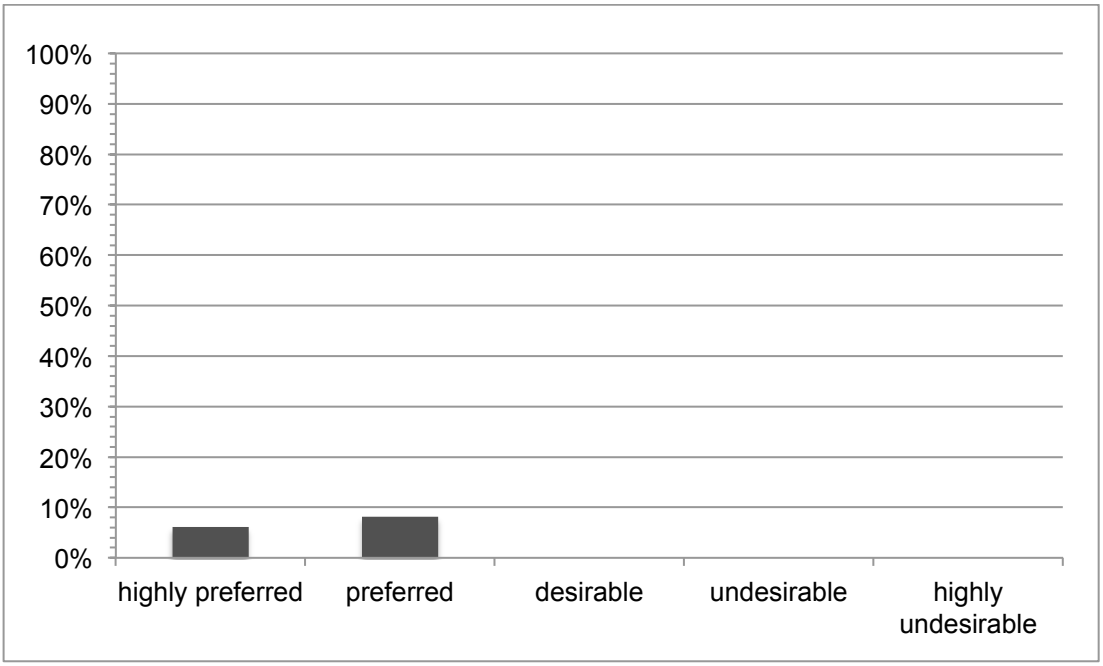


Table 17 highlights IIFN households' preference for consuming lake whitefish. The amount of respondents that consumed lake whitefish in the summer of 2011 is considerably lower than those who consumed walleye, which is consistent with IIFN comments that lake whitefish is consumed more regularly during fall and winter months than during the summer. The overall low response rate in this table therefore does not reflect the community's overall preference for consuming this species. In fact, all of the respondents indicated that lake whitefish was either a "highly preferred" 6% (SD = 0.04), or "preferred" 8% (SD = 0.04) food source. One IIFN fisher suggested that in the summer lake whitefish is most easily harvested using gill nets rather than fishing rods, because they tend to stay in the deeper holes and feed on the lake bottom (Jim Holmstrom, interview 002, 2011). As highlighted by the following section, decreased gill netting activity may also be a contributing factor to lower levels of lake whitefish consumption in during the summer.

6.3.2 Fishing Gear Utilized

This section draws on household survey data and semi-structured interview data to document the equipment and gear utilized in contemporary IIFN fishing practices. Table 18 provides relevant descriptive statistical data on the type of fishing gear that is used by IIFN fishers. This information is also complemented by IIFN members' reflections on gill netting and angling techniques and their importance for contributing to IIFN subsistence.

Table 18. Fishing Gear Utilized

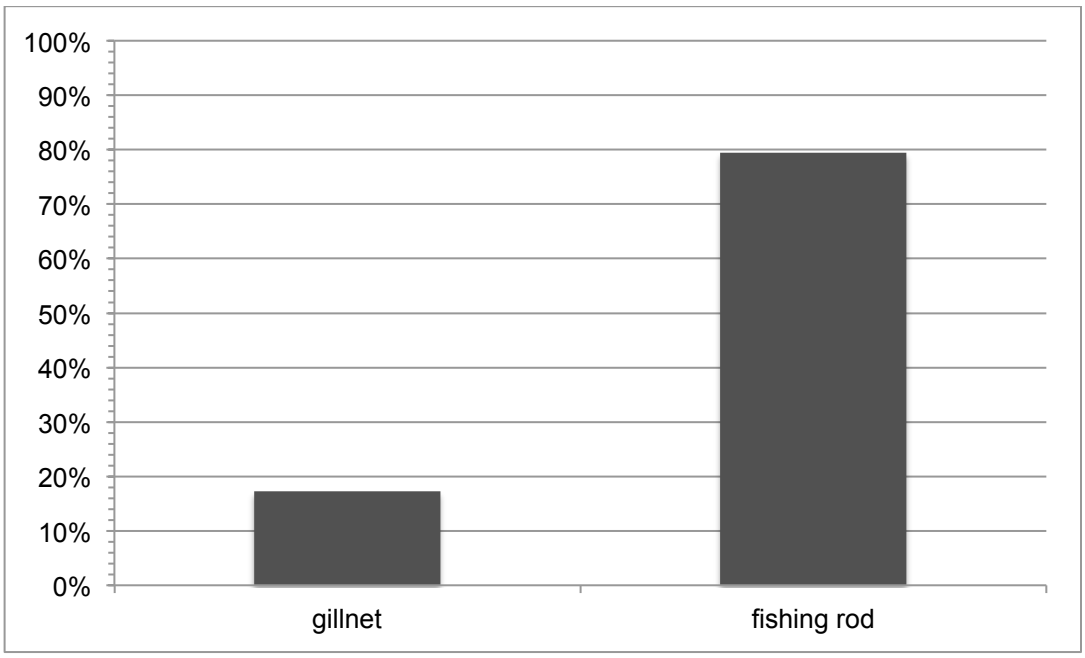


Table 18 presents the results of a household survey question that asked IIFN members what type of fishing gear they utilized to harvest fish in the summer of 2011. Results indicate that 79% (SD = 0.06) of IIFN fishers use fishing rods to harvest fish in the summer and 17% (SD = 0.3) use gill nets. The household survey results also indicate that 67% of respondents utilize both gill nets and fishing rods on a regular basis and both are used for subsistence purposes. The utilization of both forms of fishing equipment (gill nets and fishing rods) was also reflected in an interview with an IIFN fisher that explained that people will fish for subsistence *"either by rod, or by putting a fishing net out…[and that] even with*

a rod you'd be catching 30 – 40 pickerel (walleye)" (Jim Mandamin, interview 009, 2011).

Gill netting can be a more efficient way to catch fish, however expert fishers who have detailed knowledge of the location of fish according to the time of the day or the particular season, are able to catch large volumes of fish through angling techniques as well. Multiple IIFN fishers explained that it was not uncommon to go out and catch 10 to 20 walleye in a single summer evening if they wanted to, and several indicated that even if they are not specifically fishing for subsistence, if they catch a walleye, they would likely take it home to eat (Vernon Fair, interview 005, 2011; Randy Paishk, interview 008, 2011). During my participation in fishing activities, there were several times that this many fish were caught in a single evening, many of which were taken home to eat.

The household survey results indicate that in the summer, a higher proportion of IIFN fishers rely on angling techniques to harvest fish for subsistence. In order to harvest fish with a net, people must have access to a gill net as well as a boat and motor. As highlighted by Table 7, equipment is the most significant barrier to fishing activities and discussions with IIFN community members indicated that many individuals do not have access to a boat. These members can still partake in fishing activities by casting a fishing rod from land, which may explain why the vast majority of IIFN members harvest fish using fishing rods. With very few community members partaking in the commercial fishing activities, many households no longer own gill nets and therefore fishing with a rod may be the only method that is available.

Several IIFN fishers that I interviewed suggested that gill netting is still an important fishing method for subsistence, and is practiced in every season. Because Shoal Lake's fish populations are so high IIFN fishers are harvesting fish with gill nets all year around (Wayne Holmstrom, interview 001, 2011). In fact, the increased amount of walleye in the lake has forced IIFN fishers to adapt their gill netting practice to ensure that not too many fish are caught. They do not

want to see undue waste. In the past, IIFN fishers would regularly leave their gill nets out over night, however, now it is perceived that there are too many fish to do this. Today, gill nets are often only left out for a couple of hours, and are sometimes lifted almost immediately after they are set. One community fisher describes this phenomenon below:

> *"Middle of summer I'll put a pickerel net out, four and a quarter…or four inch mesh. And I'll set my net and have a cigarette and I'll start lifting it."* (Wayne Holmstrom, interview 001, 2011)

While many IIFN fishers emphasize that gill nets are used throughout the year to harvest fish for subsistence, household survey results indicate that the majority of IIFN fishers utilize fishing rods to harvest fish. In addition, interviews with IIFN fishers suggest that gill netting was practiced more frequently and by more people in the past when commercial activities were more prevalent.

6.3.3 Contemporary Commercial Fishing Practices

As indicated in Table 13, there is a relatively small proportion of IIFN fishers that harvest fish for sale to commercial fishing markets. IIFN fishers suggest that Shoal Lake commercial fishing quotas exist for lake whitefish, northern pike and black crappie *(Pomoxis nigromaculatus).* However, most IIFN commercial fishers participate mainly in the commercial harvest of lake whitefish. The main reason for not participating in the commercial harvest of northern pike is that the price for them is too low to make it viable. Similarly, IIFN fishers do not participate in the commercial black crappie fishery because it is a very small quota (500 lbs) and Shoal Lake Band #40 owns the license for it (Jim Holmstrom, interview 002, 2011). The current quota for whitefish is 25,000 lbs for both IIFN (Band # 39) and Band #40.

The participation of IIFN fishers in the commercial harvest of lake whitefish is limited as a result of there being one Band license for the entire community. With commercial catch of lake whitefish regulated under commercial quota, fishing

continues only until the quota for the Band license is filled. As a result, the IIFN commercial lake whitefish practice is a "race to the finish" in terms of how many fish each individual fisher can catch until the quota is filled up (Vernon Fair, interview 005, 2011). Interviews with IIFN community fishers revealed some frustration with the fact that the lake whitefish season usually only lasts a matter of weeks. This is highlighted below:

> *"Yeah, I think that's their quota. And there's no control. If one individual monopolizes the quota, there's not much you can do about it. It's just a free for all… just a race to the finish. And that's what makes it even more difficult because the lack of control doesn't really give us much credibility with the Ministry, eh."* (Vernon Fair, interview 005, 2011)

Commercial harvest of lake whitefish intensifies in the late fall, particularly in the months of October and November as water temperatures decrease. IIFN fishing efforts at this time tend to be focussed on the north end of Shoal Lake in and around Indian Bay. Interviews with IIFN fishers revealed that the majority of lake whitefish enter into Indian Bay to spawn in the fall. This occurs because it is shallower in Indian Bay and the water temperature drops quicker than other deeper parts of the lake. As a result, during the fall months many community fishers begin setting their nets in various locations throughout Indian Bay.

Another factor that limits community participation in commercial harvest of lake whitefish is that the sale of whitefish is limited to the fall spawning season. Community fishers stressed the fact that whitefish spawn at this time all across the country, and therefore the markets get flooded with the sale of whitefish at this time of the year. As result, the demand for whitefish goes down and the price decreases rapidly, causing a considerably less lucrative return on the commercial sale of whitefish. This sentiment is described below:

> *"They're only allowed to fish [commercially for whitefish] in the fall. It's supposed to be regulated for the fall fishery only. And that's when the market…that's when all the fish - all across Canada - are all spawning, and*

> *all the whitefish are spawning. So the market gets flooded and the price goes boom-down."* (Jim Holmstrom, interview 002, 2011)

The commercial sale of whitefish is also limited to whether or not there are fish buyers to whom they can sell their fish. During the fall of 2011, a number of IIFN fishers commented on the fact that there was nowhere to sell their fish, so why bother harvesting them for sale.

In spite of this perception, some fishers expressed that there are other species that could be commercially viable, for instance, walleye, white sucker and crappie. Shoal Lake Band # 40 has exclusive rights to the commercial sale of crappie, however, the quota for this species is too low to make it economically viable:

> *"There's a big – a good bunch of crappies in here. But you're only allowed 500 pounds a year. And Band #40 has the license for that…Yeah, it's five hundred pounds of crappies. And that ain't nothing."* (Jim Holmstrom, interview 002, 2011)

IIFN fishers stress the fact that for a commercial fishing livelihood to be economically viable, the walleye fishery would have to be re-opened. Many individuals who have secure full-time employment stated that they would leave their current job if they were able to return to the life of a commercial fisher. IIFN fishers also highlighted the fact that if a commercial walleye fishery opened it would benefit the welfare of the community in a variety of ways and would help "*getting an economy rolling again for the people in the community"* (Vernon Fair, interview 005, 2011). This suggests that in addition to the material benefits associated with fishing, there is something in the livelihood of a fisher that contributes greatly to the community's well-being.

6.3.4 Contemporary IIFN Fishing Guides

Today there are a number of IIFN fishers who are hired as sports fishing guides by the privately owned Shoal Lake Lodge, which opened in 2005. At least one

IIFN member is a regular employee who works for this sports fishing lodge throughout its operational season (spring, summer and fall). Other IIFN fishers are hired as fishing guides on a temporary basis. Some IIFN fishers take this work solely for the fact that it provides some supplementary income, while others explained that they enjoy spending days out on the lake interacting with tourists from all over North America (Vernon Fair, interview 005, 2011). Those who guide solely for the money are generally IIFN fishers who still partake in commercial fishing activities. Others, who have adopted their fishing practice to a leisure or sport / subsistence activity, seem to enjoy aspects of guiding and welcome the supplementary income it provides.

6.4 NON-MATERIAL BENEFITS OF CONTEMPORARY IIFN FISHING PRACTICE

This section presents non-material benefits of contemporary IIFN practice from the perspective of contemporary IIFN fishers. This includes a discussion of social, cultural and symbolic ways that IIFN fishing practice contributes to the community's well-being. It will begin with a discussion of leisure and sport IIFN fishing practices and will then provide an interpretive account of some of the social, cultural and symbolic aspects of these practices drawing off three central themes that emerged from the interview data. These include: "being out on the lake": conveying cultural knowledge; and, acts of sharing. "Being out on the lake" is essential for IIFN to transmit knowledge about resource harvesting activities and other aspects of IIFN culture and spirituality. Through this act, individuals are able to strengthen their relationships with the living world and reinforce individuals' sense of Iskatewizaagegan identity. Several non-material benefits of fishing practices also occur off the lake. In particular, the act of sharing fish offers various social and cultural benefits to family and friends. Harvesting the fish, preparing the meals and sharing the harvest is essential for strengthening social networks and reinforcing community social cohesion of family groups and the broader community.

6.4.1 Fishing for Leisure and Sport

Household survey results indicate that 47% (SD = 0.11) of respondents characterize their fishing practice as a "leisure" activity. This is the second most significant response behind "subsistence" at 65% (SD = 0.19), which suggests that many IIFN members partake in fishing activities for the various non-material benefits that it provides. The species that are most often targeted during leisure fishing activities is smallmouth bass *(Micropterus dolomieu)* and largemouth bass *(Micropterus salmoides)*. Bass populations have been steadily increasing since the opening of Ash Rapids, and as a result, many members target bass when partaking in leisure or sport fishing activities. IIFN fishers characterize this form of fishing practice as a way to enjoy an afternoon or evening out on the lake. This is a different activity than fishing for subsistence fish, such as walleye. IIFN fishers suggest that the harvest of walleye is done for consumption, while bass fishing activities are often described as “catch and release”. However, it should be noted that these two practices often overlap. For example, IIFN fishers have noted that while they are often out on the lake targeting bass populations, they end up catching walleye. Community fishers attribute this to the fact that walleye have become so abundant, and so large that they are pushing the bass out of the regular bass locations (Bolton field notes 2011). In the summer of 2011, community fishers, cottagers and a fisheries biologist that was working for the band all observed this phenomenon (Bolton field notes 2011). This is described in the following statement:

> *“We’ll go target bass and we’re always looking in the shallows first. You know, just see where they are - see where they’re moving. And if they’re not, you just gradually move to deeper and deeper water and that. You know, different structure and see where they’re at. See if you can find them. And it seems like, no matter where you go to target bass you’re running into the walleye.”*
>
> (Brennan Wapioke, interview 007, 2011)

This highlights the recent increases in walleye populations and how it is influencing leisure and sport fishing activities. While some IIFN fishers generally characterize their fishing practice as catch and release, they now often find themselves taking home walleye because they are difficult to avoid. Regardless, many contemporary IIFN fishers partake in these activities for leisure purposes.

Bass fishing derbies and tournaments are organized throughout the year. Individual community members from both IIFN and Shoal Lake Band #40 organize small fishing tournaments or derbies, which involve a modest "buy in". These events provide small cash prizes for the winner, however, they also offer a variety of non-material benefits to the community members. They provide an environment for IIFN community members to spend time together and socialize with one another. IIFN fishers described the various social aspects of these tournaments highlighting that "everybody crowds around to one spot and socializes and sees who gets the heaviest fish" (Brennan Wapioke, interview 007, 2011). At these tournaments, community fishers also share fishing stories about the past. It is clear that many IIFN fishers partake in bass fishing activities solely for its leisure and sport aspects, highlighting the fact that there are many non-material benefits associated with this contemporary IIFN fishing practice. The social interactions that occur during these activities strengthen social networks and offer a sense of belonging to IIFN fishers.

6.4.2 "Being Out On the Lake"

Several IIFN fishers commented on the personal enjoyment that is experienced from "being out on the lake" and partaking in fishing activities. To most IIFN fishers, this personal enjoyment relates to the relaxation and leisure aspects of fishing. For many, it also relates to spiritual aspects of "being out on the lake". Several IIFN fishers commented on the fact that "being out on the lake" and partaking in fishing activities by themselves provided an opportunity to connect with the lake and the spirits that inhabit it. They described that by spending time on the water, an individual can connect with the lake and begin to communicate

with it. This highlights IIFN's perception that the lake is a sentient being that is alive and with a spirit (Descola and Palsson 1996). One community fisher noted that there are spirits in the region that are "keepers for everything" (Earl Fair, interview 003, 2011). To connect with these spirits offers a sense of satisfaction in feeling that one is "not alone" while out on the water. In addition, there is a perceived learning that is associated with connecting and communicating with the spirits of the lake (Earl Fair, interview 003, 2011). For example, one community fisher emphasized that the lake "will actually tell you things [and] you start feeling somebody else talking with you" (Earl Fair, interview 003, 2011).

IIFN members perceive that making this spiritual connection is essential to their well-being. Maintaining a good relationship with these spirits is crucial, and IIFN fishers described various ways that they must conduct themselves and show respect for the Creator. This includes putting tobacco out before going out on the lake and being thankful, and acknowledging the Iskatewizaagegan culture through the Great Spirit (Vernon Fair, interview 005, 2011). Several fishers recognized the fact that traditional teachings and knowledge of "how to live off the lake…came from the Creator" (Francine Lee, interview 006, 2011). This suggests that "being out on the lake" provides an avenue for individuals to connect with spirits of the lake, which is essential for accumulating fishing knowledge and strengthening one's spirituality.

This connection with the lake and its spirits helps strengthen and reaffirm a sense of Iskatewizaagegan identity. In fact, the word Iskatewizaagegan loosely translates into "Shoal Lake" or "shallow water". Therefore some IIFN members suggest that "being Iskatewizaagegan" means to be out on the lake. Because the practice of fishing provides a conduit for IIFN members to be out on the lake, it directly reinforces a sense of Iskatewizaagegan identity. The connection of Iskatweizaagegan identity to the lake is highlighted by the following statement:

> *"When [the Creator] gives you that life – that life comes from right there (points to the lake). There's our life right there – right in front of our eyes. The water – that's our life."*
>
> (Earl Fair, interview 003, 2011)

Individual benefits of "being out on the lake" also reinforce good social relations among family groups and the broader community. Social contributions of fishing activities to Anishinaabeg families have been documented by Koenig (2005), who notes "family connections and broader social structures are often central themes in recollections of past fishing activities" (p.92). Many IIFN community fishers described the benefits of being out on the lake with family members and friends. They emphasized that this is an activity that can be enjoyed by multiple generations and helps family members to connect with each other by sharing stories of the past.

Partaking in fishing activities also provides an opportunity to create memories. Several IIFN fishers described the pleasure that they receive when they bring their children or grandchildren out on the lake to partake in fishing activities. The dissemination of fishing knowledge across generations, and the pleasure in knowing that the practice continues on in the future is highlighted in the following passage:

> *"When my son was younger, we used to go out every evening and go out on the bay here – Indian Bay – and throw a few casts in the evening. And if the fish were biting it was a good time for him, eh?... And to this day he still enjoys it. He's 29 now and he enjoys angling – sport angling – more than anything else now. And it's something that, I guess he cherishes and I cherished with my dad…And today too – we take the grandkids out. I've got two granddaughters and they just enjoy fishing."*
>
> (Vernon Fair, interview 005, 2011)

This statement highlights how fishing strengthens family relationships across multiple generations. In addition, several IIFN fishers commented on the fact that seeing the younger generations partake in traditional resource harvesting activities instills a sense satisfaction in them. They also perceive that by exposing younger generations to fishing activities increases the chances that they will continue these practices in the future. This is seen as essential for ensuring that cultural knowledge surrounding the practice will be conveyed to future generations.

6.4.3 Conveying Cultural Knowledge

Over the course of the past few decades, there have been a number of community initiatives to attempt to connect expert community fishers with youth in an attempt to expose them to traditional fishing practices and to get them out on the land and water. One program, run through the community's David Kejick Memorial School was instrumental in stimulating interest in fishing practices for the contemporary generation of expert community fishers. These community-based educational programs helped ensure the transmission of fishing knowledge to younger generations and have been instrumental in ensuring that this practice is continued in future generations. One of the organizers of this program describes its purpose below:

> *"[The program was called] 'take a kid fishing day', which involved the students at David Kejick School. And that turned out really well because it gave a chance for the kids to get out on the lake and experience some sport angling."* (Vernon Fair, interview 005, 2011)

The IIFN community members who organized this program saw the importance of conveying fishing knowledge to younger generations for several reasons. Firstly, the program organizers felt it was necessary for younger generations to be exposed to fishing and hunting activities to allow them the chance to develop an interest in these practices. Secondly, they wanted to ensure that the knowledge of the land and water and relevant land-based practices would not be

lost. Thirdly, they felt it was necessary to re-instill the importance of a strong Anishinaabeg work ethic, as some of these values are being challenged by the introduction of transfer payments and social assistance, which have become more common since the closure of the commercial walleye fishery. Specifically, program organizers wanted to demonstrate to younger generations one simple, but important message: *you have to work to feed yourself and your family*; whether it is directly from food harvested off the land, or indirectly by working to gain money to be able to purchase food. The essence of this message is described in the following statement:

> *"Whether you work, or you live off the land, it is still the same things right – the same concept. If you want to eat, you have to work – you got to work for it. So that is one of the things that we wanted to come across to the kids, that it is not a lost cause if you do not have a job. You are trying to stay alive and at least you have some basic cultural knowledge on how to go about getting that [food], eh."*
>
> (Vernon Fair, interview 005, 2011)

This program was therefore instrumental in conveying a centrally important message that has been passed down through generations of IIFN people. Whether or not you practice fishing as a livelihood, it is necessary to hold the knowledge and skills of resource harvesting practices to ensure the well-being of your people in the future. Despite the fact that there are not very many practicing commercial fishers in the community, it is seen as necessary that younger IIFN generations understand where and how to set a gill net for purposes of being able to feed family members and community Elders. This message has been passed down from past generations, and is highlighted in the following statement:

> *"And that is one thing that I guess my father's generation has tried to bring across to us, eh: is that do not forget how to live off the land because you never know when you are going to need it, eh? And I am glad I took part in*

that [commercial fishing activities] with my dad anyway. And on a few occasions I had a chance to go out with him."

(Vernon Fair, interview 005, 2011)

Several IIFN fishers emphasized that the majority of cultural knowledge about harvesting fish is communicated while out on the lake, which includes fishing locations for particular species of fish at different times of year and different harvesting methods. In this sense, the "take a kid fishing day" program was the ideal for conveying cultural fishing knowledge to younger generations. To IIFN members, fishing knowledge is best conveyed through observation and participation in fishing activities, which can only be achieved by being out on the lake and interacting with the living environment.

Information relating to other resource harvesting activities is often shared while out on the lake. For instance, one IIFN fisher described that he first learned of good locations for waterfowl hunting from going out to fish with community fishers of older generations. Other members spoke to the fact that while out on the lake, they often learned of good areas to gather plants or medicines or sacred sites on the lake.

In addition, many IIFN fishers highlight the importance of traditional teachings and other cultural and spiritual knowledge that are often shared while out on the lake. For instance, one IIFN fisher spoke to the fact that he was grateful for the opportunity of going out fishing with community Elders because it exposed him to stories of the Creator and other spirits of the lake (Brennan Wapioke, interview 007, 2011). While these examples highlight the various forms of cultural knowledge that is conveyed while out on the lake, this knowledge is also conveyed off the lake after the fish has been harvested. Knowledge around cleaning and smoking the fish is passed on once the fishers are ashore and the importance of providing food for family and Elders is reinforced through the preparation and sharing of fish.

6.4.4 Acts of Sharing

Sharing fish has been an important aspect of IIFN culture for hundreds of years. In the past, seasonal feasts were held on ceremonial grounds and would occur at particular times in the year (Francine Lee, interview 006, 2011). This included important springtime feasts that were held as a symbolic gesture, to give thanks to the Creator and the lake for the gifts that enabled the community to survive the winter months. The community would also ask for support for the new harvesting season to come (Francine Lee, interview 006, 2011). These ceremonial feasts were important social gatherings that contributed to the community's social cohesion. They also provided an environment for traditional teachings and other elements of Anishinaabeg spirituality to be conveyed to younger generations.

Today, there are no longer traditional feasts held on ceremonial grounds, however, small feasts are still held by family groups and an annual feasting event is organized by community members, respected Elders and school children. This event is called "fall harvest" and provides an opportunity to keep IIFN feasting traditions alive and teach younger generations about harvesting and preparing traditional foods. This feast reflects the cultural and spiritual aspects of sharing, which is a tradition that is widely practiced today. The form of ceremonial seasonal feasts has changed from what it was in the past; however, informal sharing of country food is still an important aspect of contemporary IIFN fishing practice. Because fishing is the most widely practiced resource harvesting activity, fish are a food source that is shared quite frequently. One community Elder describes the importance of sharing fish and its connection to giving thanks to the Creator:

> *"We used to have our feasts to give thanks. And now they don't [feast]. They don't really do that anymore. But the people who go out and fish. They still give their thanks by sharing their fish with different people in the community."* (Francine Lee, interview 006, 2011)

This statement highlights the spiritual dimensions of sharing fish and its connections to "giving thanks" to the Creator. The act of sharing fish is a phenomenon that I observed throughout my fieldwork and emerged as a significant area of discussion in my interviews. Sharing activities were also documented quantitatively through the household survey data.

Table 19. Methods of Obtaining Walleye for Consumption

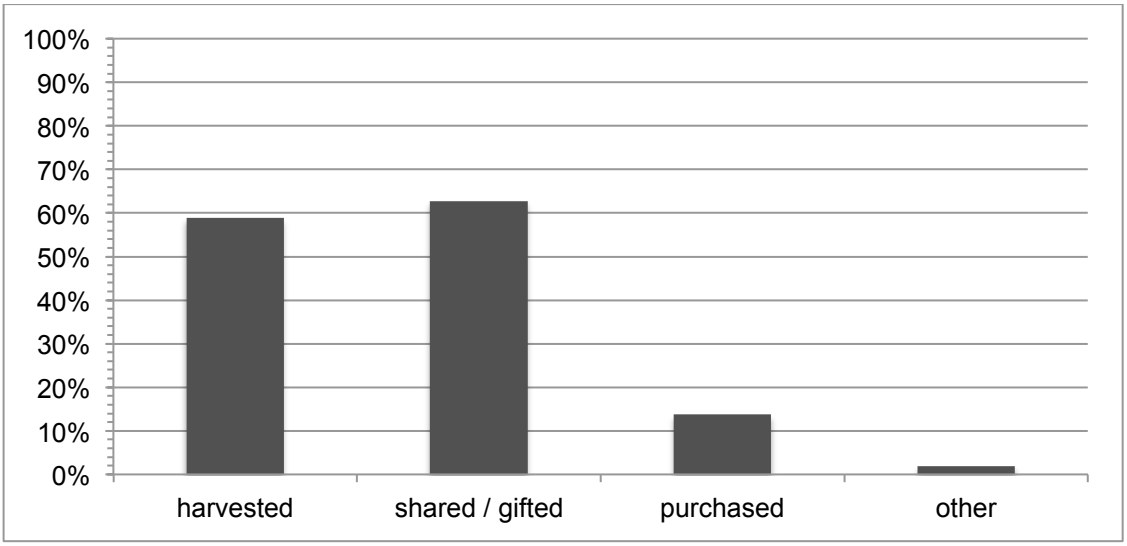


Table 19 presents the results of a household survey question that asked IIFN members the different ways that they obtain walleye for consumption. A striking result is that 63% (SD = 0.18) of respondents indicate that one of the ways that they obtain walleye for consumption is through it being "shared / gifted". This represents the most common method for obtaining walleye for consumption in the summer of 2011. Harvesting is the second most common method for obtaining walleye for consumption at 59% (SD = 0.17). Another method of obtaining walleye for consumption is "purchased" at 14% (SD = 0.06), however a relatively low percentage of respondents selected this option. These results are consistent with IIFN fishers' reflections of the frequency that fish is shared in the community. Acts of sharing are particularly important today, as not all community members have access to the necessary gear to harvest walleye. Many IIFN fishers commented on the fact that individuals can fish off the dock or from

the shoreline. However, ensuring a regular harvest of walleye requires a boat and motor as well as the knowledge of where to harvest the fish at particular times of day and seasons. Many community members do not have access to a boat therefore they rely on shared fish from IIFN fishers who own boats and have access to gill nets and / or fishing rods and the appropriate bait and tackle.

Throughout the coarse of my fieldwork, community researchers and myself spent many days on the lake with expert community fishers. Several times we were given fish to bring back and distribute to community members. When returning back to the community after a day out on the lake, we would then take fish to the households of family members, Elders, or other community members. By partaking in these acts of sharing, I was exposed to the various social benefits of sharing fish and how both parties involved benefit from this social interaction. For instance, the person receiving the fish would enjoy a sense of satisfaction. They were pleased to receive the material benefit of a healthy and appetizing food source. Similarly, I observed a sense of pride and satisfaction from the person who was sharing the fish, as they knew that they were providing a healthy food source to their community members. These acts of sharing provided social benefits to the individuals involved in the exchange and the households that consumed the fish. Observing these interactions highlighted the fact that the distribution of fish throughout the community, and the social interactions that occur through acts of sharing fish, are essential for strengthening social networks within the community.

Another form of sharing fish occurs through more informal gatherings, called "fish fries". These are essentially social gatherings where family and friends gather to share food. Often, when IIFN fishers have a large harvest of fish, or were given a large amount of fish from a family member or friend, they will call up family, friends, and neighbours to enjoy the food together. While this seems like a rather basic social gathering around food, it must be recognized for the important social benefits that result from it. While participating in these gatherings, I observed that they provided an opportunity for family members to

share stories of the past, update family members on current news and generally provided an environment for positive social interactions. In this sense, fish fries contribute greatly to the social cohesion of family groups and the broader community.

It is clear that IIFN members still partake in a variety of sharing activities that strengthen social networks in the community and contribute to social cohesion among family groups and the broader community. Through these contemporary acts of sharing, IIFN members obtain a variety of material and non-material benefits. These includes tangible benefits of ensuring family, Elders and community members have access to healthy foods, as well as a host of non-material benefits that help articulate IIFN identity and culture and strengthen social networks within the community. Acts of sharing are also instrumental in reinforcing traditional customs of giving thanks to the Creator, which helps reinforce Iskatewizaagegan culture. Acts of sharing fish provide an example of the various ways that IIFN has shown ingenuity in culturally adapting their fishing practices to benefit their needs within changing environmental and economic circumstance.

6.5 Chapter Summary

This chapter presented the results of data gathered to fulfill the main objective of this research: to document contemporary IIFN fishing practice. Today, the majority of IIFN members continue to fish for a variety of purposes, which includes subsistence, leisure, sport and commercial activities. Results from a community-based household survey provide general characteristics of contemporary IIFN fishing practices and document the various material benefits of these practices. The majority of IIFN members continue to partake in fishing activities throughout every season and consume fish on a regular basis (approximately once a week or once a month), whereas other resource harvesting activities show greater seasonality. IIFN community members do not perceive that there are significant barriers to fishing activities, whereas

perceived barriers, such as lack of knowledge and lack of interest, are present for other resource harvesting activities, such as trapping. Interviews with IIFN fishers indicate that many IIFN members do not have access to a boat, which may be correlated with the fact that fewer IIFN fishers utilize gill nets to harvest fish for subsistence.

Of all species, walleye is the most preferred and most frequently consumed fish species by IIFN households followed by lake whitefish. In addition, both of these fish species are considered to be a preferred food source for IIFN households. Other fish species, such as white sucker, northern pike and bass were also described as subsistence fish. However, household survey results indicated that they were consumed more infrequently during the summer of 2011. Today, the majority of IIFN members harvest fish through angling techniques, although gill netting is still practiced by some IIFN fishers for subsistence and commercial purposes.

Data obtained from participant observation and semi-structured interviews with expert IIFN fishers highlights various non-material benefits that contemporary IIFN fishing practice provides to the community. Contemporary IIFN fishing practices provide an avenue for conveying cultural knowledge across generations and articulating a sense of Iskatewizaagegan identity. Acts of sharing are a significant way that IIFN members obtain fish for consumption. This practice is rooted in Iskatewizaagegan spirituality and connected to the importance of giving thanks to the Creator and the lake. Through contemporary acts of sharing fish and fish fry gatherings, social networks within the community are strengthened which contributes to social cohesion of family groups and the broader community. Reflecting on the material and non-material benefits of IIFN's contemporary fishing practices it is clear that it continues to contribute greatly to the community's well-being.

CHAPTER 7: MANAGEMENT OF THE SHOAL LAKE FISHERIES

> *"I guess the history has not been very good. The management of the lake – the way that it was set up before. It was too much based on business interest. And the way that it was managed was not very good. It was almost like the walleyes were almost extinct, and those were policies and government structures and legislations that almost wiped out the [walleye]…and the history has not been very good between the commercial fisherman and the Ministry of Natural Resources…And the way that they had set up their management hasn't been very good. I guess it was all driven by the economy. I guess to a market for the walleyes…it was not based on any teachings or traditions."*
>
> (Randy Paishk, interview 008, 2011)

7.1 Introduction

Before Europeans entered into IIFN territory, the Anishinaabeg people of Shoal Lake had been living off and sustainably managing its various natural resources for hundreds of years. IIFN are stewards of the Shoal Lake watershed and rely on detailed understandings of ecological systems and spirituality to inform sustainable ways of relating to the lake and surrounding landscape. Contemporary local knowledge of Shoal Lake is rooted in a long history and connection to this landscape. This extensive knowledge would greatly enhance the management of the Shoal Lake watershed and its resources. However, knowledgeable IIFN fishers currently have limited participation in the management of these resources at this time. IIFN fishers could contribute greatly to the sustainable management of Shoal Lake's fisheries and the watershed as a whole; yet, they have had no success in having their management suggestions incorporated into Shoal Lake watershed management planning processes. Contemporary IIFN fishers perceive that this lack of collaboration is rooted in

poor relations between community fishers and MNR and differing perspectives on what management means.

This chapter will investigate some of the factors that have resulted in the lack of collaboration between MNR and IIFN in the management of the Shoal Lake fishery. It will begin with a brief review of the contemporary Shoal Lake watershed management structure and describe the process for developing the Shoal Lake Watershed Management Plan from the perspective of IIFN fishers. It will then present IIFN fishers interpretation of the relationship between MNR and IIFN. It will present IIFN's perceptions of the government agency and its role in the management of Shoal Lake fisheries. This will underscore how MNR fisheries and watershed management practices are impacting contemporary IIFN fishing practices, which has stimulated an interest on the part of some IIFN fishers to become active in the management of the Shoal Lake fisheries. The final section will present some of IIFN's community-based management ideas and will evaluate their potential contribution to the sustainable management of the Shoal Lake fisheries and the overall well-being of the community.

7.2 Shoal Lake Watershed Management Structure

The Shoal Lake Watershed Management Working Group (SLWMWG) governs contemporary Shoal Lake watershed management decisions. This is a multi-stakeholder group that aims to include all of the identified stakeholders in the monitoring and decision-making for the Shoal Lake watershed. It is made up of agencies from the Government of Canada, Government of Ontario, Government of Manitoba, Winnipeg Municipal Government and Shoal Lake Band #40. IIFN currently does not participate in these planning processes. In April 2002, the working group developed a Shoal Lake Watershed Management Plan. Among other things, this document recommends strategies and actions to: "maintain the ecological integrity and environmental quality of Shoal Lake; to sustain watershed communities and resources; and, to guide future development" (Shoal Lake Watershed Management Working Group 2002). Shifting the scale of

management from the lake scale to a watershed scale was an important step towards incorporating an ecosystems approach to management. This approach attempts to respect ecologically defined boundaries and creates linkages between land-based activities and their effects on stream systems (Shoal Lake Watershed Management Working Group 2002). While this step is important for incorporating the various resource developments that are impacting contemporary IIFN fishing practice, the Shoal Lake Watershed Management Plan has still not been formally signed onto by IIFN. This is, in part, due to IIFN's perception of the generally poor planning process in developing the document and that the SLWMWG would not formally "recognize" IIFN Treaty rights in the document (Phyllis Pinesse personal communication 2012). It also relates to a history of poor relations between the MNR and IIFN that has resulted in a deeply ingrained lack of trust for this government agency.

7.3 The Relationship between IIFN and Ontario Ministry of Natural Resources (MNR)

Early on in my fieldwork, it became apparent that in order to understand contemporary IIFN fishing practice and its contributions to the community's well-being, I had to understand the historical and socio-political context of Shoal Lake fisheries management. In the 1920s MNR was given the mandate to manage Shoal Lake's fisheries and since this time, the relationship between MNR and the IIFN can be described as complicated and tenuous. As indicated in Chapter 4, MNR has implemented policies, such as catch quota systems and the closure of the commercial walleye fishery, which have drastically altered IIFN fishing practice and impacted the community's well-being. IIFN fishers memories of the manner in which these policies were implemented provides some of the root causes of IIFN's deeply ingrained mistrust of MNR. In addition, IIFN fishers perceive that these and other Shoal Lake management decisions were not made for the benefit of the community. A pattern of poor consultation; a clashing of worldviews which result in differing perspectives on natural resource and

environmental management (NREM); and, failed attempts at collaborating around management decisions, have deepened this mistrust.

7.3.1 A Failed Attempt at Co-Management

There is a long history of events that have led to the deterioration of the relationship between MNR and IIFN. To provide a detailed account of all these events that have occurred over the course of the past hundred years is beyond the scope of this chapter. I will therefore draw on one event to highlight how the lack of trust towards MNR developed. The event was a failed attempt at government – community co-management of the Shoal Lake fisheries, which occurred after the commercial walleye fishery had been shut down.

Co-management has been defined as "the sharing of power and responsibility between the government and local resource users" (Berkes 2009:1692). Existing literature suggests that co-management arrangements can contribute to improved data collection, analysis and monitoring of resources; and can also help resolve conflicts among involved parties (Pinkerton 1994). MNR's first attempts at involving IIFN in fisheries management was a "joint management initiative" that was proposed to the First Nation in 1989. This early attempt at co-management took form as a cooperative fishing study that was to be undertaken between IIFN and MNR, with the purpose of collaborating with IIFN fishers in the gathering of fish population data. In 1990, a written agreement was signed between MNR and IIFN to work towards the co-management of the Shoal Lake commercial fishery. The mandate of this agreement was to support a "joint commitment to adopt a co-operative data collection and management approach to Shoal Lake commercial fishery resource" on the premise that the benefits of the Shoal Lake fisheries should be first and foremost accorded to the First Nations (Shoal Lake Fisheries Cooperative 1989:1). Also outlined in this agreement was that a central aim of the co-management body would be to achieve a sustainable, healthy commercial fishery.

During the field trials for the Cooperative Fishing Study an IIFN fisher, who was a part of the co-management team, was fined by MNR for illegally fishing for walleye. IIFN fishers are adamant that this fisherman was in fact targeting lake whitefish and that the area and fishing technique that he was employing would ensure that no walleye would be caught (Jim Holmstrom, interview 002, 2011). IIFN Chief and Council sent letters to MNR demanding that the fine be lifted because this IIFN fisher was part of the cooperative fishing study and was in fact not harvesting walleye. MNR did not remove the fine, overlooking the possibility that the IIFN fisher could have been gathering data for the cooperative fishing study. As a result the IIFN withdrew from the co-management process all together and the cooperative fishing study was terminated.

These events highlight a pattern of poor relations and mistrust between IIFN and MNR that can be traced back to when MNR began imposing catch quota systems on Shoal Lake. This failed attempt at co-management provides a more recent example of some of the reasons that IIFN has developed such a deeply ingrained mistrust for MNR. Over the course of the last forty years, there have been countless negative interactions between MNR and IIFN that continue to erode their relationship. What IIFN fishers discuss when recalling events such as these, is that MNR does not recognize IIFN's fishery monitoring techniques, and that the data collection process has to be controlled by MNR fishery technicians (Vernon Fair, interview 005, 2011; Jim Holmstrom, interview 002, 2011). They also perceive that MNR is generally not acting in the interest of the First Nation and especially not in the interest of commercial fishers. The failure of MNR to recognize IIFN's management and monitoring techniques highlights an underlying issue that must be addressed in future co-management attempts. It highlights that MNR and IIFN have differing perspectives on what natural resource and environmental management (NREM) is, which highlights the fact that various equivocations are present in communications between these two parties (Vivieros de Castro 2004).

7.3.2 Clashing Epistemologies

The different perspectives on NREM held by the two groups reflects a clashing of worldviews and epistemologies. IIFN fishers do not feel that the current fisheries managers are addressing the correct issues to ensure a sustainable fishery in the future. They also feel that MNR and other stakeholders in the SLWMWG do not understand what is important about the Shoal Lake watershed, and in fact, are not perceived to be experts on its various resources. IIFN fishers understand, experience and talk about the Shoal Lake watershed in very different ways than western trained fisheries biologists. The management of the Shoal Lake watershed therefore highlights a situation where fundamental misunderstandings in what is meant by 'managing resources' are present. To begin to understand where these misunderstandings stem from, it is necessary to discuss some of the characteristics of Anishinaabeg worldview and compare it to western NREM epistemologies.

In Anishinaabeg worldview, authority regarding resource knowledge is related to both geography and specialized knowledge (Davidson-Hunt 2003). As described in Chapter 5, knowledge of the land, water and its resources comes from the Creator through an individual's direct experience and intimacy with a geographically defined place (Davidson-Hunt 2003). In addition, broader custodial responsibilities are based on intimate knowledge of an individual in relation to a specialized set of resources, for example, fish (Davidson-Hunt 2003). Therefore, in Anishinaabeg worldview, the amount and type of knowledge that a person holds is directly related to a specific relationship with the Creator and an intimate engagement and connection with particular resources in a defined geographic place. It is through this process that individuals develop expert knowledge. In this sense, Anishinaabeg worldview produces very particularized knowledge, which is distributed unevenly among individuals in the community. This worldview and its relationship to NREM have important implications for how the Shoal Lake watershed should be managed, which among other things, highlights who has the authority to talk about the resources in question.

The SLWMG approaches NREM from a western science perspective, which is very different, and at times, contradictory to the Anishinaabeg worldview. This approach to NREM is summarized clearly in the following statement that appears on the website:

> *"The Shoal Lake Watershed Management Plan (SLWMP) contains information that assesses the state of water and related resources, evaluates human impacts and influences, and considers the needs and interests of watershed residents and resource users. It establishes goals, objectives, principles and strategies to fulfill those needs".* (accessed from Manitoba Water Stewardship on May 25, 2012, *emphasis mine*)

The language of this statement demonstrates that the SLWMWG functions under an epistemology that attempts to exert control over the resources at hand. In this context, "hard" biophysical explanations of the state of the water and its resources is seen as a requirement for proper management (Forsyth 2011). To achieve this objective, universal and standardized measurements are used to create scientific categories that portray nature as an "abstract inventory of things" (Descola and Palsson 1996). This approach to NREM draws off scientific disciplines of chemistry, biology and ecology, to provide cause-and-effect statements about the state of the watershed and its resources (Forsyth 2011). In this context, environmental explanations are made using universal laws that have been developed from positivist science. As a result, the scientific disciplines themselves begin to determine what should be studied and who is qualified to do so (Latour 1999) making fisheries biologists the suitable experts for monitoring the Shoal Lake fisheries.

In consideration of both Anishinaabeg and Western approaches to NREM, one can begin to understand why various misunderstandings (eg. how the resource should be managed and who has the authority do so) are present between MNR and IIFN. For instance, from the Anishinaabeg perspective it is inappropriate for government officials, or fisheries biologists who do not live in the Shoal Lake

area, to be delegated the responsibility of decision-making over the land and its resources. From this perspective it would also be questionable to assume that fisheries biologists, chemists, and ecologists are the only appropriate experts to monitor the health of its aquatic ecosystem.

From the Anishinaabeg perspective, to gain the authority to manage the Shoal Lake fisheries one must develop intimate relationships with the lake and its resources and have specific individualized knowledge of it. As indicated by Davidson-Hunt (2003), for IIFN "responsibilities given by the Creator to an individual cannot be delegated to or represented by abstract knowledge of another person" (p. 596). Therefore, to understand how to properly manage the Shoal Lake watershed requires particularistic knowledge that is born from, and rooted in, experience (Raffles 2002). Because MNR's managers and fisheries biologists tend to spend minimal time in the Shoal Lake watershed engaging with the lake and its resources, several IIFN fishers are frustrated by the fact that they are considered to be the "experts" for making management decisions for the watershed. They are also frustrated by MNR's history of 'top-down' management approaches, where final decisions are made by a few individuals who do not spend time on the lake or engage IIFN fishers in a discussion of management alternatives. This sentiment is highlighted in the following statement:

> *"I cannot believe that one or two guys control the whole of northwestern Ontario. Every lake around here it is what they say goes. They are backroom guys – you can't even see them. They are locked in their offices over there."* (Jim Holmstrom, interview 002, 2011)

While the SLWMWG is an attempt at involving all the identified stakeholders in the decision-making process (including Shoal Lake First Nations peoples), the above statement clearly emphasizes that IIFN fishers believe that MNR managers need to spend more time on the lake in order to make informed management decisions. It also critiques the bureaucratic nature of MNR's management approaches, highlighting the fact that the individuals making the final

management decisions are not visible to IIFN fishers and community members. I would suggest that this fundamental difference in what IIFN and MNR perceive to be NREM has contributed to a IIFN's lack of faith that MNR is managing the Shoal Lake watershed sustainably and for the benefit of the IIFN community.

7.3.3 IIFN Critiques of MNR's Management Enforcement

Interviews with IIFN fishers revealed a variety of criticisms of the way MNR approaches fisheries management. It is clear that IIFN fishers do not believe that MNR is capable of maintaining the health and integrity of the lake and its resources for future generations. They also perceive that MNR does not have the capacity to properly enforce their fisheries policies and regulations. This is attributed to a lack of essential fisheries management capacity. IIFN fishers suggest that they have observed first-hand MNR's failure to enforce its management regulations when they shut down the commercial walleye fishery and they believe that this lack of enforcement capacity is one of the reasons that they have not re-opened the commercial walleye fishery. One IIFN fisher illustrates this point in the following statement:

> *"Yeah. They can't do it. They don't have the resources…they might have the resources, but they are all spread out….just too thin…and if they opened the lake, they would never be able to…watch it."* (Wayne Holmstrom, interview 001, 2011)

Implicit in this statement is that IIFN fishers believe that any management initiatives by MNR are fundamentally flawed because they do not have the appropriate enforcement capacity. Several IIFN fishers noted that they look out for each other, and if MNR is on Shoal Lake every fisher will know in a matter of minutes (Jim Holmstrom, interview 002, 2011). Therefore, if any illegal fishing activity was occurring on Shoal Lake, chances are MNR would not catch it. In addition, several IIFN fishers complain that the sport fishing lodges are illegally targeting walleye on Shoal Lake, but MNR is never there to catch them (Oliver Pinesse, interview 004, 2011). Because IIFN fishers are on the lake most days,

they believe that they are the suitable people to be enforcing regulations. MNR's lack of enforcement capacity was also brought up in reference to the catch quota systems that MNR implemented on the commercial walleye fishery leading up to the commercial walleye closure. Specifically, it is perceived that externally imposed management initiatives were not sufficiently regulated and resulted in a near extinction of the walleye from Shoal Lake. This is highlighted by the following statement:

> *"The quota system has not worked. It has shown that it has not worked to a point where it almost wiped out the [walleye] species. There could have been more thought gone into recovering the fish in a faster way - alternatives like fish hatcheries or, I guess, providing maybe studies on the impacts that the intake has."* (Randy Paishk, interview 008, 2011)

This statement criticizes management attempts by MNR in a number of ways. Firstly, it criticizes the fact that in the past MNR only focussed on impacts of aboriginal over-harvesting and not other factors. It also suggests that MNR has largely ignored the potential impacts of the City of Winnipeg water intake on walleye population numbers. It should be noted that in 1995 an assessment of the impingement on walleye spawn, larval fish and juveniles was undertaken by City of Winnipeg consultants, which did document some fish mortality (Shoal Lake Watershed Management Working Group. 2002). While this study did not suggest that spawn, larval fish and juvenile mortality was "biologically significant" in comparison to total spawning population, it did call for future studies to understand year-to-year variability (Shoal Lake Watershed Management Working Group. 2002). Such studies have not been conducted and IIFN fishers criticize these short-term assessments and suggest that longer-term studies must be undertaken and analysis must conducted for other fish species, such as lake whitefish and white sucker. In addition, many IIFN fishers are unaware that such studies have been undertaken which highlights the lack of meaningful consultation by SLWMWG and MNR.

7.3.4 Sharing Fisheries Data

MNR has undertaken a number of fisheries monitoring projects since the closure of the commercial walleye fishery in 1983. Between 1983 and 1995, annual monitoring projects were conducted by the Lake of the Woods Fisheries Assessment Unit (LWFAU) and a number of fall walleye index netting (FWIN) projects were undertaken: LWFAU in 1998 and 2006; and, the Anishinabek / Ontario Resource Council (AOFRC) in 2000 and 2001 (Mosindy, 2008). These projects gathered data on fish species abundance, presence / absence, and growth rates, with the FWIN projects focussing specifically on the commercial viability of walleye. The reports generated from these monitoring projects provide useful data that are used to make Shoal Lake fisheries management decisions.

The method of disseminating this information by MNR is in the form of annual or bi-annual reports that present data that has already been analyzed by MNR biologists. These reports are generally mailed to the Band office and therefore, few IIFN fishers and community members ever end up reading them. In addition, none of the "raw" unanalyzed fisheries data has been shared with IIFN. Several IIFN fishers recounted their frustration with the lack of sharing of "raw" fisheries data. This is highlighted by one IIFN fishers comment below:

> *"But with the [MNR}…you can be critical but if [they] don't share the information that they have with us, then…I mean it seems one sided, eh. It seems like we are doing the sharing of resources, information, but they are not sharing their information."*
>
> (Vernon Fair, interview 005, 2011)

The fact that MNR does not share "raw" unanalyzed fisheries data they collect contributes to mistrust by IIFN with regards to the contemporary management approaches by MNR. When MNR conducts its FWIN projects, they routinely hire IIFN fishers and rely on their local knowledge of the lake for navigation and to avoid potential hazards. While on the water IIFN fishers also routinely share

information relating to their first-hand observations of population levels and seasonal catches. Because MNR does not share any of their "raw" data obtained during these outings, it is perceived that there is a one-way exchange of information. The lack of transparency surrounding the sharing of data is perceived to be sign of poor intentions by MNR. This perceived dishonesty makes IIFN fishers question whether MNR is functioning for the benefit of IIFN fishers and community.

7.4 Moving Forward

The relationship between IIFN and MNR is clearly impacting the community's involvement in the management of the Shoal Lake watershed as well as their participation on the SLWMWG. Somewhat surprisingly, in spite of the history of poor relations between the two groups, several IIFN fishers value restoring the relationship with the government agency if it means that the lake will be managed sustainably. Specifically, IIFN fishers feel that there needs to some form of dialogue between MNR and the community, in order "*to look at ways - innovative ways - to bring back the [commercial] fishery, particularly [the] walleye"* (Vernon Fair, interview 005, 2011). In addition, they have expressed a vested interest in taking an active role in managing Shoal Lake fisheries. However, IIFN fishers believe that in order for the Shoal Lake fisheries to be managed sustainably they must be involved in management decisions as well as the enforcement of regulations.

MNR must make a concerted effort at restoring the relationship with IIFN. In order to overcome the deeply ingrained mistrust of MNR by IIFN, it will be necessary for MNR to formally recognize the expert knowledge of IIFN with regards to the watershed and its resources. It will also require more transparency by MNR, specifically in the form of sharing unanalyzed fisheries data collected during FWIN projects, as well as more meaningful consultation about future management initiatives. Finally, MNR will need to recognize and respect that both parties have different worldviews and provide meaningful

opportunity in their management approach for new ways of thinking about fisheries management. Thus, for MNR's policies to be observed and potentially enforced by IIFN, the relationship between the two parties must be healed and community-based fisheries management systems must be established.

7.5 Community-Based Fisheries Management

Community-based fisheries management of natural resources is based on the premises that local peoples have "greater interest in sustainable use of resources than does state or distant corporate managers; that local communities are more cognizant of the intricacies of local ecological processes and practices; and they are more able to effectively manage these resources through local or "traditional" forms of access" (Brosius et al. 1998). Examples can be drawn on to highlight successes and difficulties of past attempts at community-based fisheries management and local-level aboriginal fisheries regulation in Canada (Berkes 1989). IIFN has made efforts in the past to launch community-based fisheries management initiatives. One attempt took form in the proposal of a "Shoal Lake Fisherman's Council". The aim of this initiative was to create an indigenous management authority and work to re-establish the commercial fishery according to the priorities and traditions of the Anishinaabeg people (Cooperative Fishing Study 1989). This movement attempted to establish self-regulation, local control and develop a joint authority function to work with non-indigenous governments. The initiative was developed in response to the frustrations felt by IIFN with regard to the management of the Shoal Lake fishers by MNR. Unfortunately no fisheries data was ever collected and this community-based initiative never fully materialized.

With changes in leadership over the years fisheries management has not always been seen as a priority for IIFN Chief and Council (Wayne Holmstrom, interview 001, 2011). Recently however the Band has recently established a new initiative to build capacity to manage the resources within their traditional lands. As part of this initiative, the community hired a private fisheries biologist to assist the

community in gathering its own biological data on Shoal Lake fish species in the summer, fall and winter of 2011. This included collecting data on the age and sex of commercially viable fish species to determine population structures, age classes and growth rates of these species. IIFN now has a community database where this data is stored. The aim of gathering this data is to help IIFN to make its own informed management decisions in the future. By gathering its own fisheries data IIFN is partaking in a symbolic initiative to exert sovereignty over its land, lake and its various resources. As part of this initiative the community has administered a seasonal household survey, which has been conducted for the summer, fall and winter of 2011.The design and implementation of the 2011 summer survey is described in Chapter 3 of this thesis and provides relevant data on contemporary IIFN fishing practice that is presented in Chapter 4. This survey also provides data on other resource harvesting activities (eg. hunting, trapping, gathering plants and medicines) and consumption of country foods. The data obtained from these seasonal household surveys is also held in a community database and can be used to assist Chief and Council when they consider the development of environmental policies and educational programs. It is hoped that it will be used in the development of a First Nations Shoal Lake watershed management plan.

From interviews with IIFN fishers, many ideas and directions for community-based fisheries management were discussed. Consistent in all of these discussions was the importance of IIFN fishers in the development of management initiatives as well as the enforcement through self-regulation. Their guidance is viewed as an imperative component of such planning. IIFN fishers believe that the success of fisheries management requires political backing by the Band. They want the Chief and Council's decisions to be informed by Elders, IIFN fishers and the community as a whole. This sentiment is described in the following statement:

"[The Chief and Council] are leaders of the community and for me, my thinking is that [management decisions] generally have to come from the people as well, more so…to give that mandate to the leadership, and say listen, you know we have some ideas and lets go with it. And work with the administration to take that to the powers to be."

(Vernon Fair, interview 005, 2011)

The following section will present some of the management initiatives that IIFN fishers feel should be explored by IIFN Chief and Council in order to restore a viable fishing economy on Shoal Lake for its aboriginal inhabitants.

7.5.1 Educational Programming

IIFN has organized a variety of programs to teach its youth about traditional resource harvesting practices, which includes the fall harvest that was described in Chapter 4. Also described in this chapter was the more intensive educational program that was run throughout the 1990s to get youth out on the lake and teach them how to set and pull nets and clean fish. The aim of this program was to teach younger generations what life was like as a commercial fisher and how to harvest fish for subsistence. Specifically, expert community fishers would bring students out onto the lake and teach them resource harvesting practices. A contemporary IIFN fisher who participated in this program describes this program and how it contributed to his interest in fishing:

"I was a kid going to David Kejick School. I can' t remember what grade I was in, but I think we were introduced to net fishing. Somebody did, I think it was Mr. Bean at that time – Jimmy Holmstrom – he did a demonstration on lifting a net and pulling a net on the ice. All the students went out to Rabbit Point – south end of the lake. We helped lifting the net and setting it back in. And from there just my interest started to…I guess my interest caught on then, in terms of the net fishing and the history of it. I just wanted to learn more and who was doing it. And I knew we were eating fish at

home, but I didn't know where it came from or who was getting it and that. And I just started to get a little bit of insight into it."

(Brennan Wapioke, interview 007, 2011)

This experience was shared by a number of other IIFN fishers who participated in this program. All of the contemporary IIFN fishers that participated in this program believe it was instrumental for igniting their interest in fishing. It was also instrumental in creating a desire for them to go on and teach their own children about fishing. This program has been a primary factor in sustaining IIFN fishing practices and providing an avenue for transmitting fishing knowledge to younger generations. Ensuring that the youth are knowledgeable about fishing practice and the lake's resources are essential to the success of community-based natural resource management initiatives for the long-term, This knowledge will be very important in any attempts to restore a commericla fishing industry in the community. Re-establishing this program is seen as an important step for ensuring that expert knowledge of Shoal Lake's fisheries and fishing practice are conveyed to future generations of fishers.

7.5.2 Restoring the Commercial Fishery

Virtually every IIFN fisher that I interviewed spoke about the community's desire to re-introduce a commercial fishing industry that could provide a source of livelihood for IIFN members. Many IIFN fishers believe that for this to occur, a commercial walleye fishery must be re-opened. In these discussions, various ideas were put forth about the types of management initiatives that would ensure that a commercial walleye industry that would sustain itself ecologically and economically for future generations. I will provide a brief overview of some of the management initiatives that IIFN fishers feel should be entertained. It should be noted that to provide an analysis of the ecological and economic feasibility of each of these potential options is beyond the scope of this chapter. Therefore the aim of this section is provide a brief description of each potential management initiative.

Diversify Commercial Fish Species:

The skepticism by contemporary IIFN fisher's with regards to the re-opening of the commercial walleye rests in the fact that, in the past, the commercial fisheries on Shoal Lake were over-reliant on walleye. Some IIFN fishers believe that to sustain a commercial fishery on Shoal Lake requires a diverse market of commercially viable species. One IIFN fisher describes this sentiment:

> *"If we are going to harvest [fish] for the purposes of commercially selling them as a market, there are certain, I think we are more or less targeting a certain species, which is the walleye. I think if it was a little bit more diverse of a market for northern pike or for bass, or for whitefish… suckers, you know just other species and not necessarily just walleyes, then I think there could be things that are incorporated in there that we could only harvest a certain amount and based on the seasons."*
>
> (Randy Paishk, interview 008, 2011)

This statement highlights IIFN fishers' perception that Shoal Lake's commercial fishery was over-reliant on walleye. It also implies that commercial harvest quotas should be implemented for each species and should be based around seasonal activity and fish life-cycles.

Supplement Walleye Populations:

Several IIFN fishers recognize that a commercial walleye fishery was unsustainable in the past. In particular, some IIFN fishers suggested that in the late 1970s over-harvesting at Snowshoe Bay occurred during the spring spawning seasons throughout the late 1970s ultimately contributing to its population crash. Today IIFN fishers believe that walleye populations are abundant and that a regular harvest could contribute to a healthier and more balanced lake (Oliver Pinesse, interview 004, 2011). Despite this, several IIFN fishers believe that if a commercial fishery is to be re-opened safeguards must be put in place to relieve pressures on commercial fish species in order to avoid future population crashes. In particular, IIFN fishers feel the Band should

consider exploring the economic feasibility of supplementing walleye populations through stocking programs, fish farms, or a fish hatchery. The interest in exploring new possibilities to bring back a sustainable commercial walleye fishery is highlighted in the statement below.

> *"You don't want to be catching a fish during spawning. Or if we were to do that, than there has got to be things in there that incorporate – say to help along with developing commercial types of activities. Like say, fish hatcheries. I think that [commercial fishers should] not necessarily just take from the lake all the time…say if we were going to get into the market of walleyes, then maybe we need to look at other areas, other ways of developing a commercially viable marketable type of business activity. It doesn't have to be just taken from the lake all the time because it takes a while for the impacts to appear."*
>
> (Randy Paishk, interview 008, 2011)

This comment highlights that community fishers have a vested interest in re-establishing a commercial walleye industry that can adapt to changing circumstances while still providing economic outputs to IIFN fishers. It also highlights that it is often difficult to know that a fish population is going to crash until it is too late, even when the fishers have good knowledge about the fish and the lake. It is clear therefore that IIFN fishers see the need to build resilience in a commercial fishery in order to be able to respond to changing population levels or other environmental changes. IIFN fishers seem open to entertaining the feasibility a variety of approaches to re-establishing a viable commercial fishery. This highlights that they are not opposed to resource development activities, if they are to be carried out in environmentally ethical ways that follow IIFN knowledge and traditions. This sentiment is highlighted by the following statement:

> *"A little bit of resource development. In areas like, okay well let's say, for example, maybe the walleye aren't doing so good – maybe, okay, well what*

do we do then? How can we help? And okay, well do you want suggestions, maybe – this was even talked about years ago – a hatchery, eh. Re-stocking the lake."

(Vernon Fair, interview 005, 2011)

The idea of establishing fish hatchery or implementing re-stocking programs are perceived to be a way to ensure the economic and ecological sustainability of a commercial walleye fishery on Shoal Lake. IIFN fishers remember that it was not possible to make a living off of the commercial walleye fishery after the quota system had been implemented. Therefore there is some skepticism as to whether a commercial fishery would be able to sustain livelihoods of IIFN community fishers without other inputs to the walleye population levels. The above quotes highlight a number of potential management initiatives that could be explored to determine the feasibility of sustaining a commercial walleye fishery in the future. To implement such programs would require a high degree of organization on the part of IIFN Chief and Council, the community and IIFN fishers.

7.5.3 Establishing a Shoal Lake Fishers Cooperative

One way of organizing IIFN fishers that was discussed in some interviews was to create a Shoal Lake fishers cooperative. The role of this organization could take many forms and the specific mandate of it would likely emerge out of discussions amongst interested IIFN fishers. One of the advantages seen by IIFN fishers in establishing a cooperative is that they could pool resources to purchase equipment that would facilitate the processing and transport of fish for sale to markets. Many community participants noted the current difficulties associated with transporting fish to buyers, which included the lack of ice in the community as well as the lack of access to trucks to transport processed fish to buyers. Some IIFN fishers believe that organizing an IIFN fishers cooperative would help remedy some of these problems. It was also felt that a co-operative might be able to establish a central fish plant where IIFN fishers could bring their fish in to be processed by community fishers / employees. The fishers who were a part of the

co-op would then have better access to ice and transportation of their fish to markets. IIFN fishers perceive that this could make a contemporary commercial fishing practice more viable to community members. This sentiment is described in the following statement:

> *"There could be a - well business for a few people there. I shouldn't say business but an income – supplement income…make quality of life a lot better than it already is. Because there aren't that many jobs for, the – what do you call it – the guys that aren't that educated."*
>
> (Jim Holmstrom, interview 002, 2011)

This statement highlights IIFN fishers' interest in seeking for ways to ensure the financial benefits of commercial fishing activities that could be distributed to more community members. In turn, a valuable source of livelihood that would contribute greatly to the well-being of the community.

7.5.4 Exploring New Fisheries-Related Industries

In addition to discussions of different ways to restore the commercial fishing industry on Shoal Lake, IIFN fishers highlighted other ways that contemporary fisheries industries could contribute to the local economy and well-being of the community. The two options that were discussed as potential avenues to explore were: opening a sport fishing lodge; and, establishing a cultural tourism industry.

Opening a Sport Fishing Lodge:

IIFN fishers who talked about the viability of opening a sports fishing lodge emphasized that in order for it to be economically feasible, the walleye fishery would have to be opened to sport angling. As indicated in Chapter 4, many IIFN fishers believe that there are too many walleye in Shoal Lake, and specifically, too many big walleye. Some IIFN fishers believe that opening a sport fishing lodge that targeted walleye would help balance walleye populations. They also perceive that it could be a viable option for involving more community members in contemporary fishing activities and could also help stimulate the local cash

economy. IIFN fishers believe that if individuals could organize themselves to start up a sports fishing lodge on Shoal Lake there could be significant financial returns. Specifically, they feel that a First Nations owned fishing lodge it would have an advantage because it could draw off IIFN fishers' knowledge of the lake and walleye populations (Vernon Fair, interview 005, 2011; Jim Mandamin, interview 009, 2011). Many of the participants believe that the lake is already being managed as a trophy walleye lake for sport lodges, and therefore they feel the community should be benefiting from this management approach. IIFN fishers acknowledge however that in order for a sports fishery to be sustainable, it must be tightly regulated (Jim Mandamin, interview 009, 2011).

Establishing a Cultural Tourism Industry:

Another industry that IIFN fishers described as a potential option to stimulate a local fishing economy was explore the feasibility of a cultural tourism operation. In consideration of how plentiful fish populations are on Shoal Lake; the diversity of bird species, including a variety of raptors; and, the richness of the Iskatewizaagegan culture and tradition, some IIFN fishers believe that a cultural tourism operation on Shoal Lake would appeal to many Canadian and international tourists and could provide a good source of income for the community. One IIFN fishers describes his vision of what a cultural tourism industry might look like on Shoal Lake.

> *"I would be taking people out…like even when I was fishing, the photo opportunities for the [bald] eagles and everything else - there's a tourism industry right there…Like when I was fishing out here, I'd have maybe 200 birds hanging out around…eagles and everything else…you throw your scrap fish out and your waste fish out everyday at the same place and that and it's just a big feeding frenzy and, uh…with the fights and the sounds and everything else…with a good lens and microphones you'd be just getting super pictures and the whole bit. Even for just putting a net out…taking your tourists, lifting the net, cutting the fish in front of the them, showing them the parts and picking them up for everything else…a two-day thing and then send*

them back on their way down the highway and that…word of mouth, I'd make a good living off of that."

(Wayne Holmstrom, interview 001, 2011)

While the feasibility of such an operation would require extensive planning, product development and financial investment, this statement highlights IIFN fishers' interest in thinking of creative ways to adapt their fishing practices to current political and economic contexts. This and the other examples also highlight the desire by IIFN fishers' to have more control and self-determination when it comes to what avenues they want to explore in terms of stimulating a local fishing economy.

7.5.5 Aboriginal Fisheries Regulation

One theme that emerged from discussions with all IIFN fishers, was their desire to manage and regulate Shoal Lake fisheries. Given their long-history of occupation in this territory as well as their spiritual connection to the lake and its resources, they see themselves as stewards to Shoal Lake and are therefore the appropriate ones to manage and regulate its fisheries. Whether it be a commercial fishery, a sport / angling fishery or tourism industry, IIFN fishers believe that they have the expert local knowledge and vested interest in ensuring an effective regulatory presence on the lake, which is something that they perceive current managers are unable to do. This sentiment is described below:

"[MNR] should just sit back and let the band run it. Uh, we might not have the resources to run it, but that is where the rest of Treaty 3 should step in - the other bands where we could hire in off the other reserves to bring their…specialties here or whatever. Because we do not have the man-power…so we'd have to hire out help off other reserves."

(Wayne Holmstrom, interview 001, 2011)

In this statement, this IIFN fisher acknowledges the significant amount of work, knowledge and personnel that is required for effective regulation of the lake. He

believes community-based regulation is the most effectively way to protect walleye populations from over-harvesting if markets were open to them. He also sees it as a way to provide employment to other First Nations bands that are part of Treaty 3. Hiring aboriginal fishers from other First Nations would be required if Shoal Lake's fisheries would be regulated as tightly as he believes it needs to be. The following statement highlights some of the rigor involved in this community-based fisheries regulation:

> *"I'd like to see a tollgate at Ash Rapids – know who is in who is out. And at the landing…have a person there….fish licenses issued by the band…each boat out on the lake got a band member in the boat…if [a person is] fishing he has to have that license with him."*
>
> (Wayne Holmstrom, interview 001, 2011)

IIFN fishers feel that because they are on the lake throughout the year and know the aboriginal people who are fishing the lake, they are the most appropriate and effective parties to regulate these fishing activities. Also, through community-based fisheries regulations, Iskatewizaagegan cultural and spiritual values could be incorporated into management initiatives. IIFN fishers feel that this is necessary for sustainable Shoal Lake fisheries management.

7.5.6 Incorporating Traditional Practices

As described in previous sections of this chapter, Shoal Lake fisheries management has been approached through the lens of western scientific epistemologies. IIFN fishers believe that the collapse of the walleye population provides evidence that this form of management has proven to be ineffective. Some IIFN fishers believe that maintaining sustainable fisheries-based industries requires the incorporation of traditional Iskatewizaagegan teachings and practices into management practices. IIFN fishers lament the fact that the introduction of a commercial fishing industry and cash economy on Shoal Lake impacted how traditional teachings guided fishing practices. The introduction of

a commercial fishing industry is perceived to have caused IIFN members to relate to fish primarily as a financial resource. Some IIFN fishers believe that returning to the teachings and practices that have sustained Shoal Lake's fisheries for hundreds of years is an essential step in restoring the health and integrity of the Shoal Lake ecosystem and will also help support the vibrancy of IIFN culture and identity. One IIFN fishers describes this perspective below:

> *"That respect has to be both ways. Right now it's all one way and the people that are benefiting from the resources and the extraction of resources – whether it be through the taking of the resources – [the management] needs to be shared so that we too can implement our own ways and our own ways of building our practices: our values, our customs and our traditions…[Fishing is] not based on certain spiritual [teachings]… we've kind of gotten away from some of those teachings. And that needs to be re-taught.…I think we need to get back to some of the teachings that, you know, that's how it was done before."*
>
> (Randy Paishk, interview 008, 2011)

This statement highlights this IIFN fisher's view that traditional practices and spirituality are intimately connected to the ways people relate to resources and the harvesting of resources and should therefore be incorporated and help guide the management of Shoal Lake fisheries.

7.6 Chapter Summary

This chapter presented the perspective on Shoal Lake's fisheries management as held by IIFN fishers. It began by describing the management structure, highlighting the fact that IIFN has not signed onto the Shoal Lake Watershed Management Plan and described some of the reasons that IIFN does not participate in the multi-stakeholder group that governs management decisions (eg. SLWMWG). This lack of participation was linked to the history of poor relations between MNR and IIFN, which has caused a deeply ingrained mistrust of the government agency by IIFN fishers. Particularly, IIFN fishers perceive that

this mistrust is rooted in poor consultations and the refusal by MNR to share its "raw" unanalyzed fisheries data. Clashing worldviews and knowledge systems also highlight a fundamental root causes of these poor relations between MNR and IIFN. These factors have contributed to wariness on the part of IIFN towards the management approached of MNR and a belief that they are not operating in the best interest of the IIFN community.

Various criticisms of the management policies and regulations of MNR were presented. These demonstrate the perception held by IIFN fishers, that community fishers are best suited to make fisheries management decisions and enforce fisheries regulations. Some of the aboriginal fisheries management ideas held by IIFN were documented to highlight the active role that IIFN fishers want to play in the management of Shoal Lake fisheries. Of particular interest in contemporary community-based resource management initiatives is the incorporation of traditional teachings into management approaches. This chapter has demonstrated the various factors that are complicating contemporary Shoal Lake fisheries management. It has highlighted that IIFN fishers are conceiving of creative ways to adapt their fishing practices to contemporary political and economic circumstances, while still incorporating their cultural heritage and traditional teachings into management.

CHAPTER 8: DISCUSSION, CONCLUSIONS & FUTURE DIRECTIONS FOR SHOAL LAKE FISHERIES MANAGEMENT

The purpose of this thesis was to explore some of the linkages between contemporary IIFN fishing practices and the well-being of the community. It has taken into consideration the historic and contemporary developments on Shoal Lake and policy and legislation that have affected these practices. The aim of presenting this information is to document ways that IIFN local knowledge of Shoal Lake can contribute to the sustainable management of its fisheries. The specific objectives that guided this study were:

1) Understand the history and political/legislative context of the Shoal Lake fisheries.
2) Investigate IIFN perspectives on how resource developments affect Shoal Lake fish and fish populations.
3) Document contemporary IIFN fishing practice.
4) Understand IIFN's perceptions of how economic, political and policy structures and processes influence contemporary IIFN fishing practice.

These research objectives have attempted to clarify how IIFN members are adapting traditional resource harvesting practices of fishing to meet their needs within current political, economic and environmental circumstances. This chapter will synthesize my findings in relation to these objectives in order to provide conclusions of this study and recommendations for the future.

8.1 Study Limitations and Scope

Before I conclude this thesis, it is necessary to acknowledge the scope of the study and some of its limitations. The majority of the data for this research project was gathered during one field season that took place between the months of August and November in 2011. Most IIFN fishers undertake fishing practices

throughout the year, including the winter and spring seasons. The majority of my direct observational research was limited to only two of the seasons (summer and fall) of when this practice occurs. As a result, direct observational data of winter and spring fishing practices was not obtained during my fieldwork. It has been argued that direct participant observation is the most effective technique for understanding the informal rules and social organization surrounding fishing practices (Berkes et. al 2001). Therefore, it should be acknowledged that the length and timeframe of my field season are noteworthy limitations of this research.

I attempted to remedy this limitation by asking fishers about winter fishing practices throughout the course of my fieldwork. While I understand that this likely did not produce the rich source of data that would come from direct observation of winter fishing practices, I did stimulate in-depth discussions about these practices by applying open-ended research techniques, such as unstructured and semi-structured interviews. These methods allowed fishers to speak openly and at length about the fishing practices that I was unable to directly observe.

I also returned to the community several times after I had completed my fieldwork to maintain relationships and assist with other community projects that began during the course of my fieldwork. During community visits in December (2011), January (2012) and March (2012) I was able have some informal conversations with community members about winter fishing practices that were taking place at that time. This allowed me to get a general picture of what sort of fishing activities were taking place during these months. However, detailed observations that can only be made through direct participation in such activities limits this understanding. As a result, much of the results presented in this thesis reflect on summer and fall fishing activities.

A study that targets ways that fishing contributes to well-being could be approached in a variety of ways and pose a variety of questions. The scope of this

project generally focussed on the social and cultural aspects of contemporary IIFN fishing practices and the material and non-material ways that this contributes to well-being. Therefore, an in-depth analysis of economic yields obtained through fishing practices was not provided.

Finally, it should be noted that when I began my research, I was an outsider to the IIFN community and was raised with a different worldview and culture. Community researchers, IIFN fishers, and friends that I made in the community were all very generous in taking the time to teach me aspects of their culture and spirituality. However, it should be acknowledged that the recommendations and conclusions that I make in this chapter are based on my position and perspective as a researcher. It should be clear through the sentiment of this thesis and the results presented in the previous chapter, that sovereignty over knowledge and their territory is central to IIFN, and that decisions regarding new directions for Shoal Lake fisheries management will be based on what the community feel is appropriate.

8.2 Understanding the Political / Legislative History of the Shoal Lake Fisheries

Upon reflecting on the perspectives shared by IIFN fishers throughout this thesis, it is clear that in the past policy and legislation affecting the Shoal Lake fisheries has largely been imposed from the outside, with little consultation and involvement by the First Nation people of Shoal Lake. As a result, their traditional resource management practices have not been properly assessed or incorporated into Shoal Lake fisheries management, or more recently, watershed management approaches. The written communications between IIFN and MNR since the closure of the commercial walleye fishery highlighted a pattern of mistrust and differences in perspectives on several issues relating to fisheries management and the rights of IIFN people to the land, water and its resources. While aboriginal peoples rights are recognized in many management documents (eg. Shoal Lake Watershed Management Plan 2002), IIFN perceive that these

rights are not respected in practice. In addition, few documents actually report on the perspectives of IIFN fishers' and their observations about changes in Shoal Lake fish populations. This highlights two important aspects of conducting primary documentation research of Shoal Lake's political / legislative history. Firstly, historical documents must be analyzed with the critical understanding that they provide only one perspective that is rooted in a particular author's ideology and perspective. Secondly, policies implemented by government agencies do not always meet the needs of all stakeholders. In sum, Shoal Lake fisheries have a very contentious and complicated political / legislative history. To understand all aspects of this history would require an in depth political ecology study that considers the drivers for local, regional and national policies and legislation.

8.3 IIFN Perspectives on Resource Developments and Impacts to Fish, Water and Community

To understand the perspective held by IIFN fishers on how resource developments have affected, and continue to affect, Shoal Lake fish and fish populations required many hours of discussions with IIFN fishers. These discussions with IIFN fishers took place during fishing activities on the lake and later with them in their homes. This included informal discussions, open-ended and semi-structured interviews with expert community fishers, most of whom came from a long history of commercial fishing families. The perceptions of how resource developments are affecting fish populations were strikingly consistent among the fishers. Every IIFN fishers that I interviewed emphasized that the main factors affecting fish and fish populations were the following:

- opening of Ash Rapids
- the City of Winnipeg Water intake and supporting infrastructure
- the Falcon River
- cottage development
- closure of the commercial walleye fishery

Other issues affecting fish and fish populations that were inconsistently raised by IIFN fishers include:

- past forestry operations
- past mining operations

Contrary to the perspectives held by IIFN fishers, western knowledge (eg. Shoal Lake Watershed Management Plan; FWIN studies 1998; 2000; 2001; 2006) has determined that these factors are not significantly influencing Shoal Lake fish and fish populations. While certain factors, such as fish spawn, larval and juvenile fish mortality resulting from the intake are acknowledged in some management documents, MNR generally attributes walleye population crashes and its slow recovery to over-harvesting, and in particular, aboriginal over-harvesting. This highlights a fundamental difference in perspective between the two parties, which has considerable implications for effective Shoal Lake fisheries management. In particular, this has led IIFN to believe that MNR is not operating in the best interest of the First Nation or IIFN fishers. This has resulted in a deeply ingrained mistrust for the government agency.

If MNR wishes to involve IIFN in a collaborative multi-stakeholder approach to fisheries management, these differences in perspective must be acknowledged and the local knowledge held by IIFN must be respected and used to inform future management models and processes of implementing management initiatives. A first step would be for MNR to undertake studies that specifically address the concerns IIFN has regarding factors impacting fish populations. In order for this initiative to be meaningful to IIFN, MNR must share the "raw" analyzed data so that IIFN can evaluate the results themselves. Due to a history of poor consultation by MNR and refusal to share unanalyzed fisheries data with IIFN, the First Nation is unlikely to accept results that contradict their view of factors impacting the fish populations unless they are provided with the "raw" unanalyzed data of such studies.

8.4 Contemporary IIFN Fishing Practices and Community Well-Being

Despite impacts from resource developments and policies and legislation that have affected their fishing practice, IIFN is still very much a fishing community. Results from Chapter 6 indicate that the vast majority of IIFN households continue to partake in a variety of fishing activities throughout the year. Due to limited participation in commercial fishing activities, the majority of IIFN fishers harvest fish through angling practices. Today many IIFN fishers characterize their fishing practice as a subsistence, leisure or a sport activity whereas in the past it was considered "a regular job" (Jim Holmstrom, interview 002, 2011). With this stated, there are a number of IIFN fishers who still partake in commercial fishing activities, and several IIFN fishers that were interviewed for this study emphasized that they would return to this livelihood if a commercial walleye fishery was reopened.

Walleye has been an integral fish species to IIFN throughout the commercial fishing period (1920s – 1983) and remains an important food source for the average IIFN household diet. Today, most IIFN households eat walleye regularly – somewhere between once a week and once a month – and perceive it to be an essential food source for the Iskatewizaagegan diet. Other fish species, such as lake whitefish and white sucker are also perceived to be highly preferred subsistence fish, however, they are not consumed regularly in the summer months. Seasonal household surveys in the winter and spring seasons will reveal how the frequency that these species are consumed in these seasons. Bass and northern pike are also consumed by IIFN, but are not the preferred fish species for consumption for the majority of IIFN members.

Contemporary IIFN fishing activities occur frequently during every season of the year, whereas other traditional resource harvesting activities (eg. hunting, trapping and gathering plants) show a higher degree of seasonality. IIFN members do not perceive that there are as many barriers to fishing activities as

there are to other land-based practices and identify fishing as an essential aspect of their culture and identity.

Interviews with IIFN fishers emphasize cultural and spiritual aspects of engaging in fishing activities. By being out on the lake and partaking in fishing activities, individuals strengthen their relationship with the land, lake and its spirits, which reinforces a sense of Iskatewizaagegan identity. In addition, this activity provides an avenue for Elders and knowledgeable IIFN fishers to convey cultural knowledge about fishing and other resource harvesting activities to younger generations. Therefore, imbedded in this practice are fundamental lessons of survival and "what it is to be Iskatewizaagegan" - lessons such as the importance of respect for Elders, respect for the animals that share the landscape, and respect for the Great Spirit that watches over it. This highlights some of the intangible and non-material benefits that are rooted in contemporary fishing practices, which are essential for strengthening IIFN culture and ensuring the continuation of this practice in the future.

Acts of sharing emerged as a significant outcome of contemporary fishing practice. In fact, sharing is one of the most common ways that individuals obtain fish for consumption. The act of sharing country food is a community tradition and a cultural sign of respect. It is a symbolic way to give thanks to the lake and the Creator for providing food to its people. The act of sharing is also instrumental in strengthening social networks within the community and contributing to good social relations among family groups and the broader community. Carrying out this tradition, individuals enjoy a sense of pride in being able to provide a healthy form of sustenance to family members and the community. They also feel a spiritual connection with the ancestors who are watching over them. Individuals that are able to provide fish to family and community members enjoy a subtle but observable element of prestige, which contributes to a positive and healthy psychological state.

In summary, these various aspects of contemporary IIFN fishing practice highlight its contribution to the well-being of the community in a variety of material and non-material ways. Contemporary IIFN fishing practices are integral to the community's physical and psychological health and strengthen Iskatewizaagegan culture, identity and spirituality.

8.5 Government Policies, Process, and Structures: Influences on Contemporary IIFN Fishing Practices

To a certain extent IIFN fishers perceive that a variety of government policy processes and structures influence their contemporary fishing practices. As described in Chapter 4 and 5, the most dramatic influence on IIFN fishing practices occurred with the closure of the commercial walleye in the spring of 1983. This effectively changed the practice of fishing from a livelihood activity that supported individuals and families financially, to a practice that was mainly relied on for subsistence, leisure and cultural purposes. As described earlier, MNR continues to manage commercial lake whitefish and northern pike fisheries through a quota system that restricts the total allowable catch. I did not interview any IIFN fishers who partake in the commercial sale of northern pike. Those that partake in the commercial sale of lake whitefish suggested that the quota limit was too low to sustain a livelihood year round. As a result, contemporary IIFN fishers perceive that the commercial sale of lake whitefish can only serve as a supplementary income during particular seasons. The closure of the commercial walleye fishery and the introduction of a commercial catch quota system for lake whitefish therefore have drastically influenced contemporary IIFN fishing practice. In response to these policies, IIFN fishers have adapted their practice to serve other social, cultural and dietary needs.

Another policy that is perceived to have influenced contemporary IIFN fishing practice is the City of Winnipeg's mandate to withdraw water from Shoal Lake for sale to Winnipeg residents. IIFN fishers perceive that this policy has caused a gradual but perpetual deterioration in water quality on Shoal Lake, as water

from Lake of the Woods continues to flow into the lake via Ash Rapids. The inflow of water from Falcon Lake is perceived to be exacerbating these effects. IIFN members are concerned with the potential impacts that decreasing water quality is having on the health of the fish that they eat and had in some cases, affecting whether or not IIFN fishers consume fish from the lake. For example, when IIFN fishers catch fish that have warts or legions, they often throw them back, not knowing if they are safe to eat (Randy Paishk, interview 008, 2011). As a result, issues of water quality and water quantity seem to be affecting the contemporary fishing practices of some IIFN fishers.

It is also perceived that this inflow of water has altered the lake's ecology by introducing both smallmouth bass and largemouth bass. The introduction of bass into the lake has stimulated an interest in sport and leisure fishing by IIFN fishers. Bass species are usually not targeted for consumption, which was the traditional purpose of fishing activities. With the growing populations of smallmouth and largemouth bass in Shoal Lake, the community has embraced the sport fishing industry by organizing a variety of fishing tournaments, including one in the spring "Bass Classic" and one in the fall "Last Chance Bass Tournament". These tournaments attract sport fishers from areas all over Canada and the United States. The community generally does not benefit from these tournaments financially. However, they provide entertainment and socializing for the community.

Traditional techniques of gill net fishing are not practiced as regularly as in the past. However, traditional teachings that are rooted in fishing practices are still upheld in contemporary fishing activities. IIFN fishers still hold the knowledge of traditional fishing techniques and still harvest fish using gill nets for subsistence purposes when fish is needed for family, friends or the broader community. Contemporary and future policies will likely complicate contemporary IIFN fishing practice, as the City of Winnipeg seeks approval to extend its water service to neighboring rural municipalities and increase the amount of water it withdraws from Shoal Lake. To date, IIFN has shown ingenuity in culturally

adapting their fishing practices to meet their needs within changing political, economic and environmental circumstances. Time will tell how future policies will impact IIFN fishing practices.

8.6 Future Directions for Shoal Lake Fisheries Management

This study has highlighted various environmental, institutional and political factors that complicate Shoal Lake fisheries management. Previous natural resource management studies undertaken in the mid-1990s highlight the conflicts between Shoal Lake First Nations and government agencies over the management of Shoal Lake's resources (Bosnich 1995). In particular, disputes over water quality and water quantity were perceived to be impeding cooperation between parties. A main recommendation of that study was to bring stakeholders together and establish a co-management authority to oversee future management over the lake and its resources (Bosnish 1995).

The Shoal Lake Watershed Management Plan (2002) also recommends the establishment of a co-management advisory committee made up of MNR and Shoal Lake First Nations. The plan recommends ways to address many of the concerns relating to fisheries management that have been highlighted by IIFN fishers in this thesis. They include: the development of a cooperative fisheries monitoring program; First Nations expanded role in the management of natural resources; blending of scientific knowledge and Shoal Lake First Nation's TEK; sharing results from fisheries studies in a timely matter; implementation of measures to minimize the impact of the intake on walleye and lake whitefish populations; and, the promotion and support of resource-related economic opportunities for Shoal Lake First Nations (Shoal Lake Watershed Management Working Group 2002). Unfortunately, progress on these initiatives has been impeded by a deeply ingrained lack of trust for MNR by IIFN.

IIFN fishers perceive that many factors impact the health and integrity of Shoal Lake. These have in turn effected the contemporary fishing practices and as a

result the well-being of the community. The following recommendations suggest ways that IIFN can increase its participation and stewardship of Shoal Lake's fisheries management. These recommendations would help to ensure that sustainable IIFN fishing practices, which are based on local knowledge and traditional teachings, are carried on by future generations.

The first set of recommendations address the impacts on the environment from past and contemporary developments, as perceived by IIFN fishers. The second set addresses the impacts to contemporary IIFN fishing practices resulting from management policies and poor relations with MNR. The last set of recommendations present avenues that IIFN could explore to develop a sustainable fishing economy for future generations.

8.6.1 Community-Based Watershed Management

As indicated in Chapter 4, IIFN perceive that a variety of past resource developments are continuing to impact Shoal Lake's water quality, water quantity and fish populations. The impacts that are most easily quantifiable are:

- Pollutants entering Shoal Lake via Lake of the Woods and Falcon Lake
- Fish mortality from the City of Winnipeg water intake and its associated dyke

Although some studies have been undertaken to determine the effects of these resource developments on fish populations and water quality, IIFN fishers believe that up-to-date studies should be undertaken to evaluate contemporary effects. In addition, it is recommended that multi-year studies that monitor these effects be undertaken. The design of such studies should emerge out of discussions with expert IIFN fishers, but could include:

1) a water quality monitoring study at the outlets of Ash Rapids and the Falcon River to determine how the inflow of these water bodies are affecting water quality on Shoal Lake;

2) a multi-year fish monitoring study at the water intake that quantifies the mortality of spawn, larval, and juvenile fish during relevant spawning seasons for lake whitefish, white sucker and walleye

The specific design and methodology of these studies would require the skills and expertise of trained specialists in the areas of water chemistry and fisheries biology. IIFN could therefore explore two potential avenues to manage these studies. Firstly, they could approach responsible government agencies, such as MNR and the City of Winnipeg, and request that their trained specialists conduct the studies under the condition that the raw data will be shared with IIFN. For this approach to work, there must be a commitment by the government agencies to the pluralistic generation and sharing of knowledge (Armitage et al. 2007). It is necessary for IIFN to be involved in the study design and evaluate the "raw" unanalyzed data before conclusions are drawn by the government agencies. Existing studies suggest that community involvement and community ownership are essential for ensuring the success of co-management arrangements (Ayles et al. 2007).

Alternatively, IIFN could hire its own independent consultants to conduct the work on their behalf. This would seem to be advantageous, given IIFN's mistrust for the aforementioned government agencies. However, the main obstacle of taking this route would be securing funding for the studies, which would likely require funding from those same parties. In either case, for IIFN to have up-to-date data on the effects of these resource developments is seen as a priority to IIFN fishers.

In the summer of 2011, IIFN undertook community-based studies to gather its own fisheries data and document contemporary IIFN resource harvesting data. The data gathered for this thesis is part of this initiative. The studies proposed above could be a continuation of this initiative for IIFN to build capacity to manage its own watershed and develop its own First Nations watershed management plan. A main recommendation of this thesis is for the community to

prioritize this community-based research initiative as an essential step in building capacity to manage its own watershed and exerting its sovereignty over its traditional lands.

8.6.2 Support Sustainable IIFN Fishing Practices

As indicated in Chapter 7, IIFN fishers have thought of various ways to re-establish an IIFN fishing economy. The following recommendations are made to support the proliferation of IIFN fishing practices in future generations, and explore avenues for future fishing economies.

1) Re-establish educational fishing programs (eg. “take a kid fishing day”) for students through the David Kejick School to learn survival skills and traditional resource harvesting practices
2) Establish a IIFN fishers advisory board

The first recommendation highlights the importance of finding a way of ensuring the survival of IIFN fishing practices in future generations. Due to the tangible material benefits, combined with the myriad of ways that this practice helps strengthen IIFN culture and spirituality, re-establishing educational fishing programs should be considered a priority. This thesis acknowledges that programs, such as the fall harvest, are successful at conveying IIFN values and culture to younger generations. By engaging IIFN youth, these programs build stewardship of the Shoal Lake watershed. Contemporary IIFN fishers specifically reflected on the importance of “take a kid fishing day” for stimulating their interest developing their fishing practice. This study recommends that the re-establishment of this program through the David Kejick Memorial School would be beneficial to sustaining IIFN fishing practices that are rooted in traditional teachings, which is an essential step for sustainable Shoal Lake watershed management.

The second recommendation is in response to the variety of potential options that IIFN fishers are willing to entertain to re-establish a fishing economy for

IIFN. Due to the variety of options that could be explored, and a lack of knowledge of the feasibility of each option, this study recommends that an important first step in re-establishing a locally controlled fishing economy is for IIFN fishers to establish an organizational structure to help guide in future decision-making relating to fisheries. Interest has been expressed in finding creative ways to bring back a commercial walleye fishery, whether it be through the establishment of a fish hatchery or a stocking program to stabilize walleye populations. Those who are actively participating in these practices must decide the future of an IIFN fishing economy. This study suggests that organized discussions amongst expert IIFN fishers, Elders and Chief and Council will help determine the most suitable way to move forward.

8.6.3 Community-Based Fisheries Management

As described in Chapter 7, there are several factors complicating the management of the Shoal Lake fisheries. IIFN fishers highlighted a variety of issues that must be addressed for MNR and IIFN to be able to work together. Only time will tell whether or not these differences can be overcome. However, there are specific steps that can be taken on the part of both parties to reconcile some of these differences and attempt to work together. Given the poor approaches to community involvement in the past, MNR needs to take initiative in restoring the relationship with IIFN and its community fishers. An important step would be a formal commitment to share the "raw" unanalyzed fisheries data that they collect with the First Nation. A FWIN project was undertaken in the fall of 2011, which provides a timely opportunity to begin this sharing initiative.

A second step would be exploring avenues for involving IIFN fishers in the enforcement of fisheries regulations. As highlighted by Berkes et al. (2001) "fishers, the real day-to-day managers of the resource, must be equal and active participants in fishery management" (p.199). One option to achieve this could be to hire IIFN fishers to monitor Shoal Lake fishing activity to ensure that it is following their guidelines. This could be an essential symbolic step in recognizing

IIFN's authority over Shoal Lake and its resources. This step would require reconciliation and forgiveness on the part of IIFN to be able to work for and along side MNR. It would need to be determined whether there are individual IIFN fishers who would be interested or willing to bridge this gap.

8.7 Conclusion

Contemporary IIFN fishing practices provide a useful analytical lens for exploring the myriad of ways that traditional resource harvesting practices contribute to First Nations peoples' well-being. These practices provide a framework for understanding the material, relational, social, and psychological aspects of land-based practices and the manner in which they reinforce First Nations' cultures. Characteristics of IIFN fishing practices documented in this thesis support Bourdieu's (1977) theories on social practice in the manner by which they help structure and organize IIFN culture and society. IIFN fishing practices continue to be formed and reformed through interaction in the material and social worlds. They encompass essential aspects of IIFN members' *habitus,* which articulate Iskatewizaagegan identity and help structure and organize their culture and spirituality. IIFN continues to adapt their fishing practices to provide a variety of material and non-material benefits within changing political and economic circumstances. This highlights the creative agency of individual IIFN fishers that function within structural and external factors (Reckwits 2002).

Contemporary IIFN fishing practices contribute to a better understanding of how ecosystems contribute to human well-being and highlight a variety of issues relating to local and indigenous peoples role in natural resource and environmental management. Sustaining IIFN's dynamic fishing traditions is an essential step for ensuring the well-being of the Iskatewizaagegan people. IIFN fishers insist that to ensure the health of the lake and its people, their community must take a leadership role in management decisions surrounding the lake and its fisheries. The dilemmas associated with the management of the Shoal Lake fisheries are mirrored in small-scale fresh-water fishing conflicts with First

Nations peoples throughout Canada. As noted by Koenig (2005) "native representatives are asking for greater access to and control of resources for reasons that include enhanced economic opportunities and also involve broader social, political, and cultural issues" (p.3). For IIFN to consider participating in MNR's models for Shoal Lake fisheries management would require a commitment of both parties to undergo a process of reconciliation and healing. Given the unequal power relations that exist within this context, this process should be initiated by MNR.

The community is presently building its capacity to manage its own resources, by undertaking a variety of research projects to generate baseline data about the lake and its resources. This initiative was generated in response to a history of poor relations and lack of trust with MNR and is a symbolic step for IIFN to exert its sovereignty and authority over the lake and its resources. Multiple avenues can be explored to re-establish a fishing economy for the IIFN community and their involvement in the management of the resources is essential to this process. While government imposed fisheries policies have drastically impacted IIFN, the community has shown ingenuity in culturally adapting their fishing practices within changing political, economic and environmental circumstances. The pride and integrity of the Iskatewizaagegan culture is exemplified through the resilience of its fishing practices over the past several hundred years. Whether MNR and IIFN will begin a process of reconciliation remains to be seen. Whether or not this occurs, IIFN has shown that it will continue to assume its custodial responsibilities over Shoal Lake and its resources in the future and will make its best efforts to ensure its territory remains healthy for future generations of Iskatewizaagegan people.

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APPENDICES

APPENDIX 1: Interview Schedule

Objective 3: Document contemporary fishing practice.

How old were you when you began fishing?

Who did you learn to fish from? Can you describe how you learned to fish?

Who would you fish with when you were growing up?

How often do you get out on the water to fish (summer, fall, winter, spring, year round)?

Why do you partake in fishing activities? (commercial sale, food, share / gifts)

What gear do you use you use to harvest fish? (rods, nets, both)

Are you teaching anyone how to fish right now? If so, who?

Who do you usually fish with? What is your relationship to that person?

If you share fish, who do you usually share fish with? (family members, elders, etc.)

Why do you share the fish that you catch?

Objective 4: Understand IIFN's perceptions of how economic, political and policy structures and processes influence IIFN fishing practice.

Describe any changes to the Shoal Lake fisheries that you've observed during your lifetime / time fishing?

Have these changes impacted any of the resources that you harvest?

Has your livelihood been impacted by these changes? If so, how?

What is the result of these changes on your ability to practice traditional activities?

Do financial costs associated with fishing affect your ability or desire to fish?

How would you characterize your relationship with MNR?

How do they affect your fishing practice?

How do imposed fishing quotas affect your fishing practice?

Do any other fishing regulations affect your fishing practice? If so, how?

Objective 2: Investigate IIFN's perspectives on how resource developments affect Shoal Lake fish and fish populations.

From your experience and perspective, can you describe how healthy you would consider Shoal Lake to be?

From your experience and perspective, how healthy would you consider Shoal Lake fish populations to be?

What would you consider to be the biggest factors affecting fish populations on Shoal Lake?

How has the opening of Ash Rapids affected fish (walleye, whitefish, northern pike) populations?

How has the water intake affected fish and fish populations?

Have mining explorations and related activities affected fish and fish populations? If so, how?

Have cottage developments affected fish and fish populations? If so, how?

Have sport-fishing lodges affected fish and fish populations? If so, how?

Are their any other factors affecting fish and fish populations? If so, what are they?

APPENDIX 2: Household Survey

ISKATEWIZAAGEGAN No. 39 HOUSEHOLD SURVEY, SUMMER 2011:

Land and Water Use Survey

1. Date / Time : _____

2. Interviewer : _____

1. HOUSEHOLD INFORMATION

1.1 Household Number: _____

Table 1 – Details of individuals in household.

**** Optional***

1.1. Name	1.2. Age	1.3. Sex	1.4. Education	1.5. *Primary Income (Employed by Band / E.I. / Social Assistance / Employed off-reserve / Tourism / Self-employed / other)
1		M F		
2		M F		
3		M F		
4		M F		
5		M F		
6		M F		
7		M F		

** Age Categories: a) 0 -9 b) 10-19 c) 20-29 d) 30-39 e) 40-49 f) 50-59 g) 60+*

1.2 Does your household have access to a boat / truck / ATV? Please identify.

_____

1.3 Has your household been out on the land and water for leisure / recreational purposes in the last 3 months? Please identify.

- Camping
- Waterskiing
- Swimming / cliff jumping
- Shore lunch
- Relaxation / scenery

Other _____

1.4 What resource use practices have members of your household partaken in throughout the last 3 months?

- Fishing
- Hunting
- Trapping
- Gathering (plants / medicines)

Other -_____

Table 2.1a Harvesting - Fishing

Resource Activity	**1.** What seasons does your household practice this resource activity?	**2. Frequency:** How often has your household practiced this activity in the last 3 months?	**3. Barriers:** If you are not practicing any of these activities, what would you consider to be your largest barriers to your participation?	**4.** Who in your houshold has practiced this activity in the last 3 months?	**5.** Why does your household practice this resource activity?	**5a.** Who did you share fish with that you've harvested in the last 3 months?	**6. Species:** What species has your household harvested in the last 3 months?	**7.** Where does your household usually harvest this species?	**7a.** Why does your household leave this area to harvest this species?	**8.** What gear does your household use to harvest this species?	**9.** Who did you learn this activity from?	**10.** Who are you teaching this activity to?	**11.** If you catch a fish that you consider to be too large, do you release it?
FISHING	a. summer b. fall c. winter d. spring e. all of the above	a. not at all b. once a month c. once a week d. everyday	a. acces b. costs c. time d. equipment e. knowledge f. lack of interest g. other	* (see Table 1.0)	a. food / subsistence b. to sell / livelihood c. to share / gift d. leisure e. traditional delicacy f. spiritual purposes	a. father / mother b. grandmother / grandfather c. uncle / aunt d. brother / sister e. cousin f. elders g. friend h. out of town visitor h. other	Walleye Perch Whitefish Northern Pike Bass White Sucker Crappie Lake Trout Other: Other:	a. Shoal Lake b. Crowduck Lake c. High Lake d. Lake of the Woods (KBI Tournament) e. traditional land use Area / trapline f. other	a. availability of resource b. abundance of resource c. sport / tournament d. fewer harvesters e. traditional land use area / trapline f. other	a. nets b. fishing rods (angling)	a. father / mother b. grandfather / grandmother c. uncle / aunt d. brother / sister e. cousin f. other	a. niece / nephew b. son / daughter c. friend d. brother / sister e. cousin f. other	Comments:
	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:				Comments:	Comments:	
	HOUSEHOLD QUESTIONS										INDIVIDUAL QUESTIONS		

Comments:

Table 2.1b Consumption - Fishing

Resource Activity	**1.** Which of these species has your household consumed in the last 3 months?	**2. Frequency:** How often has your household consumed this resource in the last 3 months?	**3.** Who in your household has consumed this resource in the last 3 months?	**4.** How does your household obtain the resources that you consume?	**5.** Does your household prepare this resource for immediate consumption? If so, how?	**6.** Does your household preserve this resource for future use? If so, how?	**7.** In general, how would you describe your household's preference for consuming each resource?
FISHING	Walleye		* (see Table 1)				
	Perch						
	Whitefish						
	Northern Pike						
	Bass						
	White Sucker						
	Crappie						
	Trout						
	Other:						
	Comments:	a. never b. once a month c. once a week d. everyday		a. harvested b. gifted / shared c. purchased d. other	a. battered & deep fried b. pan fried c. baked d. smoked e. boiled f. other	a. freeze b. smoked c. other	a. highly preferred b. preferred c. desirable d. undesirable e. highly undesirable
		Comments:		Comments:	Comments:	Comments:	Comments:

Table 2.2a Harvesting - Hunting

Resource Activity	**1.** What seasons does your household practice this resource activity?	**2. Frequency:** How often has your household practiced this activity in the last 3 months?	**3. Barriers:** If you are not practicing any of these activities, what would you consider to be your largest barriers to your participation?	**4.** Who in your houshold has practiced this activity in the last 3 months?	**5.** Why does your household practice this resource activity?	**5a.** Who did you share the meat with that you've harvested in the last 3 months?	**6. Species:** What species does your household harvest?	**7.** Where does your household usually harvest this species?	**7a.** Why does your household leave this area to harvest this species?	**8.** Who did you learn this activity from?	**9.** Who are you teaching this activity to?
HUNTING	a. summer b. fall c. winter d. spring e. all of the above	a. not at all b. once a month c. once a week d. everyday	a. acces b. costs c. time d. equipment e. knowledge f. lack of interest g. other	* (see Table 1.0)	a. food / subsistence b. to sell / livelihood c. to share / gift d. leisure e. traditional delicacy f. spiritual purposes	a. father / mother b. grandmother / grandfather c. uncle / aunt d. brother / sister e. cousin f. elders g. out of town visitor h. other	Deer Moose Duck Geese Other: Other: Other: Other: Other:	a. Shoal Lake b. Crowduck Lake c. High Lake d. Lake of the Woods (KBI Tournament) e. Other	a. availability of resource b. abundance of resource c. sport / tournament d. fewer harvesters e. other	a. father / mother b. grandfather / grandmother c. uncle / aunt d. brother / sister e. cousin f. other	a. niece / nephew b. son / daughter c. friend d. brother / sister e. cousin f. other
	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
	HOUSEHOLD QUESTIONS									INDIVIDUAL QUESTIONS	

Comments:

Table 2.3a Harvesting - Trapping

Resource Activity	**1.** What seasons does your household practice this resource activity?	**2. Frequency:** How often has your household practiced this activity in the last 3 months?	**3. Barriers:** If you are not practicing any of these activities, what would you consider to be your largest barriers to your participation?	**4.** Who in your houshold has practiced this activity in the last 3 months?	**5.** Why does your household practice this resource activity?	**5a.** Who did you share the meat with that you've harvested in the last 3 months?	**6. Species:** What species has your household harvested in the last 3 months?	**7.** Where does your household usually harvest this species?	**7a.** Why does your household leave this area to harvest this species?	**8.** Who did you learn this activity from?	**9.** Who are you teaching this activity to?
TRAPPING	a. summer b. fall c. winter d. spring e. all of the above	a. not at all b. once a month c. once a week d. everyday	a. acces b. costs c. time d. equipment e. knowledge f. lack of interest g. other	* (see Table 1.0)	a. food / subsistence b. to sell / livelihood c. to share / gift d. leisure e. traditional delicacy f. spiritual purposes	a. father / mother b. grandmother / grandfather c. uncle / aunt d. brother / sister e. cousin f. elders g. friend h. out of town visitor i. other	Muskrat Beaver Otter Rabbit Marten Fox Other: Other: Other: Other:	a. Shoal Lake b. Crowduck Lake c. High Lake d. Lake of the Woods e. traditional land use area / trapline f. other	a. availability of resource b. abundance of resource c. sport / tournament d. fewer harvesters e. traditional land use area / trapline f. other	a. father / mother b. grandfather / grandmother c. uncle / aunt d. brother / sister e. cousin f. other	a. niece / nephew b. son / daughter c. friend d. brother / sister e. cousin f. other
	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
	HOUSEHOLD QUESTIONS									INDIVIDUAL QUESTIONS	

Comments:

Table 2.2b / 2.3b Consumption - Hunting / Trapping

Resource Activity	**1.** Which of these species has your household consumed in the last 3 months?	**2. Frequency:** How often has your household consumed this resource in the last 3 months?	**3.** Who in your household has consumed this resource in the last 3 months?	**4.** How do you obtain the resources that you consume?	**5.** Does your household prepare this resource for immediate consumption? If so, how?	**6.** Does your household preserve this resource for future use? If so, how?	**7.** In general, how would you describe your household's preference for consuming each resource?
HUNTING / TRAPPING	Deer		* (see Table 1)				
	Moose						
	Duck						
	Geese						
	Muskrat						
	Beaver						
	Rabbit						
	Marten						
	Other:						
	Other:						
	Comments:	a. never b. once a month c. once a week d. everyday		a. harvested b. gifted / shared c. purchased d. other	a. fried b. stew / soup c. baked d. smoked e. boiled f. other	a. freeze b. smoked c. other	a. highly preferred b. preferred c. desirable d. undesirable e. least desirable
		Comments:		Comments:	Comments:	Comments:	Comments:

Table 2.4a Harvesting - Gathering (plants and medicines)

Resource Activity	**1.** What seasons does your household practice this resource activity?	**2. Frequency:** How often has your household practiced this activity in the last 3 months?	**3. Barriers:** If you are not practicing any of these activities, what would you consider to be your largest barriers to your participation?	**4.** Who in your houshold has practiced this activity in the last 3 months?	**5.** Why does your household practice this resource activity?	**5a.** Who did you share the plants with that you've harvested in the last 3 months?	**6. Species:** What species has your household harvested in the last 3 months?	**7.** Where does your household usually harvest this species?	**7a.** Why does your household leave this area to harvest this species?	**8.** Who did you learn this activity from?	**9.** Who are you teaching this activity to?
GATHERING - PLANTS	a. summer b. fall c. winter d. spring e. all of the above	a. not at all b. once a month c. once a week d. everyday	a. acces b. costs c. time d. equipment e. knowledge f. lack of interest g. other	* (see Table 1.0)	a. food / subsistence b. to sell / livelihood c. to share / gift d. leisure e. traditional delicacy f. spiritual purposes	a. father / mother b. grandmother / grandfather c. uncle / aunt d. brother / sister e. cousin f. elders g. friend h. out of town visitor i. other	Blueberries Raspberreis Strawberries Cedar Sweet Grass Sage Weekay Wild Rice Birch Bark Tree Bows: Other:	a. Shoal Lake b. Crowduck Lake c. High Lake d. Lake of the Woods e. traditional land use area / trapline f. other	a. availability of resource b. abundance of resource c. sport / tournament d. fewer harvesters e. traditional land use area / trapline f. other	a. father / mother b. grandfather / grandmother c. uncle / aunt d. brother / sister e. cousin f. other	a. niece / nephew b. son / daughter c. friend d. brother / sister e. cousin f. other
	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
	HOUSEHOLD QUESTIONS									INDIVIDUAL QUESTIONS	

Comments:

Table 2.4b Consumption - Plant Foods

Resource Activity	**1.** Which of these species has your household consumed in the last 3 months?	**2. Frequency:** How often has your household consumed this resource in the last 3 months?	**3.** Who in your household has used this resource in the last 3 months?	**4.** How do you obtain the resources that you consume?	**5.** Does your household prepare this resource for immediate consumption? If so, how?	**6.** Does your household preserve this resource for future use? If so, how?	**7.** In general, how would you describe your household's preference for consuming each resource?
GATHERING - PLANTS	Blueberries		* (see Table 1)				
	Raspberreis						
	Strawberries						
	Wild Rice						
	Other:						
	Other:						
	Other:						
	Other:						
	Comments:	a. not at all b. once a month c. once a week d. everyday e. other		a. harvested b. gifted / shared c. purchased d. other	a. fried b. fresh c. boiled d. other	a. freeze it b. make preserves c. dry it and store it d.other	a. highly preferred b. preferred c. desirable d. undesirable e. least desirable
		Comments:		Comments:	Comments:	Comments:	Comments:

Table 2.4c Gathering - Traditional Plant Medicines

Resource Activity	**1.** Has your household utilized traditional medicines in the last 3 months? (y /n)	**2. Frequency:** How often has your household utilized this resource in the last 3 months?	**3.** Who in your household has used this resource in the last 3 months?	**4.** How do you obtain the resources that you use?	**5.** Does your household preserve this resource for future use? (yes / no) If so, how?
GATHERING - MEDICINES			* (see Table 1)		
	Comments:	a. not at all b. once a month c. once a week d. everyday e. other		a. harvested b. gifted / shared c. purchased d. other	a. dry and store it b. other
		Comments:		Comments:	Comments:

Table 2.4d Gathering - Traditional Plant Technologies

Resource Activity	**1.** Has your household utilized traditional plant technologies in the last 3 months? (y /n)	**2. Frequency:** How often has your household utilized this resource in the last 3 months?	**3.** Who in your household has used this resource in the last 3 months?	**4.** How do you obtain the resources that you use?
GATHERING - MEDICINES			* (see Table 1)	
	Comments:	a. never b. once a month c. once a week d. everyday e. other		a. harvested b. gifted / shared c. purchased d. other
		Comments:		Comments:

APPENDIX 3: Ethics Approval Form

UNIVERSITY OF MANITOBA | Ethics
Office of the Vice-President (Research)

CTC Building
208 - 194 Dafoe Road
Winnipeg, MB R3T 2N2
Fax (204) 269-7173
www.umanitoba.ca/research

APPROVAL CERTIFICATE

August 10, 2011

TO: **Richard Bolton** (Advisor I. Davidson-Hunt)
Principal Investigator

FROM: XXXXXXX, **Chair**
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2011:083**
"Iskatewizaagegan No. 39 Independent First Nation Contemporary Fishing Practices: Anishinaabe Perspectives on Well-being, Knowledge and Practice"

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement (2). This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- **If you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to the Office of Research Services, fax 261-0325 - please include the name of the funding agency and your UM Project number. This must be faxed before your account can be accessed.**

- **if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.**

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba Ethics of Research Involving Humans.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/ors/ethics/ors_ethics_human_REB_forms_guidelines.html) **in order to be in compliance with Tri-Council Guidelines.**

APPENDIX 4: Research Protocol

RESEARCH MEMORANDUM OF UNDERSTANDING ("MOU")

BETWEEN:

ISKATEWIZAAGEGAN #39 INDEPENDENT FIRST NATION

(the "Nation")

- and -

THE NATURAL RESOURCES INSTITUTE of
THE UNIVERSITY OF MANITOBA

(the "University")

PREAMBLE:

Whereas, the disposition, development, and utilization of the natural and cultural landscapes including, biological resources, wildlife, flora, fauna, and waters, located on aboriginal and present day nation territories of the Nation are under the Nation's full control and supervision; and

Whereas, the integrity and orientation of past, present, and future generations of the Iskatewizaagegan Independent First Nation is founded upon a unique and invaluable cultural, historical and environmental ethic. This Nation ethic defines and perpetuates a communal identity, language, history, and value system which involves an irrevocable cultural attachment to the native landscape ecology, and the human inseparability and interdependence with all Biodiversity; and

Whereas, the Iskatewizaagegan Independent First Nation has the right of self-determination and in exercising that inherent sovereign right must be recognized as the exclusive owner of Cultural Property; and

Whereas, the Cultural Property and biological resources have been, and continue to be, damaged, destroyed, stolen, misappropriated, both on the resident Territory and within the traditional use area, and Nation Members have been the subjects of Research for decades, with virtually no benefits returning back to the community from the Research; and

Whereas, the Nation finds that it is in the best interest of the Nation Community to establish a Research Project review process to prevent the continued abuses, to protect the Iskatewizaagegan Independent First Nation's traditional Indigenous intellectual property, and thereby to ensure our rights to continue to practice traditional lifeways and long term survival thereof; and

Whereas, the established Research Project review process is developed as a mechanism to improve relations between the Nation, and scientists/researchers, and to promote collaboration within the framework of mutual respect, equity, and empowerment, and to protect the Nation's collective right to free, prior, and informed consent to any research undertaken involving Nation Cultural Property.

Whereas, the University, as one of the leading research-intensive universities in Canada, is committed to the creation and dissemination of knowledge.

1.0 PURPOSE:

1.1 The purposes of this MOU are:

a) to protect the Iskatewizaagegan Independent First Nation, culture and natural resources of the Nation and the Nation's future generations from unauthorized scientific Research; and

b) to reduce the adverse effects of Research and related activities on the Nation Community; and

c) to ensure that the University recognizes Nation control over approval of Proposals for Research Projects undertaken within the Nation's jurisdiction and that the Nation shall have access to all data and information generated or produced by such Research Projects; and

d) to establish and provide a mandated basis for a process to review, and approve Research Projects undertaken within Nation jurisdiction or that impacts the Nation;

e) to facilitate cooperation and interaction between the Nation and the University with respect to Research Projects.

2.0 DEFINITIONS:

2.1 For purposes of this MOU:

a) "Arising Intellectual Property" means Intellectual Property that is made, conceived, developed, created or first reduced to practice in carrying out a Research Project within the scope of the MOU.

b) "Confidential Information" means any information disclosed by a Research Participant to the University that the Research Participant has requested to be confidential in their informed consent. Confidential Information shall not include any information which:

i) is already known to the University before receipt from a Research Participant as evidenced by written records;

ii) is generally available to the public or becomes publicly known through no fault of the University;

iii) is received by the University from a third party who had a legal right to disclose without restriction; or

iv) is developed by the University independently of and without reference to Confidential Information received from a Research Participant as evidenced by written records.

c) "Cultural Property" means the traditional Indigenous knowledge, cultural information, uses, and practices unique to the Nation's ways of life maintained and established over Nation homelands and aboriginal areas since time immemorial. This knowledge is based upon millennia of observation, habitation, and experience, and is a communal right held by the Nation, and in some instances by individuals. Cultural Property in a traditional Indigenous knowledge system context includes both tangible and intangible, historic and/or contemporary, which derives from unique historic or collective experience of the Nation, or is otherwise held collectively by the Nation. This property includes, but is not limited to, the following:

i) knowledge of remembered histories and traditions;

ii) details of cultural landscapes and particularly sites of cultural significance;

iii) records of contemporary events of historical and cultural significance;

iv) sacred property (images, sounds, knowledge, material, culture or anything that is deemed sacred by the community);

v) knowledge of current use, previous use, and/or potential use of plant and animal species, soils, minerals, objects;

vi) knowledge of preparation, processing, or storage of useful species;

vii) knowledge of formulations involving more than one ingredient;

viii) knowledge of individual species (planting methods, care for, selection criteria, etc.);

ix) knowledge of ecosystem conservation (methods of protecting or preserving a resource);

x) biological material that originate (or originated) on Nation Indigenous lands and Territories;

xi) tissues, cells, biological molecules including DNA, RNA, and proteins, and all other substances originating in the bodies of Nation Members, in addition to genetic and other information derived therefrom;

xii) images, sounds, crafts, art, symbols, motifs, names, performances; and

xiii) knowledge of systems of taxonomy of plants, animals, and insects.

d) "Cultural Property Right" means the traditional right of the Nation and individual members as consistent with Nation customs, laws and practice to determine access to, and use of Cultural Property. The following uses of Cultural Property require the prior and informed consent of the Nation:

i) to reproduce Cultural Property;

ii) to publish Cultural Property;

iii) to perform or display Cultural Property in public;

iv) to broadcast Cultural Property to the public by radio, television, satellite, cable or any other means of communication;

v) to translate, adapt, arrange, transform or modify Cultural Property;

vi) to fixate Cultural Property through any process such as making a photograph, film or sound recording;

vii) to make Cultural Property available online or electronically transmit Cultural Property to the public (whether over a path or a combination of paths, or both);

viii) to create derivative works of Cultural Property;

ix) to make, use, offer for sale, sell, import or export products derived from Cultural Property;

x) to use Cultural Property in any other material form.

e) "Cultural Sensitivity Training" means the education that researcher(s) must undergo within the Nation Community in order to understand the social, cultural and political construct of the Nation, and to ensure their actions are conducted in a culturally appropriate and sensitive manner.

f) "Existing Intellectual Property" means Intellectual Property that is used in a Research Project, which is owned by or licensed to the University before the commencement of the Research Project.

g) "FIPPA" means *The Freedom of Information and Protection of Privacy Act* (Manitoba).

h) "Indigenous" means native, originating or growing naturally in a specific landscape. Also refers to Iskatewizaagegan Independent First Nation descending from the original inhabitants of the Western Hemisphere who have maintained distinct languages, culture, or religion from time immemorial.

i) "Intellectual Property" means any new and useful art, invention, discovery, innovation, process or product, and any industrial and/or intellectual property rights and all such other rights which may be recognized under law and that are required to protect or commercialize the intellectual property.

j) "MOU" means this research memorandum of understanding, which includes any attached schedules.

k) "Nation" means the Iskatewizaagegan #39 Independent First Nation.

l) "Nation Community" includes Nation Members, their descendants and ancestors, and other individuals, families, and clans, residing within the exterior boundaries of the Nation Territory.

m) "Nation Member" means an individual Indian who is enrolled in the Iskatewizaagegan #39 Independent First Nation.

n) "Person" means an individual, corporation, partnership, organization, business entity, or university or other Research institution.

o) "PHIA" means *The Personal Health Information Act* (Manitoba).

p) "Proposal" means the research proposal submitted to the RRC to undertake a Research Project pursuant to this MOU.

q) "RRC" means the Research Review Committee established under this MOU.

r) "Research" includes identification, description, classification, collection, database, recordation, analysis, and publication in fields including, but not limited to: agronomy, anthropology, archaeology, astronomy, biology, ethnobotany, ecology, ethnography, genealogy, history, linguistics, paleontology, medicine, photography, psychology, geology, remote sensing, sociology, theology, videography, and other investigative disciplines or approaches as identified by the Nation.

s) "Research Participant" means an individual from whom or about whom the University researcher conducting a Research Project obtains data or identifiable personal information.

t) "Research Project" means a project to conduct Research within the Nation jurisdiction in accordance with this MOU.

u) "Territory" means all lands outside or inside the exterior boundaries of the resident Territory which are under the jurisdiction of the Iskatewizaagegan Independent First Nation, and such lands as may hereafter be obtained or added to the jurisdiction of the Iskatewizaagegan Independent First Nation.

3.0 RESEARCH REVIEW COMMITTEE ESTABLISHED:

3.1 The Nation hereby establishes a Research Review Committee ("RRC"), which shall be comprised of at least five (5) Nation Members who shall be appointed to serve on this committee by the Chief and Council. They will be selected to serve two-year terms on a staggered basis. Committee members can be removed for expiration of term, conflict of interest, breach of confidentiality, or fraud related to their duties on the committee. At least one (1) committee member should be a fluent native speaker. The RRC may contract/contact/work with outside experts, such as scientists, bioethicists, and lawyers to review information.

4.0 RRC DUTIES AND RESPONSIBILITIES:

4.1 The RRC shall have the following duties and responsibilities:

a) review and comment on all Proposals.

b) develop and propose to the Chief and Council rules under which the RRC shall operate. This would include procedures to ensure informed consent, to protect privacy, to govern the extraction, use, and disposal of bodily or other biological materials, to restrict any unauthorized secondary Research, to protect Nation access to and use of the Research findings, and to ensure benefits-sharing arrangements when appropriately generated from the Research Project.

c) coordinate and ensure that affected Nation programs', departments', and members' interests are protected and represented.

d) submit recommendations regarding Proposals to the Chief and Council for final approval or disapproval.

e) coordinate and interact with the University in order to ensure Nation control over the approval process for Proposals and Nation access to and use of data and information generated by such Research Projects.

f) negotiate the terms and conditions of any research agreement to be entered into between the Nation and the University, and submit such agreement for execution by the Nation Council.

g) conduct site visits to the University, as necessary, subject to any confidentiality or privacy obligations of the University.

h) work with any appropriate outside institutional review boards, government agencies, academic institutions, or others that are relevant to the Research activities in the Proposal.

i) create a check point system for progress reports with the University to ensure compliance with the Proposal.

j) create an updated database/filing system of all approved and disapproved, past and present Proposals, and maintain a file of publications resulting from all approved Proposals. Also maintain list entities that may have had negative dealings with the Nation or other nations.

k) limit/waive certain financial criteria for Nation Members and non-member Indian researchers.

l) determine if the Proposals meet all applicable Nation law, and consider all prior reviews of the Proposal.

m) provide community information and education workshops for Nation Members, and review and consider any comments from Nation Members on the Proposal.

5.0 GUIDING PRINCIPLES FOR RRC AND THE UNIVERSITY:

5.1 The RRC and the University, in examining or preparing Proposals, shall be guided by the following principles:

a) Principle of Full Disclosure

This principle recognizes that a Research Project should not be conducted until there has been full disclosure with all potentially affected Nation Communities and individuals. Full disclosure includes but is not limited to: the full range of potential benefits and harms of the Research Project, all relevant affiliations of the Person(s) or organization(s) seeking to undertake the Research Project, and all sponsors of the Research Project.

b) Principle of Free Prior Informed Consent

This principle recognizes that Research Participants have a right to give their free prior and informed written consent before participating in any Research Project. Informed consent is a process in which information is provided to enable Research Participants to make fully informed choices about their participation in a specific Research Project. The principle of free, prior informed consent also applies to groups, such as nations, when the Research or other proposed activity potentially impacts the collective group. Potential Research Participants must be provided all information regarding the potential risks and benefits of participating in the Research Project, provisions to protect their privacy, available alternatives, and the right to choose not to participate and to withdraw from the Research Project at any time. Information must be provided in a language and terms that the Research Participant can understand. This process should be free of any coercion or any fear of repercussion for refusing to participate. In no case should consent be presumed or implied, and new consent must be sought for uses other than that for which the original consent was granted.

c) Principle of Benefits to the Nation Community

This principle recognizes that Research should be of immediate benefit to the Nation, and the risks associated with the Research should be less significant than the benefits to be gained. Benefits must outweigh the risks, otherwise the Research should be considered unwarranted. The Nation should be informed of any potential legal, financial, social, physical, or psychological risk to members of the community, and any deleterious impact on the cultural, social, economic or political well-being of the community or the environment.

d) Principle of Confidentiality

This principle recognizes that the Nation and local communities, at their sole discretion, have the right to exclude from publication and/or to have kept confidential any Confidential Information disclosed by them to the University concerning their Nation identification, Nation Members, families, clans, bands, culture, traditions, mythologies, or spiritual beliefs. Furthermore, the University shall undertake all necessary steps to guarantee such confidentiality.

e) Principle of Respect

This principle recognizes the necessity for the University to respect the culture, traditions, and relationships of the Nation and Nation Members, and to avoid the imposition of external concepts and standards.

f) Principle of Communication

This principle recognizes that open, candid, and honest communications should be carried out in the local language, using translators as necessary. Mutual communication is the cornerstone to a trusting relationship between the University and the community. The objectives, expectations, language, and values will be openly deliberated within each community since both sides may not share the same definitions, assumptions, or values. Good communication is required to carry out a proper Research Project.

g) Principle of Empowerment

This principle recognizes that empowerment is the sharing of power and is premised on mutual respect. Empowerment means that each affected party feels that their needs are being met through a fair and equitable manner. Empowerment also means that the University acknowledges the contribution of the Nation and community in any University publication of the Research Project.

h) Principle of Equity

Both the University and the Nation must bring equity to any Research Project. Each of the Nation and the University must evaluate such equity in relation to the Research Project. Finance or money is only one form of equity. Community knowledge, networks, personnel, political or social power are other forms of equity useful to a Research Project. Each of these commodities has value and must be shared between the University and the Nation if a good relationship is to be formulated. The parties must continuously review equity over the duration of a Research Project.

i) Principle of Mutual Respect

This principle recognizes that in order to develop a good Research Project, the University and the Nation must generate respect for each other. Understanding the social, political and cultural structures of the other party generates respect. The University and the Nation cannot assume that they believe in the same things or share the same goals and expectations. Cultural Sensitivity Training for the University researchers and Nation awareness presentations will help develop a mutual understanding in conducting the Research Project. Definitions and assumptions must be clarified and questioned by each side. The Nation and the University researchers must listen to each other with open minds.

j) Principle of Inherent and Prior Rights

This principle recognizes that the Nation has inherent and prior proprietary rights and interests over all forms of their cultural and natural resources within their

Territories together with all Cultural Property and Cultural Property Rights associated with such properties and their use.

k) Principle of Self-Determination

This principle recognizes that the Nation has a right of self-determination and exercises Nation sovereignty over their affairs, and that the University will acknowledge and respect such rights.

l) Principle of Inalienability

This principle recognizes the inalienable rights of the Nation in relation to their traditional Territories, Cultural Property and natural resources, and associated knowledge. These rights are collective by nature but can include individual rights. It shall be for the Nation to determine for themselves the nature and scope of their property rights regimes.

m) Principle of Traditional Guardianship

This principle recognizes the obligation and responsibility of the Nation's role as traditional guardians to preserve and protect their traditional Territories, cultural and natural resources, and associated traditional Indigenous knowledge.

6.0 RESEARCH PROPOSAL REQUIREMENTS:

6.1 Right to Reject

The RRC reserves the right to reject Proposals that do not meet the requirements of this MOU.

6.2 Qualifications

The Proposal will provide the C.V./resumes, listing of previous publications, and other applicable documentation for all University researchers involved in the Research Project. The Proposal will be accessible through a previously approved method with the RRC. The Proposal will include a declaration signed by the University researchers regarding any conflicts of interest for all University researchers associated with the Research Project. The Proposal will include all other documents that are associated with the Research Project.

6.3 Time Frame

As a cooperative venture, the Proposal requires an appropriate time frame for Nation review and approval. The University must begin working with the RRC in the earliest stages of planning their Proposals. Depending on the nature of the proposed Research Project, the University should be advised to allow sufficient time for the RRC to

thoroughly review and understand all aspects of the Research Project, ask questions and resolve differences. All Proposals must be submitted at least three (3) to six (6) months prior to the anticipated Research Project start date.

6.4 Format

A concise two-page synopsis of the Research Project shall be submitted to the RRC. A full-length Proposal shall be submitted containing sufficient information to allow the RRC to make an informed decision. Sufficient numbers of copies shall be submitted to the RRC, as requested. The following information must be included in any full length Proposal for approval of a Research Project:

a) Statement of the Issue/Problem/Research Question:

The University shall briefly describe the issue/problem addressed by the proposed Research Project. Specific questions related to this issue/problem and the theoretical rationale behind the questions shall be set forth. If the University has a specific hypothesis, it shall briefly set it forth.

b) Intent/Benefit to the Nation:

The University must clearly outline and discuss the intent of the Research Project and the benefit(s) that the Research Project will have to the Nation Community. Some questions to be answered are:

i) what are the anticipated consequences or results/outcomes of the Research Project;

ii) what groups will be affected and what groups will benefit; and

iii) in what ways will these groups and the Nation benefit?

c) Method:

The University shall describe the procedure for the collection of all data to be used in the Research Project, including a description of subjects, settings, proposed procedure and the nature of the data to be collected. The University shall clearly explain the method for community education and outreach prior to beginning the Research Project.

d) Confidentiality:

The parties acknowledge and agree that this MOU and the relationship between the Nation, the Research Participants and the University will be subject to the provisions of FIPPA and PHIA with respect to personal information and personal health information. The University shall not disclose any Confidential

Information outside of the Research Project without the prior written consent of the Person who disclosed the Confidential Information. This confidentiality shall survive the term of the Research Project and extend in perpetuity. The University shall identify any circumstances where a breach of confidentiality may occur. The University shall describe how Research Participants will be informed of the degree of confidentiality that will be maintained throughout the Research Project. The University shall strictly abide by the terms of the informed consent of Research Participant with respect to use and disclosure of individual data and individual identifiers such as names, addresses and phone numbers. The University must state in the Proposal whether it intends to disclose any specific Nation identity, Nation name, Nation Community, or other identifiable group in any data released.

e) Disposition of Data and Samples:

The University shall describe how the Nation and the Research Participants will be informed of how data and samples generated from the Research Project will be used. Both the Nation and the Research Participants must clearly understand what the University plans to do with the data and samples that are collected from the Territory, Nation and Research Participant. A description of the plans to provide Research Participants with the results of the Research Project must be provided within the Proposal. A description of the frequency and manner by which the Research Project data and samples will be shared with the RRC must be set forth.

f) Risks:

The University must describe any potential legal, financial, social, physical or psychological risks that it anticipates in the Research Project. Any such anticipated risks of adverse or harmful impact on the cultural, social, economic or political well being of the Nation or Research Participants shall be assessed. The assessment of risk will address the steps that will be taken to minimize, ameliorate or repair any harm caused to the Nation or Research Participant by the Research Project. The University shall describe how potential risks will be explained to Research Participants and how the risks are justified by the potential benefits of the Research Project.

g) Funding/Budget:

The University shall provide a full reference of the funding source(s) and explanation of any limits or requirements on the Research Project results. The University will provide a copy of the grant application and grant agreement from the funding source(s), as well as any sub-contract agreements with other Persons. The University shall list all potential sources of funding agencies for which funds are being sought. The list will include an abstract of the funding request. The University shall provide a total budget for the Research Project that shall include line items covering Cultural Sensitivity Training, and outreach efforts.

h) Education and Outreach:

The University shall describe the method for community education and outreach for the Research Project.

i) Cultural Sensitivity Training:

All University researchers involved in the Research Project will be required to undergo Cultural Sensitivity Training to be provided at the University's reasonable expense, prior to any Research Project. Costs will be determined based on the scope of the Research Project. The training shall be provided by a Person(s) designated by the RRC. The University will provide verification to the RRC in order to proceed with their Research Project. The RRC maintains the discretion to limit/waive the Cultural Sensitivity Training for any Person(s).

j) Equity:

The Research Proposal must demonstrate how the Nation and Research Participants will be treated fairly and equitably. Just compensation or fair return may include but is not limited to: obtaining copies of the Research Project results, authorship, co-authorship or acknowledgment, royalties, fair monetary compensation, compensation for expenses incurred in reviewing/advising University researchers, coverage of training/education or outreach expenses or other forms of compensation. Finance or money is only one form of equity. Community knowledge, networks, personnel, political or social power are other forms of equity useful to the Research Project. Each of these commodities has value and must be shared between the University and the Nation if a good relationship is to be formulated.

k) Consent:

The Proposal must address the mechanisms and processes for acquiring free, prior and informed consent, which may be required from Research Participants, families, parents or legal guardians, clans, bands or the Nation government. A copy of the informed consent must be provided to the RRC for approval. It will be presented in language understandable to Nation Members and will not contain exculpatory language. Blanket informed consent forms are not acceptable.

l) Publication:

The parties agree that it is part of the University's mission and policies to disseminate information and make it available for the purpose of scholarship. The Proposal shall address the plans (pre, during and post-project) for publication of the Research Project results. If such publication is contemplated, the University shall address how the Nation Community may share in the authorship of

publications or receive acknowledgement for their contribution to the Research Project. The University must inform the RRC of journals, publishing houses or conferences that they plan to print or present the results of the Research Project thirty (30) days before papers are submitted or presented. The Proposal must demonstrate a process not to exceed thirty (30) days whereby the RRC and the Nation will have an opportunity to review and critique the results of all Research Projects before any publication, presentation, news conferences or release of data to the general public occurs. The University shall have the final authority to determine the scope and content of any publication, however, any strong objections to the publication will be noted and published by the University.

m) Intellectual Property Rights:

The Proposal shall address the plans (pre-, during and post-project) for any commercialization of the Research Project results, if applicable. If such commercialization is contemplated, the University shall address how the Nation will share in the proceeds from the commercialization of Arising Intellectual Property. The University shall retain ownership of all Existing Intellectual Property owned by or licenced to the University before the commencement of the Research Project. The parties acknowledge that one or more master's or doctoral theses may be generated from the Research Project, and agree that students involved in the Research Project shall retain copyright to their theses.

n) Data Ownership/Archive:

Subject to FIPPA and PHIA and to any obligations of confidentiality of the University to Research Participants, the Nation reserves the right to require the deposit of copies of raw materials or data, working papers or product in a Nation designated repository, with specific safeguards to preserve confidentiality. Duplicates of data or split samples may be required to be stored in such a local archive.

6.5 Administrative Fee:

The University shall remit with the Proposal an administrative fee in the amount of one hundred fifty ($150.00) dollars to cover administrative costs associated with review of the Proposal and permitting. The RRC maintains the discretion to limit/waive the administrative fee to Nation Members and non-member Indigenous researchers.

7.0 RESEARCH PROJECT:

7.1 Upon approval by the RRC of the Proposal, the University may proceed to carry out the Research Project in accordance with the terms and conditions of the Proposal.

7.2 Provided the University complies with the terms and conditions of the Proposal, the University shall have control, supervision and direction of the Research Project and for the manner in which the Research Project is performed.

8.0 MISCELLANEOUS:

8.1 **Termination.** This MOU may be terminated upon sixty (60) days written notice by either party. In the event of termination, no payment of services shall be rendered unless the service or deliverable was rendered or produced prior to receipt of notice of termination.

8.2 **Relationship of Parties.** Both parties agree that the University is an independent entity. This MOU is not an employment agreement, not does it constitute a joint venture or partnership between the Nation and the University. Nothing contained herein shall be construed to be inconsistent with this independent relationship.

8.3 **Assignment.** This MOU may not be assigned by either party without written consent of the other party hereto.

8.4 **Dispute Resolution.** The parties shall use all reasonable efforts to resolve any disputes arising between or among them as reasonably, efficiently and cost effectively as possible and at all relevant times, the parties shall:

a) try to resolve all disputes by negotiations, in good faith and acting reasonably;

b) ensure their representatives shall meet, negotiate in good faith and try to resolve disputes without litigation, controversy or any claim arising from this MOU, or breach of it; and

c) provide frank, candid and timely disclosure of all relevant facts, information and documents to facilitate those negotiations. If a dispute cannot be resolved through negotiations, the parties shall participate in mediation with a mutually acceptable mediator. The parties shall share the cost of the mediator equally and bear their own costs of mediation.

8.5 Notwithstanding any other provision of this MOU, disclosure of Confidential Information shall not be precluded if such disclosure is in response to a valid order of any governmental agency, court or other quasi-judicial or regulatory body of competent jurisdiction, provided however, that the responding party shall, as promptly and as reasonably possible, give notice to the other party of the requirement so that the other party may contest the requirement to provide such Confidential Information.

8.6 **Miscellaneous.** This MOU constitutes the entire agreement between the parties. Its terms can be modified only by an instrument in writing signed by both parties. This MOU shall be binding on the parties, their heirs, successors, assigns, and personal representatives. A waiver of a breach of any of the provisions of this MOU shall not be

construed as a continuing waiver of other breaches of the same or other provisions hereof.

The parties hereby covenant and agree on the foregoing terms and condition that will govern and guide the MOU.

Signed on the 31st day of Oct. 2011

For Iskatewizaagegan #39 Independent First Nation:

Name: XXXX XXXXXXX

Title: XXXXXXX

For The University of Manitoba

Name: XXXX XXXXXXX

Title: XXXXXXX

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APPENDIX 5:

Supplementary Data on Shoal Lake Fisheries: 1979 - 1983

Supplementary Data on the Shoal Lake Fisheries: 1979 - 1983

This appendix presents some general characteristics of the Shoal Lake fisheries in the years leading up to its closure in May of 1983. This data was obtained from the Ontario Ministry of Natural Resources (MNR) on August 9, 2012.

In the years leading up to its closure, the commercial fishery on Shoal Lake was comprised of five commercial fishing lots (licensed areas), which employed 10 to 12 full-time non-aboriginal fisherman. At this time, there existed one aboriginal fishing lot that employed several fishers from both IIFN and Shoal Lake Band #40.

Between 1975 and 1977, the commercial harvest of walleye was greater than the total commercial harvest of walleye for the previous 10 years. In 1977, the commercial harvest of walleye exceeded the potential yield estimate of 33,110 kg (72,800 lbs) by 650%.

The table below presents the total quantity of commercial harvest (in pounds) by aboriginal and non-aboriginal fishers in years 1980 and 1983, as recorded by the Ontario Ministry of Natural Resources.

Year	Commercial Harvest (lbs)							
	northern pike		lake whitefish		walleye		white suckers	
	aboriginal	non-aboriginal	aboriginal	non-aboriginal	aboriginal	non-aboriginal	aboriginal	non-aboriginal
1980	24,955	31,515	2,042	5,015	34,759	21,925	6,030	28,627
1983	11,220	9,742	3,229	1,396	3,740	6,179	4,623	2,818

The Shoal Lake sports fishery and aboriginal subsistence harvests of walleye are not considered to have impacted the health of the Shoal Lake walleye populations leading up to its closure in 1983. However, the estimated quantity of walleye harvested from the sports fishery suggests that it may have caused additional stresses to the fishery. For instance, in 1977 an additional 22,000 pounds of walleye were harvested from an estimated 25,550 "angler days". Of this harvest, MNR estimates that 85% of the harvest was from non-resident fishers and 15% from resident fishers.

This data provides some insight into how aboriginal and non-aboriginal fishers contributed to declines in Shoal Lake fish populations throughout the period leading up to the closure of the Shoal Lake fishery in the spring of 1983.