Exploring Linkages between Indigenous Community-Based Planning Strategies and Environmental Management

Developing Best-Practices for a Holistic Approach

By

Sarah Szirtes
Bachelor of Arts, Honours, Environmental Studies

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Department of Geography and Environmental Studies

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ABSTRACT

The general topic of this thesis is environmental management as it relates to Indigenous Communities in Ontario, Canada. There are significant environmental protection issues that Aboriginal Communities in Canada are facing. Documented Indigenous experiences in this regard suggest that effective, inclusive approaches for filling regulatory gaps on reserve lands are paramount for ensuring health and sustainability in these areas. While Aboriginal Communities have the desire to do so, many lack the resources, infrastructure and governance mechanisms necessary to fill these gaps. One option is to apply a community-based planning process to document variables and factors undermining responsible stewardship at the grassroots level. This thesis project explores whether using this approach and developing a collection of community-driven environmental strategies supports an effective approach to environmental management on Aboriginal lands.

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Chapter 1: Introduction

"The term Environment means the components of the earth and includes: Land, water and air, including all layers of the atmosphere, all organic and inorganic matter and living organisms, the social, economic, recreational, cultural, spiritual, and aesthetic conditions and factors that influence the life of humans and communities, and a part or combination of those things referred to in (a), (b) and (c) and the interrelationships between two or more of them".

(Innu Nation, 1996, Voisey's Bay, MOU).

This thesis project examines environmental stewardship within Indigenous Communities in Canada in terms of supporting the development and implementation of an effective, inclusive and strategic approach to environmental management on Aboriginal lands. By extension, also under examination is the relationship between Indigenous self-governance, or empowerment, and environmental management. Canada's Aboriginal populations face problems in matters related to health, education, economy, human rights and environmental degradation, at the same time compounding these issues is the fact that Aboriginal people are the fastest growing segment of the Canadian population (DIAND, 2007). This is confounded by the subjection of social and environmental areas of life to the logistics of capital accumulation and globalization, and the lack of effective regulatory frameworks to address these pressing issues (Castree, 2007:8).

While acknowledging that most Indigenous Communities in Canada are culturally, politically and geographically specific, this thesis project will explore the similar challenges that they face struggling to implement holistic environmental regimes based on principles of environmental governance. This struggle involves attempts to integrate scientific knowledge with traditional knowledge while also considering cultural and sociological concerns at the community level. Various practical barriers challenge sustainable, environmental stewardship at the community level. Culturally appropriate stewardship and inclusive concepts of knowledge and governance are also important threads through the environmental management dialogue. For example traditional, Aboriginal authority of land use is relational and reciprocal in nature and this responsibility might more accurately be described as a stewardship rather than in terms of a managerial role.

Much of the current research on Indigenous land usage lacks a *holistic* framework for analysing Aboriginal environmental management. Developing an inclusive context for future research and decision making, or using a holistic, inclusive lens, might be the most useful way to protect the environmental integrity of Indigenous lands in Canada. This thesis aims to explore the idea of using an inclusive, holistic framework for addressing Indigenous environmental management.

This particular thesis project draws from grass-roots strategies, developed by Aboriginal peoples where they themselves have informed 'best-practices' for Indigenous environmental management circumstances. Environmental management

on reserve lands in Canada is very complex, and involves varying degrees of co-management situations between Aboriginal groups and various levels of government, primarily federal. The Government of Canada provides a significant amount of funding and oversight for environmental management programs on Aboriginal lands. Because the current approach may be defined as more reactionary than preventative, (a larger focus on remediation versus prevention) and the fact that there are unaddressed regulatory loopholes in regards to environmental legislation and ongoing issues related to infrastructure, capacity, resources and education, there has been some debate as to whose interests are served by the current decision making framework (ICE, 2008). Against this backdrop, many Indigenous Communities in Canada are in the process of developing strategies and governance frameworks for improved environmental management as they struggle to adapt to often health-threatening environmental conditions and address the social, cultural, and physical needs of their Communities. Some Aboriginal Communities are coming together, through workshops, associations and various other forums to discuss and jointly address these environmental concerns. This thesis research documents the results from several of these forums. By including these 'best-practices' in the development of this project it is my hope that the findings will be useful to both Indigenous grassroots communities and relevant governmental bodies wishing to support the creation of a holistic framework for Indigenous land and environmental management, which may include involving Aboriginal grass-roots research as a starting point for Indigenous environmental initiatives.

This thesis research was partly conducted in partnership with the Indigenous Cooperative on the Environment (ICE). ICE is a non-profit, Canadian Indigenous environmental organization that is self-described as a 'Best-Practice organization.' They combine cultural and spiritual knowledge, a focus on empowerment of Aboriginal peoples and use a unique engagement process to develop short, medium and long term environmental strategies with all of their partners, in particular the Indigenous Communities. In 2007 ICE provided a hands-on development opportunity for all Indigenous Communities in Ontario. The goal of this ICE study was to make available some standard examples and best-practices for future researchers, decision makers and interested Indigenous Canadian Communities.

Having generally introduced the focus of this thesis project, the remainder of this chapter is organized as follows. Section 1.1 will outline the initiation of this thesis project and the role of the researcher therein. Section 1.2 will provide an overview of the thrust behind this thesis project and the rationale for choosing this subject area. Section 1.3 through 1.5 outlines the specific objectives of this thesis project, its scope, and finally the overall document format and layout

1.1 Initiation of the Thesis Project

The choice of this thesis research focus came about as a result of contacting Aboriginal environmental organizations and concluding a review of several existing studies on Indigenous land management. Bradley (1999) conducted one such study which focused on environmental management gaps on reserve lands in the province of Alberta.

Bradley explains that her initial goal for her project was to create a broad environmental management strategy that would coordinate and streamline all of the available environmental management programs and information into a single process. However, it quickly became apparent that significant issues at all governance levels, including the Band Council, Federal and Provincial governments, resulted in barriers to effective environmental management on-reserve. In light of this, she chose instead to focus on those underlying issues that must be remedied before it could be hoped that any type of environmental management strategy could be effective. The experiences of Bradley have informed the scope of this thesis project in that specific management recommendations are not the desired outcome, rather the goal is to explore and address underlying deficiencies and evaluate the effectiveness of community-based planning as a tool in addressing these deficiencies.

I was invited by the ICE leadership to take part in a planned study in 2007, which would involve giving an opportunity to all Ontario Indigenous Communities to partake in an Environmental Conference aimed at identifying common environmental issues and developing frameworks and strategies for addressing them. ICE sought a researcher to provide an evaluation and analysis of the conference results in order to disseminate these results to other Communities and/or other interested decision making bodies (such as the Department of Indian Affairs and Northern Development (DIAND), or other academic researchers). The conferences took place in 2007-2008. Partners involved in administering the ICE study included Environmental Defence, Ecojustice,

the Assembly of First Nations and the Chief of Ontario. There was no funding required for this thesis project.

1.2 Rationale

The thrust behind this thesis project is the hope that it may be used to increase awareness of environmental issues on Indigenous lands and provide some insight into options for addressing these issues. Additionally, the hope is to promote the idea of policy and program development that is driven from the community level. The overarching objective is to provide a platform or best-practice example for Communities, decision makers and future researchers that is informed by Indigenous community planning. My motivation for choosing this thesis research subject was twofold. First, environmental protection as it relates holistically to Aboriginal land is a relatively under-researched area, as explained in the following segment:

> Overall, there is an obvious lack of academic research on Indigenous environmental issues. This could be due, in part, to the fact that the federal government and hired consultants undertake much of this research which then does not get submitted for peer-review and publishing. In most cases, the research focuses on the issue (e.g. forestry impacts) rather than on how it affects Aboriginal groups and typically includes only a short discussion of implications for First Nations (CIER, 2005).

This view is also apparent if one looks to adaptive co-management and post-colonial literature, which are two of the main categories of literature that this thesis is grounded in. Co-management strategies refer to the expectation of a shared management of land between Aboriginal groups and governmental bodies. Adaptive co-management strategies refer generally to co-management arrangements where the parties also agree to be adaptive, flexible and committed to changing management strategies as needed

(see Chapter 3.6). There have been calls for more case studies of social learning in environmental management and a need to document specific experiences that speak specifically to experiences of adaptive-co-management (Plummer and FitzGibbon, 2007:57).

Second, there is a critical regulatory gap that negatively impacts management of traditional Aboriginal lands. A functional infrastructure is imperative to having a sound environmental management system in place. Most Canadian jurisdictions have adequate infrastructure, environmental protection laws, regulations and programs, which support the regular day-to-day functioning of proscribed environmental management strategies. Aboriginal lands are seriously lacking this necessary infrastructure by comparison (CESD, 2005). Supporting the establishment of holistic management frameworks for the environmental usage of Aboriginal lands provides an opportunity to explore, incorporate and utilize Indigenous and ecological knowledge in community planning. Community-based planning may serve to make a traditionally scientific research process more holistic (Armitage et al., 2007) and in turn, yield greater success in the development and maintenance of necessary infrastructure for Aboriginal Communities.

Third, environmental conditions within Canadian Aboriginal Communities require immediate, dedicated attention. For instance, climate change is a serious environmental issue, particularly in the Canadian arctic, which is primarily inhabited by Indigenous groups (Keith, 1994). In addition to various problems related to global warming,

including the melting of permafrost, over the last several decades there has also been an alarming increase in exposure, on Aboriginal lands to toxic pollutants (Doubleday, 1997). According to Environment Canada (2005): "...the Arctic is now experiencing some of the most rapid and severe climate change on Earth. Arctic communities and Indigenous peoples are facing social, economic and cultural challenges. Arctic wildlife and biodiversity are also threatened by changes to their environment." Other environmental issues that Indigenous peoples face relate to heath and maintaining their traditional way of sustenance, for instance, addressing the elevated levels of trace metals in consumers of traditional wild game (Cameron and Weis, 1993). Bringing attention to these issues may help in some small way to protect Aboriginal health and safety, and furthermore, to support the objective of achieving recognition of the right to self-governance.

Finally, the fourth driver behind this choice of thesis project was the potential fit between my interest in environmental protection and ICE's interest in environmental sustainability, where they supported my use of their research.

1.3 Thesis Objectives

The purpose of this thesis is to examine the current environmental management situation within Ontario Communities and explore linkages between community planning and improved environmental management. More specific thesis objectives include the following:

1. To obtain basic information on the state of environmental management as perceived at the community level in several Ontario Communities.

2. To evaluate the role of community-based planning and empowerment at the grassroots level in fostering beneficial environmental management practices.

3. To assist with generating ideas for future research and policy development and to provide a platform for future needs assessments.

4. To encourage dialogue around the evolving, complex paradigm of Indigenous environmental governance.

1.4 Scope of the Thesis Project

This thesis project was designed to provide a broad overview of the current environmental management issues within Ontario Indigenous Communities, and, as such, is confined to a study of environmental management on several reserves in Ontario. This may include traditional lands, treaty areas, unsettled land claim areas and Métis settlement areas. Besides the referenced studies, this thesis research may well apply to other jurisdictions in Canada. However, these other areas lie beyond the scope of this thesis project.

1.5 Document Format

A general introduction to the thesis topic under investigation and the rationale behind choosing this topic was provided in Chapter 1. Chapter 2 outlines the methodology utilized in the acquisition and analysis of the thesis research data. Chapter 3 provides background information and related literature that deals with Indigenous environmental

management, situating the reader within the appropriate practical, theoretical and conceptual frameworks. This includes summaries of federal government policies, environmental management programs, and historical and philosophical considerations. Chapter 4 offers a summary and discussion of the results of the thesis research data. Having defined and defended my chosen conceptual approach and objectives, I focus on telling the story of the community-based planning process as it has so far evolved for three Aboriginal groups in Ontario, Canada. And finally, Chapter 5 presents a synthesis of the overall thesis project results and conclusions that can be drawn.

Chapter 2: Methodology

This chapter covers the process of enquiry and the methods used to examine the following thesis research question: what are the linkages between community-based planning and environmental management? The thesis research focuses on an exploration of the results from three environmental planning conferences with four Aboriginal linguistic groups in Ontario, Canada in 2008. The choice to focus on the events under evaluation assists in ``grounding`` the theoretical discussion at hand at the grassroots level. Section 2.1 includes a brief discussion on descriptive research, introduces the chosen methodological approach and explains the rationale behind using this type of forum as a research tool. Section 2.2 is a discussion of the limitations that are involved in using this type of research approach and lays out the position of the researcher in the research process. Section 2.3 is an overview of the three tools that are used in gathering the data for this thesis project. Section 2.4 provides background on the subjects of this data, i.e. the conference participants, and the process of selection.

2.1 Introduction

The methodology of this thesis research is designed to present the current status of environmental management issues facing certain Aboriginal Communities in Ontario as portrayed by Community members, through describing the community-based planning process and results. This is done with the expectation of laying a foundation for comparative analysis and related discussions. The data gathered for this thesis research consists of information gathered during three separate environmental conferences which were held by ICE in 2008. The ICE conference format included two two-day gatherings and one three-day gathering which allowed participants to share and consider environmental issues on their lands. Facilitators included experts from both environmental and legal spheres as well as several Aboriginal political territorial organizations. For convenience sake, I will refer to all three conferences hereafter collectively as 'the ICE study'. According to well-established guidelines, a researcher's key role is to weave the data into discussions of their significance (Neuman, 1997:335). The data generated from this the ICE study will therefore be analyzed, which includes drawing out themes and/or generalizations from them, and then formed into a larger picture that can be understood by external audiences.

This thesis research fits into the descriptive category, in that it considers what is going on in the present through an analysis of data gathered by questionnaires and/or interviews (Lang and Heiss, 1991; Taylor, 2000). Descriptive research describes data and/or characteristics of phenomena. The primary purpose of doing this is to analyze

trends that are developing, as well as current situations that can be used in diagnosing a problem or in advocating a new or improved program (Taylor, 2000:71). Of the five categories of descriptive research, this thesis project may be best classified as a status study. According to Lang and Heiss (1991), the general objectives of a status study are threefold. First, to obtain basic information where none exists on a problem, or to update information on a particular topic or condition. Second, to correct misinformation. Third, to collect data which are potentially useful for other research efforts. The general question under consideration in this thesis explores the existence of linkages between community-based planning and fostering environmental management. The objectives of this thesis research include obtaining basic information on the state of affairs as perceived at the community level, assisting with generating ideas around where to focus future research, and encouraging dialogue for advocating new options within the emerging paradigm of Indigenous environmental governance. This places this thesis research solidly in line the objectives of a status study.

In other words, since status studies examine the current status of a selected sample to determine its special characteristics, and the purpose of the ICE study was to gather baseline information which could be built upon, applying a status study methodology is an appropriate means to capture an introductory snapshot of current environmental issues as presented by Community members. Achieving the objectives of this thesis research is therefore appropriately supported through applying descriptive research techniques in general.

This thesis project attempts to understand environmental issues and provide a narrative of environmental planning from the perspective of a community level. The nature of information that was to be gathered from participants during the ICE study (collective concerns, ideas and plans for addressing current dilemmas and brainstorming session wrap-ups) was influential in determining the type of methodology to be employed during the thesis project.

The overall ICE study findings are presented and discussed in Chapter 4. It is the intention that this overall needs assessment and thesis research be useful for a variety of purposes, including informing management policies and strategies for governance and to generate buy-in from the general public. The intent in this instance is to draw conclusions from both the questionnaire and the general participant feedback taken from the draft strategies on environmental protection created during the ICE Study focused workshop sessions, and provide a general overview of current environmental management gaps facing Indigenous Canadian Communities. Moreover, the intent is also to consider the environmental needs and strategies as documented through the ICE collaborative process and explore possible and inherent linkages between improving environmental governance and collective community-based planning. The results will hopefully guide several communities (and may serve as an example for others that were not involved in the ICE study) as they create and implement environmental protection strategies for their lands, including, for example, environmental by-laws and regulations.

In the descriptive methodology presented in this thesis project, the first step is a review of related literature to provide necessary context on Indigenous environmental governance. The second step is the analysis of the qualitative data that was collected during the ICE study (words), evaluating and expressing it quantitatively through the use of descriptive statistics (i.e., proportions, percentages and ratios), which is followed by the third step, a thorough discursive analysis and finally the fourth step, a detailed discursive evaluation of the draft community strategies on environmental protection.

The choice to use a descriptive approach to analyze the ICE data instead of applying a strictly discursive approach in this thesis project was based on several factors. The first factor is the relatively small scale of the ICE study. To validate this choice we can refer to the work of Blaxter et al.: "Many small-scale research studies which use questionnaires as a form of data collection will not need to go beyond the use of descriptive statistics and the exploration of the interrelationships between pairs of variables"(2001:216).

The second factor is the participant diversity, as well as the scope and complexities of the social, cultural and scientific issues that are applicable to environmental planning on Aboriginal lands. In this light it was important to adopt a thesis methodology that would allow flexible data analysis in the face of the data that was collected during the ICE study.

The third factor is the small size of the ICE study samples (specifically, responses from approximately 20 - 50 participants per conference). This thesis research is simply considered too small for detailed statistical analysis.

A fourth factor is the requirement for a flexible presentation of results to various audiences. According to one Canadian expert in the area of environmental governance on Aboriginal lands, it is in the best interest of the researcher and participants awaiting feedback if the results are provided in as clear and uncomplicated a fashion as possible (ICE, 2008). This includes the need to provide visual tools that are easily understood and relevant to multiple audiences. In this light, the use of simple descriptive measures such as ratios, proportions, graphs and frequency distributions allow the researcher to easily conceptualize the information that has been collected (Buma, 1996; Kane and O'Reilly – De Brun, 2001; Taylor, 2000).

The fifth factor is the fact that the information collected for this thesis project is a record of the actual testimony of participants in an event which is interpreted by someone (the researcher) who was not physically at the event (Lang and Heiss, 1991:74). The first hand information (minutes and detailed notes, questionnaires and group strategies) of the ICE study conference proceedings was recorded by a note taker who attended all three conferences and form part of the public record. The data has since been shared with and screened by all partnering organizations and the participants themselves. The researcher has continuously worked in partnership with the facilitators of the event, specifically the record keeper, to ensure the validity of the data and to

determine if applying descriptive techniques was an appropriate methodology for analysis. A somewhat similar process was applied by Peterson (2007) whose adaptive co-management research involving scenario planning is partly based on feedback gathered from participants of workshops and planning meetings.

Both quantitative and qualitative methods are employed in the thesis project to present a summary of the data, with the aim of representing the original variability of the data while also saying something about its generality (Blaxter et. al, 2004:204; Taylor, 2000). For example, the chosen ICE study methodology tools involved the employment of, first, a community needs assessment/questionnaire approach to answer questions about the current environmental state of affairs on Indigenous lands, and second, group planning sessions to generate environmental protection strategies for such lands. Data generated by questionnaires can be either qualitative or quantitative and can be analysed using either qualitative or quantitative measures (Blaxter, 2001:215). In the ICE study, the data generated by the questionnaires is qualitative, being in the form of words, as is most typically the case in qualitative studies (Taylor, 2000). However, it will be analysed in this thesis project using both quantitative methods through standard descriptive statistical measures, as well as qualitative methods, through an analysis on each data set which draws themes and conclusions from it (to be elaborated upon in Chapter 4). The rationale behind choosing this approach stems from a review of the experience of researchers in similar lines of study (Bradley, 1999; Smith, 1999) and from discussions with the facilitators of the ICE conferences (ICE, 2008). Following this exploration, it was determined that providing

purely quantitative information would not answer the thesis research question at a sufficient level of detail. Thus, a qualitative approach was also applied to attempt to capture a more complete picture of the experiences of participants. This logic is supported by Silverman (1993, 15): "An advantage of qualitative research is that it offers an apparently deeper picture than the variable based correlations of quantitative studies. This is also reinforced by Neuman (1997:19): "The use of qualitative methods, such as assessing oral feedback, "...tend[s] to be more open to using a range of evidence and discovering new issues".

2.2 Limitations

A word of caution about the use of status studies is required at this juncture. First and foremost, a researcher must be careful in the evaluation of thesis research results in order to ensure that personal bias is excluded as much as possible when making inferences or interpretations. The effects of subjective scoring is a key problem associated with coding qualitative data in general (Taylor, 2000:90). This is explained in detail by Taylor, who emphasizes that the significance of the data depends upon how a researcher organizes and interprets the facts – to avoid pitfalls, researchers should strive to be as objective as possible, leaving their individual beliefs and philosophies aside (Taylor, 2000:4). As Lang and Heiss remind us, the results of such a study also have the potential for misuse and misinterpretation. In the event that such studies yield non-desirable information, there is the possibility of creating resistance or negative feedback by concerned parties. It is important for readers of status studies to note that

the information gathered does not reflect the opinion of the researcher, and the researcher neither approves nor disapproves of it (Lang and Heiss, 1991).

From a personal perspective, as a researcher, I have attempted to maintain a neutral stance throughout the data interpretation process, and as much as possible to allow the voice of the participants, i.e. the data, to speak for itself. At the same time I am aware of the inherent challenges and risks such a task attaches to itself (Smith, 1999). A researcher relying on this type of data manipulation must be aware of certain limitations such as the risk of missing the overall picture (given individuality of certain variables) as well as the possibility for misinterpretation due to cultural differences (Buma, 1996). The goal of using frequency charts to display themes or prominent trends in the data is by no means intended to imply that some issues are more relevant than others, or to imply that the success of this thesis research is based on emerging trends in the data. The success of this thesis research in fact is more directly related to whether or not it provides any indications as to the impacts and overall process of holding the conferences in general, and whether holding the ICE study had an impact in enabling the Communities to actively participate in the environmental management process. Emerging trends or common themes in the data are emphasized simply to provide a basis for future reflection by policy developers as they may provide a focal point for more detailed needs analysis.

Throughout this thesis project and the analysis of the data, I have worked as closely as possible with ICE to ensure that an appropriate mode of data dissemination and analysis

has been utilized, in order to satisfy as many involved parties as possible. Other considerations that informed my chosen approach included a review of research from an Indigenous perspective. According to Indigenous academic Linda Tuhiwai Smith, scientific research is implicated in the worst excesses of colonialism. Smith argues that to many Indigenous persons globally, the very term 'research' is considered a bad word, one that conjures up images of white supremacy, insulting, arrogant and degrading methodologies, and the ongoing loss of land, culture, power and the right to self-govern to name only a few (Smith, 1999). In this light, I have attempted to strike a balance between academic, government and community-level needs and perspectives throughout this thesis project. This includes sensitivity in designing the methodological process, presenting the results and drawing inferences from the data and generally producing material in a manner which is both relevant to academic and political decision makers at all levels, and as culturally sensitive as possible.

2.3 Tools and Techniques

This section provides an overview of the specific tools and techniques utilized in this thesis research, namely: a literature and historical review, a status study which consists of an evaluation of data generated from three community conferences during the ICE study, more specifically three community assessments (questionnaires) and three draft environmental protection community strategies, and finally, the use of frequency distributions to disseminate and provide a visual analysis of the data. All of these components of the thesis research are described in the following sections.

2.3.1 Tool#1, Review of Related Research

The most common reason for writing a literature review is to provide context and background for the thesis project (Neuman, 1997), and to present a critical, comprehensive review of related research (Lang and Heis, 1991). This portion of the document serves to establish the significance of the thesis research question and to provide the reader with an overview of how the thesis project at hand fits into the larger picture and related implications within a larger realm of knowledge (Neuman, 1997:89). In this light, a review of related literature was undertaken and is a critical part of this overall piece, particularly given the complexities involved in the subject area at hand (i.e. Indigenous environmental management). In line with this thinking the literature search included in this document was conducted to obtain information on environmental conditions on Aboriginal lands in Canada; Indigenous political and organizational structures, history, and land issues; Government of Canada environmental management programs and policies; legislation applicable to reserve lands; and related social-economical and philosophical considerations.

The literature reviewed for this thesis project was obtained from a number of sources. Information that is specific and current that relates to this subject area is typically not readily available from library sources and not overly easy to locate. Part of the reason for this is because focus on this area of study is relatively recent. For example, the first countrywide technical assessment of major environmental contamination on reserve lands in Canada began in the 1990's and is still ongoing (DIAND, 2009). Also, information that is available in Canada is often generated outside of the academic

forum, which relates to Lang and Heiss's emphasis on the difficulty of finding literature for non-statistical studies in general: ``they tend to have a qualitative rather than a quantitative nature and may be located out of the mainstream of conventional sources" (1991:76). In Canada, the most current information seems to stem from direct feedback from Aboriginal Communities and/or those working in partnership with them. General documentation that covers Indigenous traditional approaches and their linkages to environmental management often takes place in the form of assessments and interviews done by either environmental organizations (such as ICE), government personnel, or specialists tasked with environmental management roles within Indigenous Communities. That being said however, there are several relevant academic studies which have focused on this topic and are referenced here. An extensive search of internet resources was conducted to locate organizations that provide services related to environmental management programming. Canadian and American Aboriginal organizations, government agencies, and environmental Indigenous organizations were also surveyed. Please see Chapter 3.1 for a more detailed treatment of the related literature.

2.3.2 Tool #2, Needs Assessment Questionnaire

The data from this thesis project are generated from the results of the ICE study, i.e. three separate environmental conferences, which took place in 2008 on Aboriginal Peoples and the Environment as outlined in Table 1 below:

Conference name	Location	Date	No. of participants
Haudenosaunee Environmental Gathering	Wahta Mohawk Territory in Muskoka, Ontario	Tuesday, Nov. 20th to Thursday Nov. 22nd, 2007	38 participants
OjiCree Environmental Gathering	Thunder Bay, Ontario	Tuesday, February 12th to Wednesday February 13th, 2008	20 Participants
Aanishnaabek Environmental Gathering	Sault Ste. Marie, Ontario	Tuesday, March 18th and March 19th 2008	52 participants

Table 1: Environmental Conferences Information

Planning processes and dialogues between different groups can require a great deal of time to arrange and occur (Peterson, 2007: 304). Organizing the ICE conferences took several months, and included multiple iterations of the proposed process, re-definition of questions and scheduling time for various groups of people to conveniently meet and discuss shared items of interest.

A key focus of this thesis research is an evaluation of the community assessment questionnaire (see Appendix 1). As previously mentioned, in this thesis project, the data generated by the questionnaire used in the ICE study conferences are qualitative,

and will be analysed using quantitative methods (see Chapter 4). The questionnaire consisted of a broad open-ended question on the effects of environmental degradation and the general impacts to health, governance and environment, which was then broken down into 4 answer sub-groups. The Assessment Questionnaire used in this research was prepared by Environmental Defence for us at the three conferences, specifically for working with Aboriginal Communities during each of the three two day conferences. The questionnaire is a tool used to facilitate discussion as the participants considered the environmental needs and issues within their individual Communities and developed their own community strategies on pollution and the environment.

To develop the specific assessment questions, both Environmental Defence and ICE sat down together as knowledgeable organizations with regard to Indigenous issues in Canada, each having worked at the community and political level. From this combined sharing forum the questions were jointly developed. According to the director of ICE, the background/rationale was not formal as these questions are basic questions which are known to be applicable to Indigenous Communities (ICE, 2008). Specific consultation regarding the exact questions was not completed except to the degree mentioned above. However it should be noted that this thesis project was initiated with the knowledge that the need to identify issues had been documented and made obvious during past projects.

The goal of the ICE study was to establish a process that could collectively detail issues that both Environmental Defence and ICE have encountered as they work with

Indigenous Communities. Most of these issues can be documented at the ground level and are generally acknowledged by residents in the Community when consulted. ICE also drew on experiences from a previous case study it had engaged in wherein the results indicated that Canadian Aboriginal Communities do not have much legal weight or options when it comes to enforcing environment law. To this end, both ICE and Environmental Defence believed it crucial for Aboriginal Communities in Ontario to develop environmental management bylaws and/or regulatory mechanisms specifically for environmental protection, and to have in place processes for ensuring funding to implement and monitor these mechanisms. To begin the process of working towards an improved environmental management regulatory system, the first step is to bring together the Community, determine common issues for consideration and lay a platform for moving forward. The questions were designed with particular consideration given to women, Elders, youth and spiritual knowledge keepers. This was done so that they might in the end feel empowered to take on the responsibility for being involved with implementation of environmental management strategies and plans (if they so chose) thereby supporting other entities traditionally delegated this leadership and planning role, such as Chief and Council and the Government of Canada. The involvement of a wide-range of Community members in these types of conferences also empowers people at the grassroots level, the Aboriginal Communities at large, in terms of locating resources and structuring environmental bylaws or an environmental regulatory system that such Community members are willing to employ.

In the end, the facilitators of the conferences (ICE) decided to focus on the first question in the questionnaire, which is a relatively broad and open-ended type of question: "How has pollution and the environment impacted your exclusive use and enjoyment of your territory, cultural activities, hunting, fishing, traditional knowledge and gathering of medicines?" This was done to ensure the involvement of all participants and to provide a net to capture as many results and viewpoints as possible. This approach fits well with objectives of qualitative research, the overall goal of which, according to Silverman, is to "...gather an authentic understanding of people's experiences and it is believed that open-ended questions are the most effective route towards this end"(1993:10). Once again, given the diversity of knowledge, experience and situations faced by the various interviewees, this approach was deemed to be the most acceptable. The results of the questionnaire were documented by conference facilitators, reviewed by organizing partners and then provided to the researcher for analysis. The questionnaire results are presented and discussed in Chapter 4.

2.3.3 Tool #3, Draft Community Strategies on Pollution and the Environment

After participants identified their concerns through completing the assessment outlined in the section 2.3.2, they worked together to devise possible community strategies to address pollution issues on their land and to ensure continuous protection of healthy populations and ecosystems. These draft strategies are also considered in conjunction with the results of the assessment questionnaire and also informed the discussion throughout this thesis project where applicable. The results of the draft community planning strategy exercise are presented and discussed in Chapter 4.

2.4 Participants Selection

Participants in the ICE study were invited according to two criteria: linguistic profile and geographical location. Inherent differences in social, geographical and economical circumstances within and between Ontario Indigenous Communities played a major role in the consideration of how best to achieve a group of participants with as much diversity as possible, while remaining within the range of the allocated budgets and timeframe. To foster a forum that was dynamic, accessible, and as representative as possible of the grassroots level, the ICE organizers of this event chose to select participants for three workshops based on three linguistic profiles, instead of choosing members from specific reserves or community locations. Reserve size and populations and general community characteristics can vary drastically across Ontario (just as non-Aboriginal communities vary significantly). In terms of Aboriginal Communities, differences in circumstances, including geographical location, economical conditions, natural resource use and environmental management issues, there is much diversity in the province of Ontario, and indeed Canada wide as well. Representation of 3 different broad linguistic areas helped to ensure that a wide range of environmental concerns was reasonably addressed; inviting representatives from a particular linguistic area versus a specific Community allowed the organizers to 'cast a larger net' in terms of increasing the scope of participants and offered an opportunity for different Communities to work together and foster working relationships towards the achievement of shared goals. This approach also increases the scope of the type of experiences that can be shared, particularly in terms of failures and successes in environmental management and

sharing of best-practices by those Communities that have embarked on interesting ways of addressing their environmental dilemmas. It also provided an important opportunity for the Communities themselves to draw and witness various parallel themes and common issues which arose during the discussions.

As mentioned, the participant scope was broad, and attendees varied widely in their duties at the community level as well as at a professional level. Open calls were sent to Community leadership for involvement, and emphasis was made in particular towards women, elders and youth. Each group was comprised of these three categories, in addition to environmental specialists and political leaders from each of the following groups in Ontario: 1. Haudenosaunee Communities, involving representatives from four Mohawk Communities across Ontario (Akwesasne, Tyendinaga, Six Nations and Wahta). 2. OjiCree Communities, involving members from 6 OjiCree Communities across Ontario (Wawakapewin Nation in Sioux Lookout, Weagamow Lake Nation, Webequie Nation, KI Nation, Nishnawbe Aski Nation in Thunder Bay and Independent First Nations Alliance). 3. Aanishnaabek and Cree Communities (these two groups decided to hold their conferences jointly), involving representatives from the following twenty Ontario groups: Aamjiwnaang, Atikamekshong, Aundeck Omni Kaning, Batchewana, Ketagawseebne, Kettle and Stony Point, KI, Fort Albany, Garden River, Long Lake #58, M'chigeeng, Missanabie, Moose Cree, Moraviantown Delaware, Naicatchewenin, Pikwakanagan, Red Rock, Sagamok, Shawanaga, Sheguiandah, Stanjikoming, Wabaseemoons, Wequedong, and Wikwemikong.

In total the ICE study conferences generated 110 participants. Females seemed to be slightly more highly represented than males. Furthermore, each session included a minimum of two Community elders and two youth (persons under 20 years of age). 38 participants attended the Haudenosaunee Gathering, 20 participants attended the OjiCree Gathering and 52 attended the Aanishnaabek and Cree Gathering. In addition, several guests were invited from other areas to share their particular expertise on environmental subjects, including representatives from the Pas Nation in Manitoba and the Fort Qu'Appelle Nation in Saskatchewan.

Chapter 3: Related Literature and Theoretical Framework

Having provided the reader a detailed overview of the methodology to be applied in this thesis project, this chapter presents the general literature which is related to the thesis research at hand and gives a broad background and necessary context to the issues. Section 3.1 provides an introduction to environmental management on Aboriginal lands in Canada in general and of the common issues and themes a reader may want to keep in mind throughout this thesis project. Section 3.2 involves a discussion of the general approach to environmental management on Aboriginal Lands in Canada. Section 3.3 provides an overview and analysis of post-colonial thought that relates to the subject matter at hand. Section 3.4 consists of a discussion of the historical context, division of power between Canadian governments and a discussion of the regulatory gaps that currently exist on reserve. Section 3.5 provides a discussion on the differences between western and Indigenous philosophical approaches. Finally,

Section 3.6 involves a discussion of adaptive co-management as it relates to Aboriginal environmental management.

3.1 Introduction

> *We the Indigenous Peoples, walk to the future in the footprints of our ancestors.*
> *From the smallest to the largest living being, from the four directions, from the air and in the land and the mountains, the creator has placed us, the Indigenous peoples upon our Mother the earth.*
> *The footprints of our ancestors are permanently etched upon the lands of our peoples...*
> *...We maintain our inalienable rights to our lands and territories, to all our resources – above and below – and to our waters. We assert our ongoing responsibility to pass these onto the future generations...*
>
> -Kari-Oca Declaration (1992)

The objective of this chapter is to provide a framework for analysing, in a robust if not entirely comprehensive manner, the multi-faceted subject area of Indigenous environmental governance in Canada. The cognitive stance taken in regards to this topic is more reflective rather than critical, given the relative youth of this academic focal area (as will be elaborated upon). In order to properly situate the reader within a suitable theoretical framework it is first important to note that literature which focuses on Aboriginal Peoples and the environment are as diverse and dynamically different as the terms themselves. In some instances forms of resistance to non-Indigenous environmental governance are the focus, in others property rights and self-determination, and in still others the impacts of off-reserve contamination and development, to name but three.

The interests and requirements of Aboriginal Communities often overlap with those of non-Aboriginal groups, however they are typically unique, and often comprise 'nations within nations' (Craig and Davis, 2005). Literature which addresses environmental management on Aboriginal lands does not consistently take this into consideration. In short, it seems that there currently lacks a complete and *holistic* framework for analysing and discussing Aboriginal environmental management. To this end this chapter includes perspectives from a diverse set of literature in order to broaden the discussion of elements that influence environmental management on Aboriginal lands. This is done to ensure there is a way of bringing existing and future studies together within a common frame of analysis so that we do not fail to respect the complex unity of these studies, and to avoid a response to them that is fragmented, non-supportive and/or inappropriate. The aim here is to draw attention to applying a lens of unification on the diverse literature throughout this and other sections in the hopes that future analysis, even where they seem to be topically different, are undertaken with the same intention. An historical approach is also woven throughout this chapter, as is crucial to investigations that involve negotiating identities against the backdrop of changes in dominant discourse (Hornborg, 1998: 9).

Despite their reputation for being vulnerable, sensitive and susceptible areas, considerably little academic research has focused specifically in on this particular area to date and many concepts and constructs have not been explored. Indigenous environmental governance is a legitimate topic of study that requires the bridging of

several disciplines. There has been a tendency to approach this research area within a context that conceptually separates governance and administration from the environment. In the context that the term 'environment' is applied in this thesis it is a system of all biotic and abiotic organisms and components existing within a particular regional, national or global ecosystem. For our purposes, `government', be it federal, provincial, municipal or tribal council, is simply one facet of the overall ecosystem which reserve lands are also a part of.

A note on Aboriginal environmental governance in general: As asserted by the Institute on Governance, a governance think tank operating in Ottawa, governance in general has become a very 'hot' topic in recent years as evidence increases on the critical role it plays in determining societal well-being (Amos, 2003). 'Governance' does not relate specifically to governments as entities but instead is concerned with how societies as a whole interrelate and make decisions. Governance can be analysed at the global, national or community level (DIAND, 2003).

In this section we aim to flesh out and explore the evolving area of 'Indigenous environmental governance' (i.e. the measures and overall system in place to address pollution and protect land for future generations). Various national and sub-national Indigenous environmental organizations have begun, in their individual ways, to lay out a framework with strategic components of this new environmental governance paradigm (for example, ICE, the Assembly of First Nations, the First Nation Land Management Association, the Six Nations of the Grand River, the First Nations of

Quebec and Labrador Sustainable Development Institute, the First Nations Technical Services Advisory Group, Building Aboriginal Environmental Human Resources and the Centre for Indigenous Environmental Resources).

Sound governance practices, such as community-based planning, are in many instances a precursor to establishing environmental protection regimes that are effective and that also stick once the planning phase is over. For our purposes, an Indigenous environmental governance approach is most concerned with governance or decision making frameworks at the community level and typically applies an `ecosystem approach`, wherein the entire system, including all components and their connections, is considered, rather than its individual parts. An ecosystem approach also draws equally on both traditional knowledge and scientific knowledge. As explained by Keith,

> "From an Aboriginal perspective, 'traditional ecological knowledge' is a way of knowing and thinking about ecosystems. And because people are a part of the environment, human activities are a part of traditional ecological knowledge...It is becoming apparent that all ways of thinking about ecosystems are helpful in developing an ecosystem approach. No one way is sufficient" (Keith, 1994: 1).

A great deal of the literary sources that focus on Aboriginal lands from a scientific perspective are in the form of scientific assessments and land management planning authorities. Physical scientists with the exception of ethnoecologists have been criticized for their seemingly non-holistic approach to research, as it does not leave conceptual space for the subjects of their study to have input into or be full participants in the research process. As evidenced by Hannibal-Paci and others, physical scientists

have largely discounted culture and language from their analysis and this bias has generally marginalized Indigenous knowledge from the physical sciences (Hannibal-Paci, 1998: Smith, 1999). Aboriginal natural resource management literature is sparse, involving the application of western ideals and views within Indigenous contexts. Likewise mainstream natural resources literature is largely inspired by the marriage of western management studies and the natural sciences.

As will be made evident throughout this thesis project, the majority of sources which are specifically applicable to the subject area of environmental management on Indigenous lands are developed by government, Aboriginal organizations and First Nation, Métis and Inuit Communities themselves. The few post-secondary academics who have spent time in the last century exploring Indigenous environmental governance have done so within substantially different contexts and platforms. They also often find themselves meeting preliminary challenges related to the scope of this issue and needing to address and/or consider broader issues related to self-governance, institutional capacity and the unique legislative framework within which these localities exist (Bradly, 2004). A major question attached to this thesis subject area centers around the relationship between establishing effective environmental protection measures and the governance climate within a particular area. Research shows that environmental governance is intimately entwined with the self-governance plight and ambitions of most Canadian Aboriginal Communities (Graham, 2003).

3.2 Environmental Management on Aboriginal Lands

If we want to properly understand the dynamics of Indigenous environmental management (with the attendant social, cultural and biophysical associations), an understanding of the regulatory and policy environment in which Indigenous issues play out is key. Aboriginal Peoples in Canada occupy a unique position under Canadian law and such matters can only be properly addressed within the context of a very large, complex regulatory framework. Aboriginal Peoples in Canada have rights of sovereignty, government, and land and resource use that distinguish them from other types of Canadians. Furthermore, Aboriginal Peoples in Canada are given specific recognition under the *Constitution Act, 1982* and are defined in accordance with this Act as Indians, Inuit and Métis. The fiduciary relationship between the Crown and Aboriginal Peoples is grounded in s.35 (1) of the *Constitution Act* (Imai, 2009: 533)[1].

The *Indian Act* is the federal piece of legislation, administered by DIAND, which sets out the responsibilities of the Crown in regards to its responsibilities towards Aboriginal Canadians, in addition to setting out the parameters of governance issues that can be delegated down to them. DIAND, in accordance with the *Department of Indian Affairs and Northern Development Act* (DIANDA) is the federal department responsible for the administration of the *Indian Act.* In accordance with DIANDA, DIAND has responsibility for all matters not by law assigned to any other department,

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[1]For further discussion see Report of the Expert Panel on Safe Drinking Water for First Nations: Volume I and *Delgamuukw v. British Columbia* [1997] 3 S.C.R. 1010 (S.C.C.) wherein the Supreme Court of Canada confirmed that Aboriginal title lands, like *Indian Act* reserves are for constitutional purposes "lands reserved for the Indians".

board or agency of the Government of Canada, relating to (a) Indian affairs; (b) Yukon, the Northwest Territories and Nunavut and their resources and affairs; and (c) Inuit affairs (R.S., 1985, c. I-6). Despite the mandated role of DIAND, it is important to recognize that it is the federal family of departments as a whole which retain the primary fiduciary relationship with Aboriginal Canadians and their lands (Imai, 2009:633-635). To briefly illustrate this point, fishing is an activity that occurs on Aboriginal lands, however it is the responsibility of the Department of Fisheries and Oceans to regulate Aboriginal fisheries.

In certain circumstances, the fiduciary duty of Canada is also extended to the provincial crown (Imai, 2009:635-637). In terms of provincial responsibility in Canada, Section 88 of the *Indian Act* provides that laws of general application, that are in force in the province in which a reserve is situated, will apply to Indians living on or off the reserve. However, to date most of the Canadian Court system has not upheld this section, most case law generated relating to this issue has not maintained the applicability of the section or simply ignored it. To illustrate, the Supreme Court of Canada in several judgements has commented on this issue but have not made any decisive pronouncements[2].

The primary asset held by Aboriginal Peoples currently coveted by dominant society is the land itself, which has generally shaped the relationships between Aboriginal and

[2] In *Cardinal v. Attorney-General of Alberta*, (1973) 40 D.L.R. (3d) 553 (S.C.C.) [hereinafter *Cardinal*] Laskin J. dissenting on other grounds concluded that s. 88 "deals only with Indians, not with Reserves". The majority did not consider this issue. In *Derrickson v. Derrickson*, [1986] 1 S.C.R. 285 (S.C.C.) the Court reviewed the arguments for the two positions but did make conclusions on the matter.

non-Aboriginal groups (Hornborg, 1998:11). Protecting the condition of the land continues to become a primary concern for most North American Communities, who often manage their lands in partnership with the federal government. Aboriginal Communities in Canada receive billions of dollars annually through a suite of over 340 programs, and 34 different federal departments and agencies (DIAND, 2009). Most of the funding is provided for provincial like services and programs, such as socio-economic programs and capital infrastructure. Administrations of programs, except those that are project-based, have been devolved to the community level. In fact, DIAND now transfers more than 80% of its funding directly to Communities for the delivery of programs and services. DIAND's role has thus become that of a funding agency, versus solely a service provider (DIAND, 2003:11). Environmental management is thus a co-management process, which is often undertaken on a program-by-program basis. The funding provided to a Community varies from region to region and also depends on regionally defined priorities.

There have been recent legislative changes, especially to s. 82 of the *Constitution Act, 1982*, which are fundamental to the recognition of Aboriginal rights and Aboriginal interests in natural resources and are complemented with an increasing amount of related Canadian case law[3]. These types of legal evolutionary changes have enabled Canadian Aboriginal Peoples to shift towards asserting their own rights, overseeing their own social and economic projects and programs and managing their own lands as self-governing, independent Communities (DIAND, 2003).

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[3] For additional specific examples of Canadian case law that is relevant see Imai, 2009, 584-598, 599-602.

Canada's fiduciary duty to Aboriginal groups is evolving, particularly in response to recent Supreme Court decisions and the growing momentum of Aboriginal Communities to continue moving along the self-governance continuum: "The right to Aboriginal title "in its full form", including the right for the Community to make decisions as to the use of the land and therefore the right to have a political structure for making those decisions, is, I conclude, constitutionally guaranteed by Section 35" (Justice William J., 2000)[4]. The goal of most Aboriginal Communities in Canada reflects those in many other countries and is to achieve, or rather re-establish, their right to self-govern (Short, 2002). To this end there have been some substantial shifts in the approach of both Aboriginal Peoples and the government of Canada in regards to how these two groups interact, negotiate and create change. While many Communities remain fully administered under the *Indian Act*, others are partly self-governing in that they have negotiated 'sectoral self-governance' agreements with the federal Crown, and others still are under full self-government agreements, whereby they are responsible for full legislative and administrative control over their lands, programs and projects. In effect, they operate as very small provinces. Over 300 Communities in Canada are currently involved in some sort of sectoral or full self-government negations (DIAND, 2008). Collaboration of the State and Aboriginal Peoples has also lead to several recent legislative initiatives which aim to put Aboriginal Peoples back into full control of their own lands legal and politically. These initiatives include the *First Nation Commercial and Industrial Development Act*, the *First Nation Oil and Gas Moneys Management Act*

[4] See Justice William J. in *Campbell v. British Columbia (Attorney General),* 2000 BCSC for the full text of this key decision.

and the *First Nation Land Management Act* (FNLMA). The FNLMA, enacted in 1999, is one initiative which is theoretically geared to legally recognize at the federal level increased self-governance at the local level, which is in turn linked to maintaining the environmental integrity of reserve lands.

Despite these opportunities, however, Canadian Aboriginal Peoples have not always been included at decision making tables (Berkes et al., 2001:459; DIAND, 1997), despite the value to be obtained from Indigenous cultural, traditional and scientific knowledge. When Aboriginal Peoples are not included in decision-making processes sovereignty, treaty and self-government rights can be violated (Smith, 1999). Furthermore, where the door is open to participate, Communities may lack the financial resources, institutions and infrastructure to fully participate and address their environmental problems (Arquette et al., 2002).

The early policy approach of the federal government in Canada was to assimilate and manage Canada's Aboriginal Peoples, primarily through severely restricting their rights and territory and bundling them into small parcels of land known as reserves (DIAND, 1997). According to the Royal Commission on Aboriginal Peoples, "Reserves were designed to protect Aboriginal people and preserve their ways, but operated instead to isolate and impoverish them" (DIAND, 1997). Colonial and Canadian governments began establishing reserves as early as 1637. In 1857 the Province of Canada passed an act to "Encourage the Gradual Civilization of the Indian Tribes", providing a mechanism for Indians to be officially declared "non-Indian", as long as they were "of

good character" (DIAND, 1997:14). During the colonization of North America, the Indigenous Communities not only lost control and self-autonomy over their culture and ability to self-govern, they rapidly became both superfluous and increasingly dependent on the economic system of the colonizers.

The negative effects of assimilation were felt by all Indigenous peoples in North-America, an issue addressed by Thornburn (2003), who has examined Indigenous cultural livelihoods which are dependant on traditional knowledge as well as the use and ownership of natural resources and the impacts of European economic, social and cultural systems on this. Some fear that, despite efforts such as those described in this thesis project which aim to empower Indigenous groups to reclaim their authority, the process of assimilation is not over (Leslie, 1999; Powers, 2001). Perhaps there is an opportunity to heed a warning from abroad? Damien Short has evaluated the assimilation process within another commonwealth country, Australia. In 1991 Australia introduced 'the reconciliation process' to address political and social imbalances and historical atrocities. Short argues that assimilation is the true agenda and that, essentially, Australians have incorporated only what they, as Westerners, deem valuable from the Indigenous culture and have failed to address any historical wrongs. He argues that reconciliation in Australia is one-sided process, framed in Australian Nationalist discourse which simply limits Indigenous aspirations (Short, 2002:24-49).

Academic research has now established solid links between cultural continuity, self-determination and health (CBD 1992; Cornell and Kalt, 2003; Yuksel, 1998). Culture is what gives a Community a common vision and goal and is how sacred knowledge regarding natural resources and systems is preserved and shared. Many decisions that relate to land use and environmental decision-making today on reserve (such as departments and agencies administered by Band Councils) are informed and continue to be informed by core cultural values (CIER, 2007). For instance, the Tla-O-qui-aht Community in British Columbia views the practical application of environmental protection regimes as `a translation of our traditional values, practices and laws`, emphasizing the importance of bringing out the traditional components inherent to the community structure when articulating a Communities' vision of what Indigenous environmental management is (Augustine, 1998; Enns, 2008: 6).

It follows then, that effective change and improvement in areas of environmental management is most readily achieved when complemented with the cultural and socio-economic values of a Community. This is recognized internationally by the Convention on Biological Diversity (CBD) which was ratified by Canada in 1992. The ratification of this Convention coupled with options presented in federal legislation provides important components of a growing legal framework to support the inclusion of culture and traditional knowledge approaches in the governance framework on Aboriginal lands in Canada. There are various ways in which Indigenous groups in Canada are currently becoming involved on both national and international scales to sharing their concerns and interests with respect to biodiversity and environmental protection.

Several Indigenous environmental organizations have become specifically involved with furthering the cause of the CBD and raising the profile of Indigenous concerns that relate to biological conservation including the Canadian Indigenous Biodiversity Network (2001), the International Indigenous Forum on Biodiversity (1996) and the Indigenous Women's Biodiversity Network (1998) [5].

As previously mentioned, many Communities do have fully functioning governments and their own successful commercial and non-profit enterprises. In this context, some Communities are well suited to take on environmental management responsibilities in a sound manner which begs the question of why this hasn't happened yet (with noted exceptions). One consideration is that over the last several decades the western emphasis in relation to environmental conservation has typically focussed on sustainable development at the global level and national levels. However, various academics and Community leaders question the philosophical beginnings of global sustainable development and how it truly impacts modern day environmentalism. Brundin (1996) questions whether a scenario has been created where this 'global ecology' approach in fact limits the voice and role of local Communities in addressing applicable environmental issues. Brundin was involved in geographical research of a community-based natural resource management program in Namibia. The results of Brundin's project suggest that the larger territorial views of the environmental actors the less able they are to address environmental issues. Brundin emphasizes that

[5] Two additional prominent indigenous environmental national organizations in Canada include the Centre for Indigenous Environmental Resources and the Indigenous Cooperative on the Environment. Other national organizations also contribute directly to research and raising the profile of indigenous concerns in this area and include the National Aboriginal Land Manager's Association and the Assembly of First Nations.

sustainable development as a global ecology approach does little at the global level to address root causes of environmental problems and poverty. It therefore does not necessarily benefit local (or traditional) knowledge from the community perspective, nor does it enable local Communities to play an active role in environmental decision-making and processes.

Without effort and cooperation environmental management approaches and policies will not evolve and may continue to be driven primarily from the strategic level without the necessary input from stakeholders. To illustrate, Brown (1999) examines the participation of American Indian tribes in off-reservation environmental decision-making in the Washington state. Brown considers the positions of two different Aboriginal groups facing environmental management dilemmas that must work closely with the state to achieve results to this dilemma. Overall, Brown supports the argument that to be able to manage their environmental affairs more support is required for local approaches to Indigenous and resource protection (i.e. more support is required for local self-governance mechanisms in the area of environmental protection). Brown's research also delves into the issue of respecting Aboriginal rights, for instance, the right to fish included in various treaties in both Canada and the USA. Questions arise here such as, to what extent should Aboriginal Peoples be included and/or compensated when an off-reserve project has serious on-reserve implications? Both Brown and Diego (2004) demonstrate that there can be ways and interesting possibilities to preserve resources and promote economic activity simultaneously.

Previous research suggests that strategies for addressing current gaps need to begin with including all stakeholders as equals in discussion and planning circles to determine first hand what their needs are. For instance, the findings of Strinson (2004) indicate that certain powerful stakeholders may have the upper hand in benefiting from a project while those that are marginalized do not. Strinson emphasizes the necessity of engaging with the marginalized stakeholders involved in a project as having utmost importance if desired results of conservation and empowerment are to be achieved.

Finally, before an environmental management framework can be applied from an Indigenous perspective, it is necessary for the Community to have access to up-to-date information regarding the status of the land. Ensuring enough resources are available is critical. For instance, resources for biophysical inventories and assessments of pollutants and environmental problems within a particular region will increase the knowledge base of decision makers and enable empowerment in terms of making more informed decisions (Armtiage, 2007). This does however raise one important issue, a particular theme surfacing throughout this thesis project, which is the growing concern over diminishing biological and cultural resources and the control over said resources. There are increasing tensions that exist between contemporary biological innovations and the (perceived) threat that Indigenous and local knowledge pose to such innovations. This debate is illustrated by Harrison (2000), who explored establishing a registry to track and protect Indigenous knowledge (Harrison, 2000). Her project was specifically undertaken to sustain claims over knowledge. Despite its objectives, Harrison argues that the Registry does not effectively assist in addressing existing

needs due mainly to the gap between the assertion that it will protect traditional knowledge and the manner in which this is to be achieved. Harrison teaches us that to be effective, a mechanism needs to focus on local initiatives that emphasize process instead of product and thus facilitates a more dynamic understanding of Indigenous Peoples. This is one factor that would allow for a shift from a strategic (state in control) approach to a more ontological approach towards traditional knowledge protection (Harrison, 2000).

Throughout this thesis project I will continue to sensitize the reader to the idea that Indigenous environmental management is hybrid in nature for both process and in terms of academic reflection. The key take-away point is that no particular theoretical lens is completely appropriate for analysing this subject, (albeit some do seem to be more appropriate than others, i.e. post-colonial literature, feminism and adaptive co-management). Rather, several disciplines and approaches can be bridged together to create a more holistic framework for analysis.

Meanwhile, Canadian Communities will continue to move through this new territory and hopefully decision makers and Communities alike will build on what works locally and internationally, drawing on case study examples (such as those discussed in this thesis project) in order to move forward in creating and solidifying a sound foundation for environmental management.

3.3 Post Colonial Literature

While the quantitative revolution which occurred in the 1960s brought the positivist forum to the forefront, it is important to realise that the roots of western research methods go much further back than this era. Academics have argued that the pursuit of knowledge and seeing Aboriginal Peoples as 'research subjects' is deeply embedded in imperial colonial practices. Postcolonial literature is speckled with writings which discuss the experiences and lasting effects of Peoples subjugated to colonialism and their journey towards political and cultural independence. One example is the work of Linda Smith (1999), which provides a thorough account of the philosophical foundations, nature and impact of western approaches to research as a key component of Europe's assimilation strategy and overall treatment of Aboriginal Communities. This leads to our next point; one of the main criticisms surrounding Indigenous literature sources is that nearly everything that westerners know about these groups was collected through western 'research' (Smith, 1999). Such research in western society is then used to legitimize policies, laws, and regulations that are applied to Indigenous populations. Do our current sources really represent the ultimate truth? The answer to this question opens the doors to an ongoing debate the inclusion of which is beyond the scope of this thesis. Suffice it to say that to many Indigenous persons globally, the very term 'research' is considered a bad word, one that conjures up images of white supremacy, insulting, arrogant and degrading methodologies, and the ongoing loss of land, culture, power and the right to self-govern to name only a few (Smith, 1999).

There are various newer philosophical forums which point to the excesses and problems of science and positivism and their influence on Indigenous matters. Some philosophies may be considered friendly to Indigenous holistic approaches. Feminism as philosophical forum, for example, arising as a backlash to the scientific revolution, doesn't call for writing about `research` within a specific scientific or disciplinary approach (as is typical of other approaches). As Nedelsky discusses in her essay on 'Citizenship and Relational Feminism', "...the existing structures of inequalities are among the effects of the colonialism that imposed the nation-state structure – and its accompanying conceptions of citizenship –in the first place" (2001:131). Other academics are also developing newer concepts of biodiversity and environmental protection from a spiritual and cultural perspective to assist modern-day environmentalists in their desire to shift to a more holistic, earth-honouring worldview.

Why are such philosophical infiltrations important or relevant in today's world, in particular this research subject? The answer to this is because of the lasting impact their influence has created. What perhaps is required is a new emphasis on the Indigenous perspective to at the very least complement or be included within current regimes of power. Since colonization, Canada's Aboriginal population has been subjected to a process called assimilation, wherein it is arrogantly assumed that they could be 'managed' and defeated, first through warfare, and then through 'blending' those that remained into European culture (DIAND, 2002). Instead, what has resulted is an Aboriginal state of affairs that is still unique unto its own, somewhat impoverished and dependent economically on the federal state. From an environmental perspective,

reserves are the only populated territories in Canada which do not have the benefit of an adequate environmental regime or framework to ensure they have the same protection as the rest of Canadians (Moffat and Nahwegahbow, 2004). It would seem that there is a much needed rediscovery of Indigenous natural resource systems, versus the current policies which sometimes neglect to take into account the underlying causes of environmental problems in the first place (Berkes et al., 2001; Yuksel, 1998).

Without both appreciation for the value of Indigenous knowledge and perspective as well as appropriate methodologies for collection and sharing purposes, the problems may only continue to be perpetuated. This in and of itself however is certainly not suggested as the magic bullet solution. That all Aboriginal groups act altruistically or have histories of acting in altruism from an environmental standpoint would be a false statement. This point will be expanded upon below. It is however becoming commonly accepted that they have a better track record than those that attempt to colonize them (Berry, 1999:3). The desire here is to not become caught up in the unsolvable debate of whether or not Aboriginal Communities are in fact more environmentally responsible than their non-Aboriginal counterparts, however it is crucial to be aware of representational politics as an important discourse area underlying environmental governance, including community-based planning. It is now commonly acknowledged that the romanticization of Indigenous peoples by non-Indigenous groups is an issue globally (Hornborg, 1998).

There are complex ramifications stemming from Indigenous people becoming identified as representation of pristine, natural regions of wild terrain, and eco-friendly practices by nature. Hornborg critically addresses this point: "Cultural diversity and ``traditional ecological knowledge`` are today championed as crucial to ``sustainable development``...the kind of ideological content projected onto Indigenous Peoples by dominant discourse has thus played a vital role in shaping their strategies for self-identification``(Hornborg and Kurkiala, 1998: 8). The end result of this is that Aboriginal Communities become idealized while they are simultaneously existing in disadvantaged and sometimes destitute conditions. As Aboriginal Communities are idealized as representing what is sustainable, pristine and natural, they become inextricably tied to the natural landscape of which they are a part of (Hornborg and Kurkiala, 1998:8). When a Community then engages in an activity which does not reflect the aforementioned values, support from non-Aboriginal groups may flounder. One solution to this scenario may lie in the fashion in which we go about constructing discourse surrounding Indigenous issues in general. This could perhaps be more appropriately approached on a topic-by-topic basis, with supporters joining together to address a shared concern that can be articulated, through Indigenous self-determination (or any other Indigenous issue), to another concern. For example, both the environmental and peace movements found common ground in uniting for Indigenous self-governance, as documented by Barron, who discusses linkages between the two and advocated for a `politics of articulation` versus 'politics of representation' in her piece on political representation and articulation in support of the Labrador Innu: ``...an important enabler between non-Aboriginal activists and Innu people is the

construction of a discourse both can share. In this case, the discourse of solidarity has been derived both from supporters' commitment to justice and from the popular belief that land stewardship by Indigenous people generally may offer us all salvation form environmental crisis`` (Barron, 2000:93).

Barron goes on to suggest reframing this entire debate conceptually, to focus on the position of Aboriginal Communities in regards to particular subjects and their choice and ability to link their concerns to the concerns of other networks, for example environmental sustainability. Barron calls for a politics of articulation versus the more common applied representational politics, wherein Aboriginal groups `identity is premised on differences from the other' (race, culture, etc.). A politics of articulation means that the identity of political actors is defined as one's position on a particular subject, as it is linked (articulated) to other subject positions. As Barron asserts:

> "...a politics of articulation allows for a range of different Innu subject-positions (all of them ``authentic``) and acknowledges that contradiction is inherent in anyone's identity. A politics of articulation thereby takes the debate away from questions of ``authenticity`` and towards the merits and validity of the concerns and arguments Innu pose. In re-casting the debate, a politics of articulation separates the issue of justice from the maintenance of an idealized image, thus resisting the temptation to gloss over the rough edges of reality" (Barron, 2000:103–104).

We can extends Barron`s arguments to issues of environmental justice, environmental management and environmental governance in general. As an environmental researcher I am committed to environmental sustainability, and self-determination, but not in a sense that I am fundamentally fused to these stances. From an environmental researcher's point of view, there is no `natural` marriage to be had between Aboriginal and environmentalists agendas and my support is not given on the basis of what

Canadian Aboriginal's do or do not represent in cultural mythology (pristine quality of land, wild earth, innocence, sustainable use of natural resources, etc.). I agree with both Barron and Hornborg that representational political construction of identity can be both a dangerous and advantageous game. This thesis project attempts to maintain a perspective which is focused on protecting the environmental integrity of the land itself, and is fundamentally about changing societies` practices, versus saving or fixing `the other`. In as far as the struggle of Canadian Aboriginal Communities for sovereignty, self-determination or any additional broader goals and objectives can be articulated to the overarching objectives of this thesis research (protection of the environment), a strong partnership for joint support can be made. In other words, notwithstanding inherent cultural and political drivers, it is a nice bonus that this thesis research is supportive and complementary to other issues facing Aboriginal groups, despite the primary focus of this thesis being on how to move forward in terms of environmental management and how best to empower people to make necessary governance changes in this regard.

3.4 The Environmental Gaps on Aboriginal Lands

This section considers why effective environmental management is an issue requiring immediate attention in many Aboriginal Communities in the first place? Actual control over land and land use decisions are key to understanding, planning for and implementing a sound environmental protection framework. This is particularly the case in relation to regulatory matters, where of late full control over the land does not lie with the state of Canada. Various academic studies have for some time now been

suggesting that this local control/local approaches to sustainable development and environmental management often demonstrate better results better than those that rely on governance from a national or international distance (DIAND, 2005). Canadian Indigenous Communities are mainly situated on land that was traditionally associated with their extended families and ancestors (DIAND, 2003). Due to their historical ties to the land, their protected Aboriginal rights and their spiritual and political beliefs which evolve around concepts of them being protectors of their lands and environments, Aboriginal Peoples have expectations around influencing decisions regarding their territories.

A brief overview of what is specifically meant by `environmental management` in the context of this thesis project may be helpful at this junction. An environmental management system is the framework in place for preventing and managing the environmental consequences of all land, waters and natural resources in a specific area. Key ingredients of effective environmental management systems include planning, development and implementation, reporting and monitoring and finally evaluation and improvement (ISO_14004:2004). There are many different types and definitions of environmental management, however the one presented in this thesis project represents a circular approach, wherein the entire process works in an ongoing cyclical fashion, each component being equally important to all the others. One of the first steps to achieving sound environmental management frameworks then is identification of issues which occurs in the planning phase. To achieve this step a Community consultation process is most effective in ensuing that the issues to be identified and steps to be taken

reflect the needs and desires of the residents and land owners (ICE, 2008; Yuksel, 1998).

On reserve lands in Canada, Communities must address the same issues that the federal, provincial and municipal governments address, albeit without the same level of resources or legislative protection. Historically, as provincial lands and municipalities increased in size and sophistication, they were able to rely on existing familiar institutions of government, which includes the supporting legal and administrative frameworks set up for them. Such has not been the experience of Aboriginal Communities, who after developing their powers of local government, found themselves in a situation where the same legal frameworks and support systems did not exist (DIAND, 2002). The result of this is that Aboriginal Communities do not have the legal protection of being subject to provincial legislation, which covers the vast amount of matters that relate to social and economic activities such as education and health. There was also a lack of recognition of Aboriginal governments as a governmental authority in Canada; legal and political jurisdictions had already been divided between federal, provincial and municipal governments and it is difficult for Canadian Aboriginal governments to establish themselves within this framework. Furthermore, in the majority of instances across the country, there are no effective processes for enforcing and implementing Community by-laws. For instance, Aboriginal Communities sometimes lack effective access to the Canadian court system which impedes their ability to enact and enforce their own laws (ICE, 2005). Serious issues currently exist at each stage of the process, from the drafting of laws and

policies, to enforcement by police, to prosecutions in court and the recovery of fines. Consequently some Aboriginal groups are reluctant to enact by-laws that ultimately cannot be enforced or prosecuted, leaving them with a problem that remains unresolved (DIAND, 2002:8). This last issue is important because, as will be discussed later on, enforcement and prosecution of environmental offences is a critical component of any effective environmental management framework. Without an effective enforcement system effective legal remedies are often non-available (ICE, 2008).

In addition to the previously mentioned obstacles to implementing effective environmental management on Aboriginal lands, many Indigenous Communities are also in the position of having a very large, unbalanced governance structure. Graham (2007) emphasizes that Aboriginal Communities typically have the largest per capita governments than anywhere else in North America, and comparatively weak independent media sources, private and volunteer sectors. This means there is a lack of checks and balances within the system, rendering it less accountable, in part due to lack of media watchdog and a vigilant volunteer sector. These types of imbalanced governance systems also tend to have too many functions for their limited capacities. They can also, and in Canada often do, create a culture of imbalance which has in and out groups, usually defined via family or ethnic relationships (Graham, 2007:4). These last points around internal politics are key for conceptualizing the current governance dilemmas.

3.5 Research and Knowledge

Research, including this thesis research, feeds into all types of decisions, including those that are specific to environmental management and social economic policy, while knowledge is collected to produce and affirm the said research. Ever since it gained footing in the academic arena in the 19th century geography has been one of several disciplines that has and continues to heavily influence human perception of nature, environment-societal relations and human-environmental relations. These perceptions lead to and heavily infiltrate decision making at all levels of organization in western society, including those that relate to land and environmental protection. Before re-evaluating our beliefs about the natural world and natural resources, and before promoting and creating change within the Canadian organizational structure, an understanding and appreciation of the entrenched philosophical underpinnings of current management practices is required.

A key question that manifests then is, what constitutes valid knowledge, or more precisely, who's understanding of knowledge gets accepted as the 'correct' one? Does the language that is used to record and document knowledge adequately represent the reality? Here we may borrow a key quote from Ludwig Wittgenstein to illustrate: "The limits of my language are the limits of my world" (1922:148). A recurring theme in this thesis project is the part the role of Indigenous knowledge and perspective has in shaping current and future governance practices. One central discourse of this broader theme revolves around research and knowledge. There is a wealth of knowledge and information which exists outside of the traditional western paradigm. Ways of knowing

are different amongst different groups of people. While knowledge consists of information, information is not necessarily knowledge. Indigenous knowledge is generally based on a different set of cultural belief systems than those typically found in the European/western conceptual frameworks. Where the scientific method bases knowledge and truth on being able to 'prove' something according to a specific quantitative methodology, traditional knowledge is traditionally primarily passed on orally and accepted prima facie as truth (Smith, 1999).

The evolving Indigenous environmental governance paradigm involves incorporating cultural and traditional ways of knowing into modern streams of knowledge. From an environmental perspective this knowledge is important to preserve (Berkes et al., 2001: 457). If we have established that there is a need to evaluate our deeply embedded beliefs and strive for a renewed more inclusive approach towards environmental management in Canada, then there is a clear and present role for those individuals or institutions which hold traditional and Indigenous knowledge regarding such land and natural resources. To preserve this knowledge culture must in turn be protected and preserved. As argued by liberalist Kymlicka in *Multicultural Citizenship,* we must work to preserve at risk minority cultures because culture provides options for choice and makes these options meaningful (Kymlicka, 1995:83).

Various academics have in particular emphasized the importance of addressing the connection between knowledge and power (Borofsky, 1993:339; Hornborg, 1998:18). Most importantly we must consider the fact that whomever holds the most power in

society also typically produces the knowledge for that society (Smith, 1999). We can extend this further to the values within society which are considered desirable or preferable and as we shall discuss further, this has had a lasting and challenging impact on the social, spiritual and economic prosperity of many Indigenous groups. As explained by Enns: "Beliefs and values have a direct and determinate effect on human actions, and human actions have a direct and determinate effect on outcomes and realities. If the outcomes are undesirable, we need to take a close look at the beliefs and values that are driving the actions of the people in our organization" (Enns, 2008: 3).

Another way of looking at this issue is to consider that it involves deliberating between natural or traditional law and scientific law (Moffat and Nahwegahbow, 2004). There seems to be an overall positivist approach towards governing and law making with regards to Indigenous Communities within Canada, stemming from the basis that most decisions rely on 'scientific' types of research. The focus of science as it informs current knowledge systems has been to reduce complexity to achieve observational and experimental control, allowing insight into the nature of specific cells, species and communities. However, studying these elements in isolation prevents us from moving forward to understanding complex ecosystems. Keith explains the need to move beyond a dualist perspective on this matter: "There is a distinct need for us to think in terms of systems… Moreover, our analysis must be expansive enough to account both for the significant external forces acting on the system we examine and for the system itself"(Keith, 1994: 2).

The goal in this section is not to assert that either the scientific or traditional knowledge approach is preferable, but rather to support the idea that consideration be given to all perspectives. While various new discourses are making the scene and challenging more traditional approaches to knowledge, (i.e. deconstruction and post-modern philosophies) it remains deeply ingrained.

3.6 Adaptive Co-Management

Despite the fact that environmental management that is specific to Indigenous Communities in Canada is a relatively newer area of academic research, adaptive co-management is one framework wherein we can potentially address it adequately. As will be discussed in this section, adaptive co-management potentially offers a more adequate conceptual space, compared to natural resource literature, wherein the complexities and holistic views of Aboriginal Canadians can be incorporated (Armitage et al., 2007). Furthermore, this thesis project considers the application of Indigenous environmental governance at the grass-roots level in part by evaluating whether our case-study is consistent with key features and attributes of adaptive co-management (see Chapter 5, Discussion).

The process of environmental management on Aboriginal lands in Canada is provincially and territorially specific and depends on level of self-governance capacity, economic situation and environmental expertise which may or may not exist within any particular Community. There is usually a sharing of rights and responsibilities related

to environmental management decisions, for example a committee which includes Aboriginal representatives which advised a federal department as the main funding source of an environmental initiative (Burton, 2007: 26). Land and natural resource co-management arrangements involving Aboriginal groups and Communities have been common for some time in Canada. These types of arrangements are often in place in response to specific localised issues (Berkes et al., 2001). An example is the Wendaban Stewardship Authority in the Temagami region of Ontario (ICE, 2008). Many categories of co-management between Aboriginal Communities and the Government of Canada have, despite any initial successes, begun to see the limitations outweighing the benefits, particularly in light of pre-existing power imbalances, westernized positivist approaches to management and the general inability to respond to dynamic, constantly changing and evolving conditions (Armitage et al. 2007; ICE, 2008; Smith, 1999).

The first question here that needs to be addressed is, why go beyond these types of co-management situations? To answer, the challenges related to natural resource management (the category environmental management usually fits under) are social and institutional in nature (McConney, 2007:122). Natural resource management in general has been criticized as being too centralized, non-transparent and not supportive of community and stakeholder participation which is required to address the full scope of stewardship issues, particularly in resource-based Communities, as is the case with many Canadian Communities (Colfer, 2005).

Co-management situations between the Government of Canada and Aboriginal Communities are abundant in Canada, but as discussed above, can be problematic. To illustrate, I have chosen the following example: Spak elaborates on this issue through a case study evaluation of a wildlife and resource co-management board in Canada (Spak, 1995). According to Spak, primary issues in blending western and traditional approaches come to light when trying to work in an area of ecological protection; the largest gap that co-management boards face is ignoring both their bicultural and bilingual nature. Co-management boards and management partnerships will be ineffectual if they remain unilingual with solely western administrative structures. Spak's research ties directly into the overarching theme of environmental protection and broader land management issues and their link to Indigenous knowledge. Within her piece she refers to the 'slow awakening of the scientific community to the importance of traditional environmental knowledge' and how, according to this author, putting this into practice is very difficult to achieve. We are reminded here of the key importance of breaking through the communication barrier from the get go through avoiding solely unilingual and western based systems when setting up co-management boards or other related institutions (or policy which is to be applied on a national level) (Spak, 1995).

Adaptive co-management has received attention in the last several years and stems from a need to go beyond traditional approaches to resource and environmental management. Adaptive co-management is a blend of both co-management and adaptive management theories and practice, a unique forum that after consideration

seems potentially flexible enough to embrace all the complexities that an analysis of Indigenous environmental management conjure. Although there has been no universal agreement on a formalised definition for adaptive co-management, and there are various, yet mutually supportive definitions that have been offered, for the purposes of this thesis project the general definition derived from Olsson et al. (2004) will be applied to provide a basic platform of understanding and a launching point for further analysis throughout this thesis research: '...a flexible system of management that operates across multiple levels and with a range of local and non-local organizations. Key features include a focus on learning by doing, integrations of different knowledge systems, collaboration and power sharing among community, regional, and national levels, and management flexibility'. Combined, these features provide an evolved approach that is suited to meet the increasing challenges of a tightly connected world and the expectations of governance innovation in an adaptive age (Armitage et al., 2007:14). Adaptive co-management is also a relative term, versus an all or nothing conceptual approach, as is the case with other theoretical frameworks (for example, co-management). In this sense there is no end point to achieve or one specific academic lens to apply.

In as much as ecological systems are non-linear, the rationale for considering a more evolved approach to set the foundation for evolved governance frameworks, such as adaptive co-management, is in striving to find an approach that can enhance the resilience and sustainability of ecosystems (Charles, 2007). To demonstrate, consider the framework for a new Indigenous Watershed Management Area in Tla-O-Qui-Aht,

British Columbia, the characteristics of which include planning and management of resources within a broad time perspective, with respect to past, present and future generations and relations. Concepts of justice are extended from the social realm to the environment and the management framework is inclusive of all individuals and groups (both human and non-human) with vested interests in the given watershed (Enns, 2008).

Adaptive co-management builds on co-management (which is primarily concerned with involving stakeholders in decision making) and incorporates a focus on learning by doing, adaptation and local empowerment to address uncertainty (Armitage et al., 2007; Olsson et al., 2004). Armitage (2007:78) explains that focusing on overly structuralist, political economy interpretations of co-management risk diminishing the importance of the role of individual leaders, informal relationships and actor agency in providing the opportunity for growth and change. In terms of resource management, the implications of recent Supreme Court decisions have left many resource groups uneasy. For example, government agencies, mining and forest product corporations (those that often have a vested interest in traditionally Aboriginal territories in Canada) sometimes have difficulty in establishing an effective working relationship with Indigenous groups that acknowledges shifts in power relationships (ICE, 2008).

While the specific ingredients necessary for successful management or governance over resources as they pertain to Aboriginal lands will be discussed in further detail later on, it is necessary for the time being to simply submit that the newer relationships and

agreements are beginning to evolve between governments, organizations and Communities which have the power to significantly alter the current state of environmental management on Indigenous lands (Berkes et al., 2001). ICE calls for support for the 'complex advisory, review and decision-making system that is emerging out of a previous external based, top-down, hierarchical, autocratic, and bureaucratic system' (ICE, 2008). Does it potentially follow then, that adaptive co-management might offer an option for a possible solution? Does it fit the premise of this newer 'complex decision making approach'? Some preliminary studies indicate that this may be so. Peterson (2007) for example, using a somewhat similar process as applied in this thesis research (local scenario planning) asserts that components of adaptive co-management foster connections and dialogue amongst separate groups, empowering them to move forward in managing their social/ecological systems.

What is also required is an ability to build balanced power-sharing opportunities, equal representation, capacity and institutional development and an increased emphasis on learning. With specific regards to Indigenous Communities, consideration of the importance of power sharing amongst different levels of government (specifically between federal, provincial and band council levels) has been established as crucial in attempts to implement evolved states of governance (including environmental governance) (Armitage 2007: 77; Brown, 1999; Brunner et al., 2005; Plummer et al., 2007). Not that this type of evolution can be easily accomplished, however, it is only part of the overall process. As neatly stated by Armitage (2007: 78) "Opportunities to jointly adapt and refine management strategies while overcoming historically

hierarchical relationships among key actors (local, regional, national) will involve significant effort".

Adaptive co-management is about pursuing sustainable trajectories and fostering collective action, which ties in neatly with an Indigenous environmental stewardship approach, i.e. an approach that seeks to establish healthy management via a blend of social, ecological, cultural and biological features through a community-tailored process of learning and collective decision making. Furthermore, adaptive co-management provides a space for the inclusion of traditional approaches and perspectives (Berkes, 2007); for instance, current government agencies are responsible for all risk assessments which are used as a foundation for decision-making and management of risk. These studies are often conducted using healthy groups of adult humans. A more traditional approach would, however, incorporate cultural value systems, which often mandate special protections and considerations for the most vulnerable portions of an eco-system, including the elderly and future generations of unborn children. Arquette emphasize the need to be inclusive of people not represented in health studies: "It is those persons in the 95th percentile in exposure scenarios who are the very people that First Nations decision makers are mandated to protect" (Arquette et al., 2002: 62). To illustrate a successful example of the integration and application of environmental management and Indigenous culture that fits within the adaptive co-management framework we may consider the work of Yuksel (1998). His work addresses the subject of tropical rainforest deforestation in Indonesia and the role that Indigenous strategies play therein. In this particular instance local Indigenous

farmers successfully addressed the effects of environmental degradation through a different and evolved type of environmental management; backed by incentives, local institutions were altered to become a blend of politics, economics, religion and customary law resulting in the successful application of Indigenous agroforestry techniques. Yuksel's piece also lends support to the argument that addressing environmental issues at the local, versus national, scale may be best in certain circumstances, albeit with support from outside governing sources.

The following chapter presents a compilation of testimony and strategic plans of action derived in three separate Aboriginal community-based planning conferences. It will provide us with the necessary data to allow us to apply the theoretical considerations presented here to a practical scenario.

Chapter 4: Findings

Having completed a review of related literature which is specific to the area of Indigenous environmental governance in Chapter 3, this Chapter draws a visual picture of the findings for each of the three community-based planning conferences documented in the ICE study and provides an individual analysis thereof. Section 4.1 provides a general introduction to the findings of this thesis project. Section 4.2 presents group answers to the community assessment questionnaires. Section 4.3 analyzes the assessment questionnaires via the use of frequency distributions, and an overall distribution graph, which shows the similarities and differences that can be drawn between all three conference results. Section 4.4 provides an analysis and

comparison of the draft strategies on the environment that were generated by each of the three groups of participants.

4.1 Introduction

From this section onwards, having defined and defended my chosen conceptual approach and objectives, I focus on telling the story of the community-based planning process as it has so far evolved for three Aboriginal linguistic groups in Ontario, Canada. The data sets presented in this section were generated during the ICE study (three separate community-based planning conferences). This data provides us with a window to view the very preliminary stages of the community-based planning process (the second stage is outlined in the following section) for community mobilization and taking steps to move forward in terms of addressing environmental concerns in several Aboriginal areas. This data does not allow us to go beyond this planning and predictive stage and draw any type of conclusive results around what the outcomes of the planning process (i.e. implementation phase) will be. They do however provide us with enough information for a dialogue and comparative analysis with other initiatives which have been implemented successfully (or unsuccessfully as the case may be) in similar contexts.

Three environmental Indigenous conferences were held in 2007 and 2008: the Haudenosaunee Environmental Gathering, the OjiCree Environmental Gathering, and the Aanishnaabek and Cree Environmental Gathering (see Chapter 2 for specific details on these conferences). In each conference, participants were asked to respond, as a

group, to the following community assessment question: "How has pollution and the environment impacted your exclusive use and enjoyment of your territory, cultural activities, hunting, fishing, collecting of medicines and traditional knowledge"? As a means to facilitate generating a response, the results from this question were broken down (during the exercise) into four sub-answer areas. This was done in order to facilitate the collective process of issue identification (ICE, 2008).

All three groups completed the group assessment detailed above and then went on to successfully complete the development of group strategies exercise. Therefore, any implications drawn from the results must combine an analysis of both these items. We must also consider that some groups chose to focus more attention on either the first exercise, answering the assessment questionnaire, or the second exercise, the development of the environmental strategy. Furthermore, the use of frequency charts to display themes or prominent trends in the data is by no means intended to imply that some issues are more relevant than others, or to imply that the success of this thesis research is based on emerging trends in the data. One could argue in fact that the success of this research is more directly related to whether or not the overall process of holding the conference in general was useful in enabling the Communities to partake in stage one of the environmental management process (i.e. 'planning'). Emerging trends or common themes in the data are emphasized simply to provide a basis for future reflection by policy developers as they may provide a focal point for more detailed needs analysis.

4.2 Community Assessment Results

The Haudenosaunee Environmental Gathering took place from Tuesday, November 20th to Thursday November 22nd, 2007 on Wahta Mohawk Territory in Muskoka, Ontario. A diverse group of participants gathered together for this interactive conference. Please see Section 2.4 of this thesis project for details on participants.

The OjiCree Environmental Gathering took place on February 12th and 13th, 2008 in Thunder Bay, Ontario. A diverse group of participants gathered together for this interactive conference. Please see Section 2.4 of this thesis project for details on participants.

The Aanishnaabek and Cree Environmental Gathering took place on March 18th and 19th, 2008, in Sault Ste. Marie, Ontario. A diverse group of participants gathered together for this interactive conference. Please see Section 2.4 of this thesis project for details on participants.

At all three separate conferences (Haudenosaunee Communities, OjiCree Communities, and Aanishnaabek and Cree Communities) participants were given a questionnaire and asked to collectively answer the following overarching question:

How has pollution and the environment impacted your exclusive use and enjoyment of your territory, cultural activities, hunting, fishing, collecting of medicines, and traditional knowledge?

In order to facilitate the collective process of issue identification the groups of participants were subsequently asked to place the answers to the overarching question under the following 4 sub-headings: 1. Identified Territorial Concerns; 2. Identified Impacts on Hunting and Fishing; 3. Identified Cultural Impacts; and, 4. Identified Impacts on Traditional Knowledge.

In total, 30 responses were generated by the Haudenosaunee group, 24 responses were generated by the OjiCree and 11 responses were generated by the Aanishnaabek and Cree. Appendix 2 provides an overview of the details, including all specific responses generated during each conference.

4.2.1 Conference 1 –Haudenosaunee Communities

The 30 responses generated by the Haudenosaunee Conference participants were already broken down, by the conference participants themselves, into four sub-categories in order to facilitate the collective process of issue identification: Identified Territorial Concerns, Identified Impacts on Hunting and Fishing, Identified Cultural Impacts and Identified Impacts on Traditional Knowledge. Note that within the first category are 11 responses, within the second there are 5, within the third there are 6 and within the fourth there are 8. At first glance, this might imply that the first category of responses, being Territorial Concerns, was of primary concern to this group. However, various additional variables would have to be considered in order for this last statement to be defendable, for example, the substance of the answers themselves. Some answers

are specific to one technical issue, (i.e. salt on the roads) while others are broader and encompass various concerns rolled into one response (i.e. pollution from economic development). Furthermore, some responses could also fit into more than one of the other three categories of responses, (ex. pollution for economic development could also theoretically be classified under 'Identified Impacts to Hunting and Fishing').

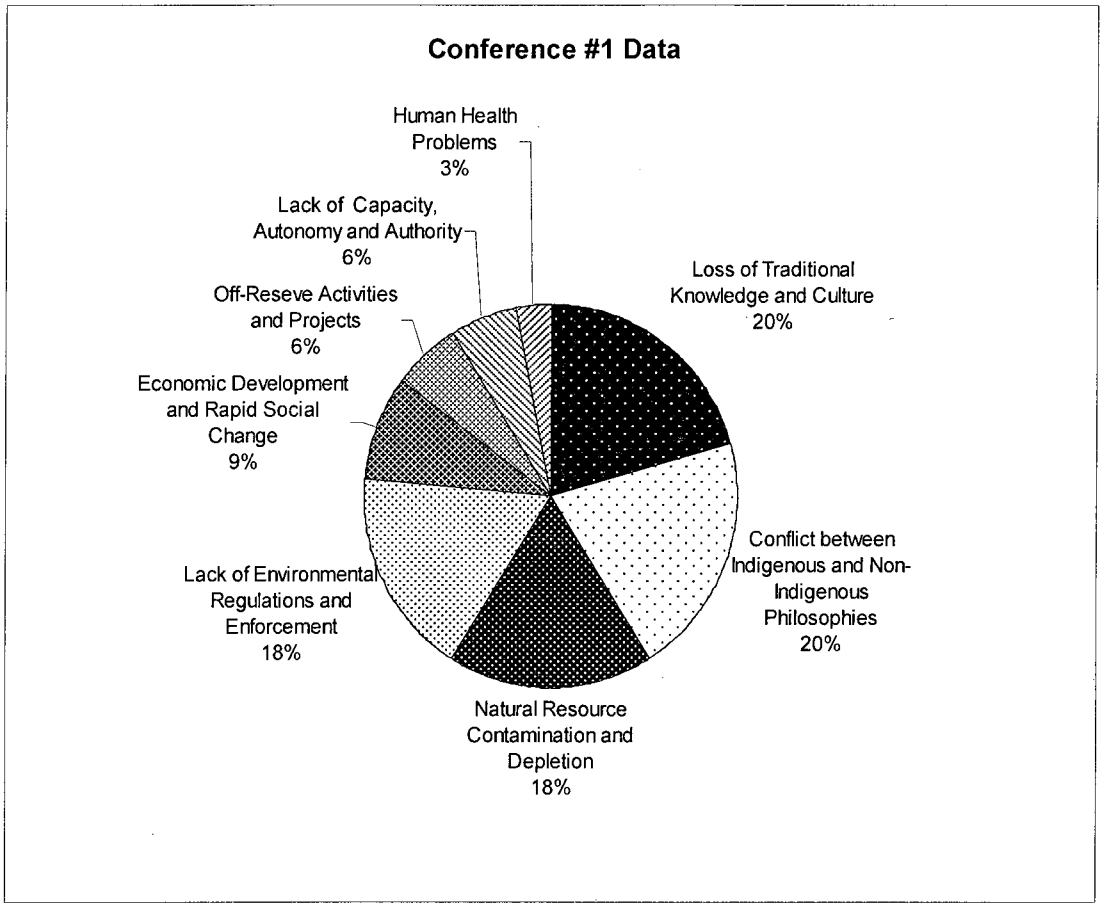
Because of the possibility for broad interpretation discussed in the paragraph above as well as an obvious repetition of various themes in the data, during this thesis research the answers were further broken down into 8 categories. The choice of '8' as a selection total was due to the need to balance providing as accurate portrait of participant concerns as possible, while not providing so many variables that the overall message is lost in the details. Also, after a detailed consideration of the responses from all three remaining conference results, it was decided that this approach (placing the responses into one the following 8 categories) would yield the most effective means for comparison, in that a repetitive, consistent the pattern of the 8 broad categorical themes was reflected in all three data sets.

Please note, as discussed in the limitations section of this thesis project, when interpreting qualitative data care must be taken to eliminate personal bias as much as possible (Blaxter et al., 2001). The 8 categories that were chosen for data classification are presented as simple suggestions for encouraging further discussions and as a possible starting point for other Communities interested in completing similar exercises. These categories are by no means exhaustive nor are they the only suitable

categories that might be used for data classification and analysis. There are suitable alternative approaches to classifying this data which could be explored in future research. The chosen 8 broad categories are as follows:

1. **Natural Resource Contamination and Depletion**
2. **Economic Development and rapid social change (including population growth)**
3. **Off-reserve activities and projects**
4. **Lack of environmental regulations and enforcement**
5. **Human health problems**
6. **Loss of traditional knowledge and culture**
7. **Conflict between Indigenous and non-Indigenous philosophies**
8. **Lack of capacity, autonomy and authority**

The following frequency graph illustrates these 8 themes as represented by the data generated from the first needs assessment/questionnaire exercise in Conference 1.



Circle Graph 1: Conference #1 Data

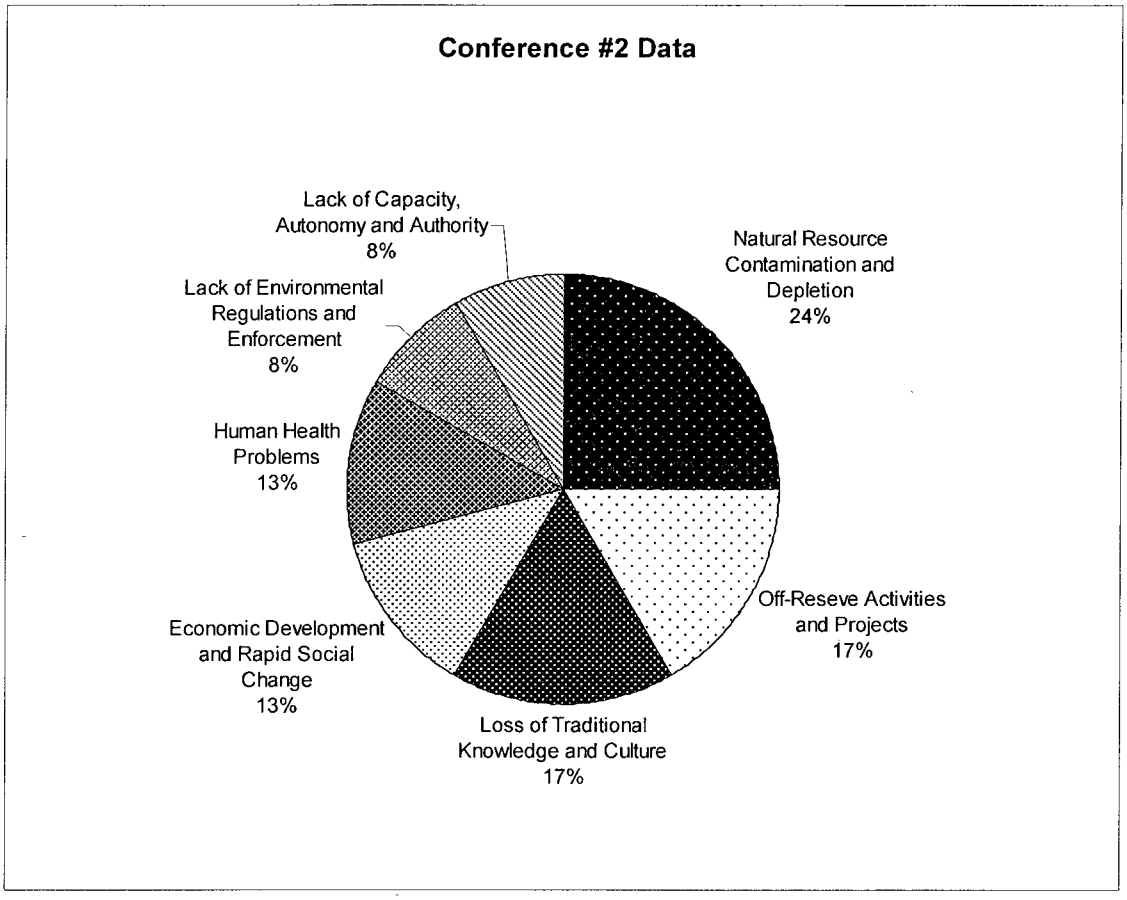
In the visual demonstration immediately preceding, the specific incidence of the 8 themes from each conference has been divided into shaded portions which correspond to the frequency, or the number of times that the issues identified were included by participants in the assessment responses. The space between the bars indicates that the data is not on an interval or ratio scale. The choice of '8' as a selection total was based on the rather obvious trend of recurring themes in the ICE Study data, and the need to balance providing an accurate as possible portrait of participant concerns, with not providing so many variables that the overall message is lost in the details. The choice of a circular graph is purposely made to provide a visualization option that best

corresponds to an Aboriginal perspective and an ecological lens. This is also to emphasis the equal importance of each individual issue raised, regardless of what percentage of the whole it holds.

In considering Circle graph 1, it comes immediately to our attention that the responses most frequently generated may be placed under the followings themes: Loss of traditional knowledge and culture and conflict between Indigenous and non-Indigenous philosophies, followed by natural resource contamination and depletion and lack of environmental regulations and enforcement. From this we may decipher that generally speaking (a quick reminder here that the groups answered the questionnaire collectively) this group answered the overarching assessment question in the following way: Biophysical depletions and contamination and lacking legal infrastructure is of key importance but must be balanced with emphasis on socio-cultural needs and traditional values. It might then follow that any strategies for environmental management would place these items as priority matters.

4.2.2 Conference 2 –OjiCree Communities

The 24 responses from the OjiCree Conference were handled following the same procedures outlined above in section 4.2.1. The following frequency graph illustrates the 8 themes as represented by the data generated during the second needs assessment/questionnaire exercise in Conference 2.



Circle Graph 2: Conference #2 Data

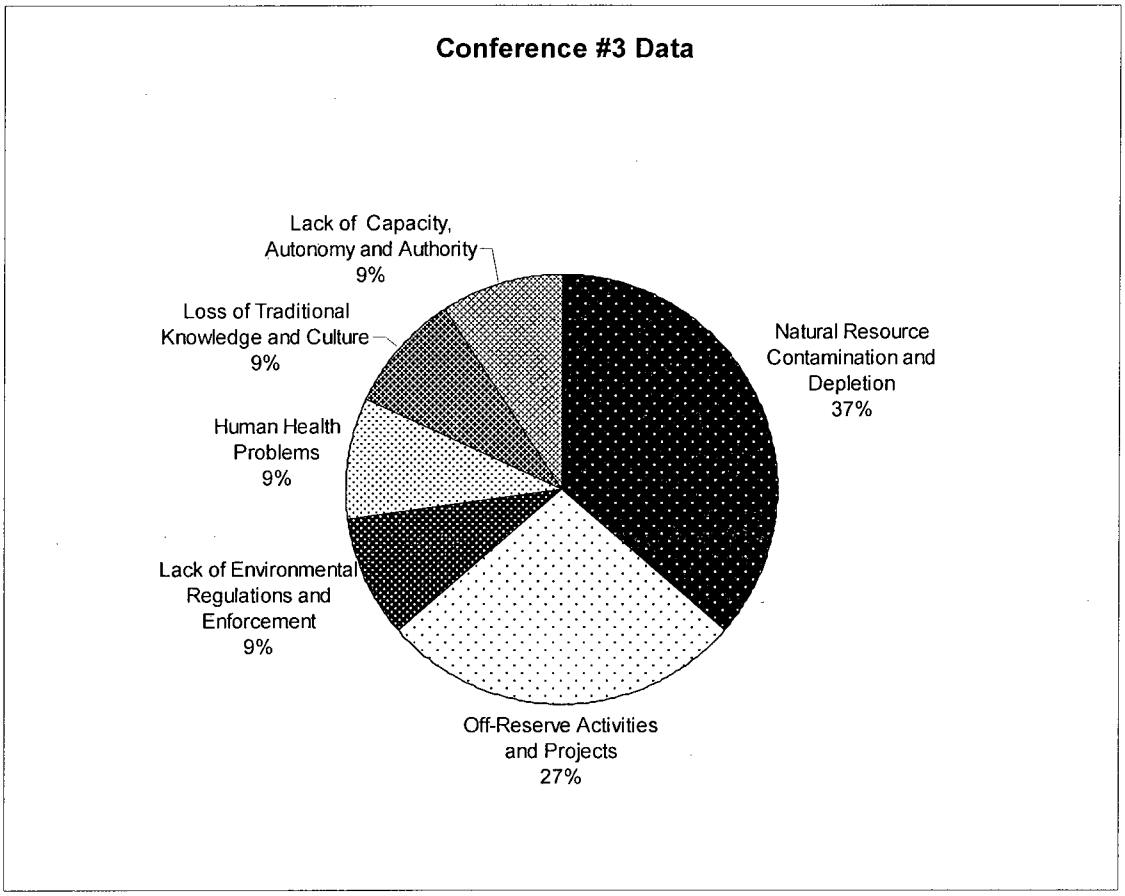
In the visual demonstration immediately preceding, the specific incidence of the 8 themes from each conference has been highlighted along the outside circular axis. The size of the shaded portion of each section corresponds to the frequency, or the number of times that the specific issues were identified by participants out of the total responses provided. The choice of '8' as a selection total was based on the rather obvious trend of recurring themes in the ICE Study data, and the need to balance providing an as accurate portrait of participant concerns as possible, with not providing so many variables that the overall message is lost in the details. The choice of a circular graph is purposely made to provide a visualization option that best corresponds to an Aboriginal

perspective and an ecological lens. This is also to emphasis the equal importance of each individual issue raised, regardless of what percentage of the whole it holds.

If we consider this graph, it becomes apparent that the responses most frequently generated may be placed under the following theme: natural resource contamination and depletion. This is followed by loss of traditional knowledge and culture issues relating to off-reserve projects. From this we may decipher that generally speaking (a quick reminder here that the groups answered the questionnaire collectively) this group answered the overarching assessment question in the following way: Biophysical depletions and contamination are a key concern. This is followed by a concern regarding the encroachment of off-reserve affairs onto reserve boundaries and the negative effects associated with this, and the resulting impact that both of these issues have on the traditional knowledge and culture base. It would follow that any strategies for environmental management would place these items as a priority matters.

4.2.3 Conference 3 –Aanishnaabek and Cree Communities

The 11 responses from Aanishnaabek and Cree Communities Conference were handled following the same procedures outlined above in section 4.2.1. The following frequency graph illustrates the 8 themes as represented by the data generated during the third needs assessment/questionnaire exercise in Conference 3.



Circle Graph 3: Conference #3 Data

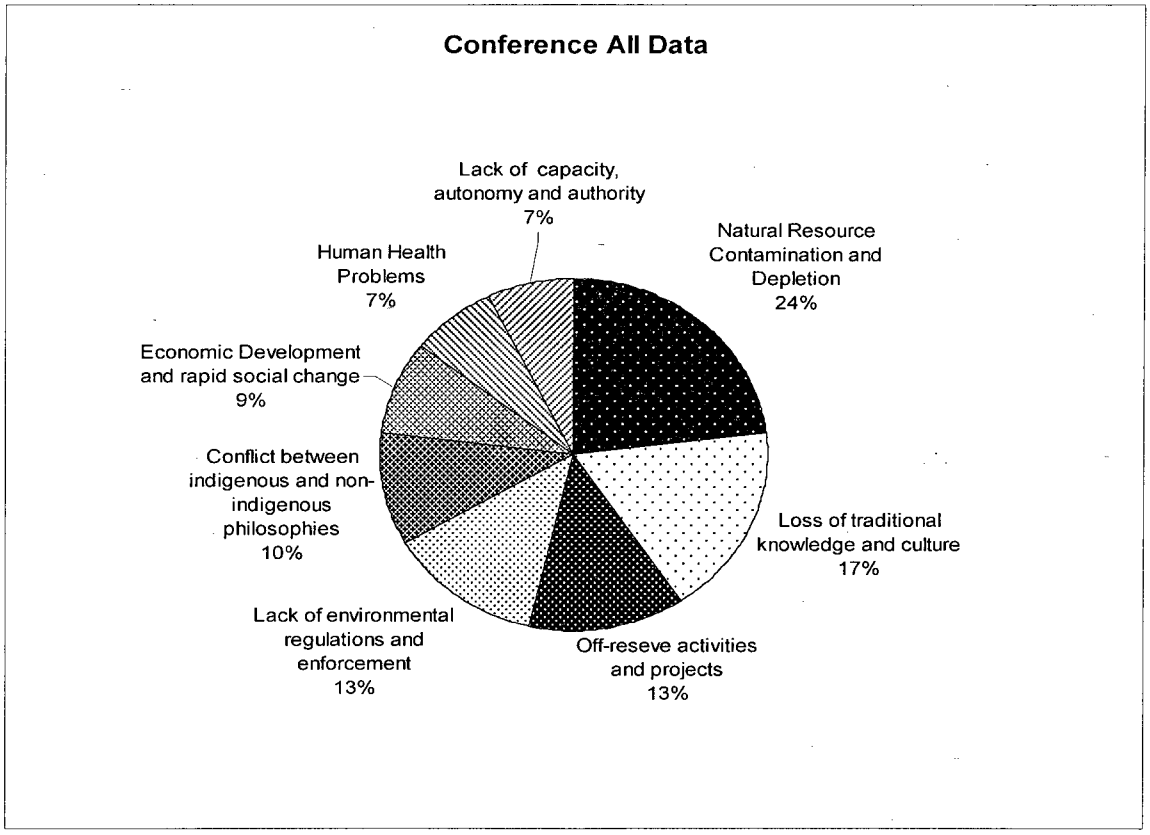
In the visual demonstration immediately preceding the specific incidence of the 8 themes from each conference has been highlighted along the outside circular axis. The size of the shaded portion of each section corresponds to the frequency, or the number of times that the specific issues were identified by participants out of the total responses provided. The choice of '8' as a selection total was based on the rather obvious trend of recurring themes in the ICE Study data, and the need to balance providing an as accurate portrait of participant concerns as possible, with not providing so many variables that the overall message is lost in the details. The choice of a circular graph is purposely made to provide a visualization option that best corresponds to an Aboriginal

perspective and an ecological lends. This is also to emphasis the equal importance of each individual issue raised, regardless of what percentage of the whole it holds.

An examination of this graph draws attention to the fact that the responses most frequently generated may be placed overwhelmingly under the following themes: natural resource contamination and depletion and off-reserve projects. From this we may decipher that generally speaking (a quick reminder here that the groups answered the questionnaire collectively) this group answered the overarching assessment question in the following way: As was the case with previous groups, biophysical depletions and contamination are a key concern as are off-reserve activities which transcend onto Community lands. This is followed by a concern regarding the encroachment of off-reserve affairs onto Community territory. This large gap between these two results (37% and 27% respectively) compared to all other issues which individually take up 9% of the total is interesting to note. At face value we might infer that these two issues are more seriously problematic for this particular group. Another possibility for this discrepancy however could be that this group provided fewer answers (only 11) compared to both other groups. Furthermore, a review of the Draft Community Strategy (see s.4.5 below) for this group revealed that more focus and work may have gone into the development of that tool (exercise #2) versus the identification of issues (exercise #1).

4.2.4 Cumulative Results –All 3 Conferences combined

All 65 responses from all three Conferences are considered below and were handled following the same procedures outlined above in section 4.4.1. The following frequency graph illustrates the 8 themes as represented by the data generated collectively during all three needs assessment/questionnaire exercises at all three conferences.



Circle Graph 4: Conference All Data

In the visual demonstration immediately preceding, the frequency graph representing the specific incidence of the 8 themes from each conference has been highlighted along the outside circular axis. The size of the shaded portion of each section corresponds to

the frequency, or the number of times that the specific issues were identified by participants out of the total responses provided. The choice of '8' as a selection total was once again based on the rather obvious trend of recurring themes in the ICE Study data, and the need to balance providing an as accurate portrait of participant concerns as possible, with not providing so many variables that the overall message is lost in the details.

If we consider this graph, the issues or themes that are visually most apparent include natural resource contamination and depletion (24%) and loss of traditional knowledge and culture (17%). This is followed by lack of environmental regulations and enforcement (13%) and issues relating to off-reserve projects and activities (13%). From this we may decipher that generally speaking the three groups collectively answered the overarching assessment question in the following way: Biophysical and natural resource contamination and depletion are of key concern. This issue in fact consumes the highest proportion of results in three out of four instances. Second, loss of traditional knowledge and culture is an issue rated most frequently from a collective perspective (individually ranking in first place, second and then third in each of the three respective conference data sets). At face value we might infer that these two broad issues are of serious importance and are pressing issues that these Communities would like to see addressed. This is stated with consideration given to the fact that some groups provided more answers in total and put more emphasis on the questionnaire/assessment exercise than others.

The items tied for third place are somewhat related, being problems related to lack of regulatory infrastructure and activities that occur off-reserve but have serious on-reserve impacts. They are somewhat related in that an effective legal regulatory framework is one option for addressing, among many other things, issues such as these that are trans-boundary. For example establishing by-laws which meet the standards of surrounding Municipalities and work with such regions to ensure that the by-laws are recognized.

Most notably, the results of the conferences in general imply a marriage between environmental degradation and loss of traditional means of land management approaches, traditional culture and traditional knowledge. This last item is key in pointing out imperative differences between Aboriginal and non-Aboriginal Communities and is in line with previous studies on this area (Hornborg, 1998; Smith, 1999). Upon reflection the results seem to possibly indicate a relationship between sound environmental stewardship, and the degree of consideration given to social, economical and cultural issues that are directly related to the case in question.

In summary, there are several environmental concerns across the board (listed above) that all of these Ontario Communities share. There also appears to be key linkages between the health of the environment and the social, physical, cultural and economic health of people in the Communities. It would seem satisfactory to suggest that for these Communities addressing environmental degradation implies much, much more than focusing on environmental contamination alone.

4.3 Draft Community Strategies on Pollution and the Environment

This portion of the thesis project is the second of two sections which draw a picture of the ICE study findings and provides an analysis thereof. It also allows us to explore the relationship between the ICE case study under investigation and previously existing case studies. In each ICE conference, participants were asked to respond, as a group, to the following community assessment question: "How has pollution and the environment impacted your exclusive use and enjoyment of your territory, cultural activities, hunting, fishing, collecting of medicines and traditional knowledge"? The findings stemming from this exercise are detailed in the first half of section 4, immediately preceding this section. The participants were then subsequently required to participate in a second exercise in which they, drawing on the results from the first exercise, collectively generated draft environmental strategies for addressing environmental concerns at the community level. The three individual draft strategies have been reviewed by the participants and the facilitators of the conferences. They are presented in Appendix 3, in their original format.

4.3.1. Analysis of Draft Community Strategies on Pollution and the Environment

The strategies presented in Appendix 3 represent the second portion of the community-based planning process, which involved taking the issues identified in the questionnaire exercise and developing a plan of action for how to possibly address them. These data sets have not been manipulated through statistical or other measures as was the case with the questionnaire results. The main purpose for this is to present an accurate and

credible account of what each Community determined as a course of action. After consultation with conference organizers, it was deemed unnecessary to risk changing the meanings and objectives that are laid out in these strategies. They speak for themselves and are after all, in their current formats, part of the policy development process for the affected Communities. That being said, it is still very possible to consider, analyse and critique their contents.

An appropriate place to begin is a critical review of the strategies. These data sets consist of three community-based planning strategies and action plans for addressing environmental concerns on Indigenous lands. This data allows us to witness the second stage of the planning process (the first having been outlined in the previous section) for community mobilization and taking steps to move forward in terms of addressing environmental concerns in several Communities. This data does not allow us to go beyond the planning and predictive stage and draw any type of conclusive results around what the outcomes of the planning process (i.e. implementation phase) will be. They do however provide us with enough information for a comparative analysis with other initiatives which have been implemented successfully in very similar contexts. In this regard, throughout this analysis section, comparison to other case studies, where appropriate, may be useful in situating the reader and enhancing the relevance of the data results. In this light, reference is being made to a 2005 research initiative undertaken by the Canadian government entitled `Sharing the Story`, which documents best-practice examples of successful environmentally sustainable Aboriginal initiatives across the country. Sharing the Story contains 15 detailed empirical studies interlaced

with commentary from the leaders involved in implementing the projects, providing a complementary contrast to documented commentary encompassed in the data at hand.

Each of the three community-based planning strategies that were generated through the ICE study environmental conference process elaborate on steps to take to address everything from environmental assessment to possible funding sources. The first strategy developed by the Haudenosaunee Communities is perhaps the most detailed and follows a progression of steps from education and planning mechanisms to addressing broader environmental concerns to securing funding and implementation mechanisms. The second strategy developed by the OjiCree Communities focuses a great deal on working collectively as a Community and developing partnerships and networks with non-community entities, and the need to ensure an inclusive, grassroots approach to environmental management. The third strategy developed by the Aanishnaabek and Cree Communities seems to focus more on regulatory issues and obligations and the protection of rights, in addition to the development of partnerships and specific means to address and reduce contamination on Community lands.

Each ICE study strategy is unique in its tone and the context it sets, however there are some obvious inter-linkages and similarities worth discussing. To begin with, within each document the first item listed is the requirement to have Community buy-in and address Community environmental education. This is very telling of the need to promote and increase the general level of environmental awareness. Secondly, all three strategies refer to the specific need for complete assessments and inventories of

environmental issues to be completed within the Community territory. This would provide necessary information about the actual status of the lands and would also theoretically provide an opportunity for local people to give input while the assessments are carried out. The importance placed on both of these inter-linkages (the need for both Community education and baseline information) is reflected in Sharing the Story, through the experiences of the Unamaki Institute (DIAND, 2005). The Unamaki Institute is an institution established jointly through the efforts of all five First Nation Bands on Cape Breton Island, Nova Scotia to manage and protect the natural resources and watershed in the Unama'ki District. The Institute has overseen detailed assessments of the lands being governed, including completion of a GIS mapping project identifying Aquatic and land features of the region, as well as traditional knowledge, which is then applied and aids in their development of project proposals. The Institute also actively supports Community awareness and education through providing scholarships and demonstrating to supporters how their input directly effects the management of resources on their traditional lands (DIAND, 2005:55-56).

A third important theme that is apparent in each ICE study strategy is the requirement for funding and secured resources. Secured resources and capacity are needed for environmental staff, scientific processes, education programs, assessments, partnership building, monitoring and enforcement. This includes capacity to access funding that is available and the ability to navigate through sometimes highly beaurocratic and technical proposal processes. Sharing the Story documents the struggles of Brokenhead Ojibway Nation in this regard. This Community has plans to expand their sustainable

initiative beyond its current scope (allowing access to a historic facility and nature trails year round instead of only during summer months), however government funding opportunities often lapse before this Community is appropriately prepared to access them. In fact, this common challenge is also reflected across the board amongst the 15 sustainable initiatives documented in Sharing the Story, and is included as one of the 5 common criteria for success (DIAND, 2005).

A Fourth obvious trend seen throughout the data provided by the ICE study strategies is the requirement for a regulatory mechanism to be in place to discourage harmful environmental practices, on and off-reserve. Possible tools for this include the creation of by-laws, Band Council Resolutions, internal policies or incorporating provincial or municipal laws by reference. Compliance and enforcement are often of the utmost importance yet overlooked areas when it comes to community planning in general and many Communities across the country face implementation challenges when it comes to lacking this requirement. For instance, the Unamaki Institute in Cape Breton has trained Native Guardians to oversee stewardship of resources, however, they have no powers to enforce the resource management plan which can negatively impact the robustness of the stewardship results (DIAND, 2005).

The fourth trend is directly linked to the fifth interlinkage between the strategies, which is self-regulation and building community capacity. In fact, both strategies from Conferences 1 and 2 have nearly identical strategic components that lay out a specific suggestion to address this. Both strategies explicitly suggest the creation of an

appropriate governing body for overseeing environmental responsibilities, the use of independent, unbiased resource personnel and the use of an institute that is within the Community, but independent from Community leadership (Graham, 2007:4). This institute should receive independent funding and rely on the traditional model for functional purposes. The need for detachment from Community leadership seems to reflect the political ramifications and/or dilemmas that can be inherent when regulation is not kept at a minimal arms length from political leadership. The five Communities on Cape Breton Island that have supported the Unamaki Institute can attest to the successful impact a focused arms-length governing body can have, despite dilemmas surrounding enforcement. Their use of traditional and modern technologies, inclusion of Community and elder input and focus on importance for traditional knowledge transfer have allowed them to successfully implement a natural resource plan and to implement restorative measures through a holistic, culturally-sensitive approach which fosters self-governance (DIAND, 2005).

Finally, all three ICE study strategies refer to the need for creating and maintaining partnerships and networks. This is both within and external to the Community, such as with non-governmental organizations. This last point seen in conjunction with the themes previously mentioned is possibly telling of a desire to move away from one main source of funding for environmental issues (primarily the federal government). It also reflects a desire to become empowered at the grassroots level, to reach out as equals in partnership with other entities and to have ownership of their dilemmas. Partnerships and creation of networks was included with the 'Sharing the Story'

initiative as one the five main criteria for success in implementing sustainable projects, as nearly all of the fifteen initiatives examined involve some sort of co-management agreement, ranging from extensive collaboration and support (Pikuni First Nation Weather Dancer 1, co-created with EPCOR, an Edmonton-based utility company that provided finances for the megawatt wind power project and access to a customer base) to funding provided by one or two government partners (Kawactoose First Nation TLE Land Management Office, Osoyoos First Nation Inkameep Vineyards) (DIAND, 2005).

The ICE study strategies reflect only the preliminary stages of community planning and in this light they reflect an important and well-documented step forwards. This being said, a critique of the strategies might include the following comments: Many items need to be extensively flushed out before they might appear to be truly plausible in the practical sense. For example, while the mechanism for enforcement was described, i.e. charging fines to industry for permits to access land (see Conference #3 Strategy), this Strategy did not go so far as to lay out ideas or steps for how this could actually work in reality or who would enforce this process. Furthermore, there are additional complexities to be addressed when relying on the by-law approach: While Aboriginal Canadians have the authority to create by-laws under the *Indian Act*, the possible subject matters are limited by the actual wording of the Act itself (for example, by-laws cannot cover matters outside the scope of sections 81, 83 and 85.1 of the *Indian Act)*.

Generally, the ICE study strategies appear to tell us that conference participants show an interest in environmental concerns, that this interest is notable and that they are

willing and able to come to the table, collectively, to develop an action plan for addressing this. This is telling of a certain degree of trust and respect that existed amongst participants, an important ingredient for satisfactory implementation (Armitage et al., 2007). Furthermore, the successful development of the draft environmental protection strategies across linguistic and geographical distances provides tentative baseline information for both the type of environmental issues faced by Ontario Communities in general, as well as a possible hierarchy of issues.

The ICE study strategies seem to be related in that they share common themes and trends, particularly in terms of the need for more education and awareness at the community level and the related issue of identifying, assessing and documenting the biophysical and social state of affairs in their respective Communities. There are however, also marked differences amongst them. While we are not given information that demonstrates the differences between Communities that were represented at the individual conferences, we can infer that the differences apply between the linguistic jurisdictions. Most notably, both the OjiCree Strategy and the Aanishnaabek Strategy emphasized and outlined steps for creating partnerships and networks that reach beyond the community level, such as engaging with non-governmental organizations, while the Haudenosaunee Strategy did not. Furthermore, the OjiCree strategy goes one step further and identifies as an important step the 'creation of an effective communication strategy within and between First Nation communities', an action item not captured in the other two strategies. This case for horizontal networking beyond traditional boundaries is interesting and shows promise, however we must remember that

strategies will be successful when tailored to the local level. For instance, an overall analysis of the case studies conducted previously on this matter under the Sharing the Story initiative suggest that success is not necessarily limited to the creation of partnerships beyond the community level (DIAND, 2005).

Given the non-homogeneity of groups and the obstacles they face, tailor-made approaches seem to be the most satisfactory answer. Interestingly, the results from the Haudenosaunee Conference as per the circle graph included in Chapter 4 illustrate the fact that differences between traditional and non-traditional philosophies is more prominent for this group of participants (rated as a highest issue) compared to the other two groups. This could explain, in part, why the Haudenosaunee strategy is slightly more inwardly focused than the other two strategies. This is perhaps illustrative of the fact that while Communities do share similar issues and trends, as seen in the data sets, there are important individualistic components and approaches that cannot be overlooked. The Sharing the Story initiative listed 'lack of community and individual support' as the most prominent barrier to success in implementing sustainable initiatives across the country. We are reminded here of the autonomy and individuality of each Canadian, and indeed each global, community. This fact is particularly important and has great impact when any local, national, territorial or international strategies are being developed.

A critical examination of the ICE study conference data further suggests that the strategies may require more work in order to receive buy-in at the community level and

to begin implementation and only time will tell if all or even parts of these strategies are implemented. These strategies, however, represent the accumulation of many hours of planning, coordination, discussion, problem solving, listening and sharing of information. They are a solid and necessary step forward in terms of working towards sound Indigenous environmental management and demonstrate the results of empowerment at the grassroots level.

Chapter 5: Discussion

Having provided a statistical analysis and detailed assessment of the data generated in each of the three conferences in Chapter 4, this chapter provides a discussion of the overall results and analysis of the data generated in this thesis project and the implications of this for future research efforts. The primary goal of this chapter is to consider the findings of the thesis research, what they demonstrate in terms of linkages to community-based environmental planning and what might be inferred from such linkages. A secondary objective is to consider the results in light of previously documented similar experiences and flesh out a cognitive framework within which to further analyse trends and themes.

It is important to mention once again at this juncture that the interpretation of thesis research findings is limited by the methods applied and the sample studied (Blaxter et al., 2001). For this reason, a small-scale approach to data analysis was applied (see Chapter 4). This was done to ensure that the data were manipulated as little as possible and are left to speak for themselves through minimizing interference by the researcher.

This was particularly necessary as one intention of this thesis project is to provide a case study for other Aboriginal Canadian groups and decision makers to refer to and/or use as an example in their endeavours surrounding community planning. As a researcher I am fully aware, however, that other approaches to analysis and resulting interpretations for the data received are plausible and that different groups may apply or analyse the data differently.

This thesis project fills, however partially, an important gap that exists with regards to governance. An ecosystem approach tells us that 'the environment' is land and natural resource-based. According to natural resource literature, there is a need for further research within resource management, particularly in regards to politics, political processes and power (Gunderson and Holling, 2002; McConney, 2007). This thesis project was furthermore undertaken in part as a response to calls for more case studies of social learning in environmental management and a need to document specific experiences (Plummer and FitzGibbon, 2007:57). Traditionally, the governance approach to environmental management in Aboriginal areas was similar to the majority of other types of `management` in western society, where decision making is a top-down, process with often little input from the local, community level. Unfortunately, this has not adequately addressed the issues that are present in these areas, nor is it necessarily leading to an increased sense of social justice or equality for their inhabitants (Smith, 1999). Aboriginal Peoples in Canada, and abroad, are entering into new territory as land management functions are devolved to them, however, Communities often lack experience and expertise to work with the government, and

similarly government agencies are sometimes not typically prepared for partnerships at the community level (Ahmed et. al., 1997; Berkes, 2007: 25). The intention here has been to provide some baseline information and examples that all partners can work with and apply in future planning initiatives.

As previously mentioned, the intention in undertaking this thesis research project was not to become caught up in the unsolvable debate of whether or not Aboriginal Communities are in fact more environmentally responsible than their non-Aboriginal counterparts, however it is crucial to be aware of representational politics as an important discourse area underlying environmental governance, including community-based planning. J. Barron has suggested that the political debates involving Aboriginal dilemmas be reframed to focus on the position of Aboriginal Communities with regards to particular subjects and their choice and ability to link their concerns to the concerns of other networks (Barron, 2000). From an environmental researcher's point of view, there is no `natural` marriage to be had between any Aboriginal Peoples and environmentalists' agendas and my support is not given on the basis of what Canadian Aboriginal peoples do or do not represent in cultural mythology (pristine quality of land, wild earth, innocence, sustainable use of natural resources, etc.). Fundamentally, this thesis project is about protecting the global environmental integrity of land and changing societies' practices, versus saving or fixing `the other`. In as far as the struggle of Canadian Aboriginal Communities for sovereignty and self-determination can be articulated to the overarching objectives of this research (protection of the land and waters), a strong partnership for joint support can be made. Notwithstanding

inherent cultural and political drivers, the focus here is on how to move forward in terms of environmental care and how best to empower people to make necessary governance changes in this regard.

As discussed in Chapter 3, key ingredients of effective environmental management systems include planning, development and implementation, reporting and monitoring, and finally, evaluation and improvement. This represents an ecocentric, holistic approach. Within such an approach the entire process continually repeats itself in an ongoing cyclical fashion, each component of the circle being equally important to all the others. This thesis research focused on the first steps of this cyclical process, which is planning, and begins with identification of issues and community consultation. The ICE study data provides us with a glimpse of collective community-based planning in action. As will be discussed in this section, the community-based planning process acts as a tool to facilitate inclusive environmental management or other types of governance discussions and process and empowers grass roots action. It also ensures a certain degree of ownership, which facilitates the implementation of community strategies, particularly given the fact that workshop participants can include a wide variety of participants.

I would remind the reader at this point that inclusive approaches to environmental management take time (Peterson, 2007:304). Although the community process described in this thesis remains in its beginning stages, it would seem that the findings

herein do indeed suggest that there exist linkages between community-based planning and fostering conditions for sound environmental management.

One of the first steps to achieving sound environmental management frameworks then is identification of issues which occurs in the planning phase. To achieve this step a community consultation process is most effective in ensuring that the issues are identified and reflect the needs of the residents and land owners (DIAND, 2007; ICE, 2009). Through the process of community-based planning in which Community members of all ages and skill level come together, basic issues that require attention were identified successfully in all three conferences (as verifiable through the answers to the community questionnaire and the draft environmental protection strategies that were completed). In short, this thesis project has documented a process which successfully provides a mechanism for the first stage of environmental management.

This first important step is paramount to laying a framework for results that is empowering to participants and in and of itself demonstrates a clear linkage between the community-based planning process (the holding and implementation of the conferences) and environmental management. The degree to which this linkage may be described as substantial or insubstantial may be considered through evaluating the following results: First, the number of attendees willing to participate in the conferences, second, the variety and scope of attendees across and within the various linguistic jurisdictions, third, the variety and scope of issues that emerged as a result of people coming together to collectively discuss and address the issues and fourth, the

development of three separate draft environmental protection frameworks which include steps for filling resource and capacity gaps.

The data presented in this thesis project suggest that the conferences provided an important opportunity for members of different Communities to network, share ideas and collectively problem solve and brainstorm. We may infer that elements of trust, respect and cooperation existed amongst the participants in order for them to jointly develop and agree upon environmental strategies and plans of action. This is particularly interesting in light of the fact that the issue of trust *amongst* participants involved in such initiatives is sometimes regarded as an important component and major challenge in implementing resource management partnerships at the community level (for example, resource users in McConney et. al's Caribbean study, 2007, had low levels of trust in their governments and amongst themselves). That participants in the Ontario workshops were from different Communities and worked together effectively is also possibly telling of the shared interests and concerns that Indigenous Ontario Communities, as a whole, face. This makes it easier to assume that, theoretically, the results could be used by other Communities or organizations interested in the process.

Trust must also extend beyond the relationship between participants and partnerships to the issue of knowledge itself. As noted by Armitage (2007:75): "...the lack of trust associated with traditional knowledge and the privileging of formal science can compromise effective partnership formation." As discussed in Chapter 3, the different philosophical perspectives and approaches of the participants in the ICE study and the

partners who offer funding to their programs are often at odds (Enns, 2008; Harrison, 2000; Smith, 1999; Yuksel, 1998). In 3 of 3 community strategies developed in the ICE study, protection and inclusion of traditional knowledge and culture was given a status of high importance. This can and should be taken as a direct indication to outside partners that this issue is deeply important, lasting, and that efforts for future cooperation can progress smoothly only if such perspectives and requirements are respected. Furthermore, the more that Aboriginal Peoples assert their rights and insist on cultural protection, the more power will be shifted to their hands (Hornborg, 1998; Smith, 1999).

The data presented in this thesis project also suggest that the conferences provided an important opportunity for the various participants to draw and witness various parallel themes and common issues which arose during the discussions. In this regard the conference results give us a possible hierarchy of issues in terms of immediate need or importance. This is not to suggest that any particular item is of more importance, which would be contrary to both an Indigenous and Ecological approach (Keith, 1994). Indeed, all items are actually inter-related (in that you cannot discuss or address one without the others) as well as community specific. This type of information is valuable for both planners at the community level as well as policy and decision makers at the funding level (the Governments of Canada and non-governmental organizations) who can rely on it as a starting point for evaluating the efficiency and effectiveness of supporting environmental initiatives and narrowing the scope of such decisions.

Although the details surrounding the implementation of environmental protection strategies are unique to each of the groups who participated in the ICE study, the issues raised are consistent with other Canadian Indigenous case studies that also face endogenous and exogenous forces (Armitage, 2007:75; Enns, 2008; Graham, 2003; Spak, 1995). In light of this, there seem to be casual connections and substantive similarities between the three sets of groups that were documented in the ICE study. Similarities can be seen in particular with regards to Community support and education, Community capacity and resources, Community monitoring and enforcement, creating and maintaining partnerships and networks and a focus on integrating traditional ecological knowledge and techniques. There are also connections between these three case studies and several that were previously documented as outlined in the Sharing the Story Project, suggesting potential opportunities to apply this community-based planning approach on different scales (for example, at the local, provincial or national levels). This further suggests that regardless of superficially distinct project or subject areas, forums and initiatives related to environmental protection on Aboriginal lands in Canada tend to be grounded in principles of sustainable development and Community involvement, and involve application of the traditional ecological model. These parallel themes, common issues and similarities amongst the current results and the results of previously documented case studied are discussed in the following paragraphs.

One important element that has become apparent through reviewing the results of this thesis project is the need for environmental legislative and regulatory frameworks. This

is supported by others who have completed research on governance in Indigenous Communities, such as the Centre for Indigenous Environmental Resources, who assert the following: "Since the creation and assertion of law is a function of governance, First Nation self-governance is about a Community being able to effectively assert control over its territory and involves the application of First Nation environmental and stewardship laws, stemming for natural principles and laws of the Creator "(CIER, 2008: 4). This ties to the argument made earlier in this thesis project that creating a framework for legally binding mechanisms and enforcement is a key obstacle that many Canadian Aboriginal Communities face.

Within a federation such as Canada where the state is in a position of fiduciary with regards to the Communities it must protect, support for Community involvement, Community control and Community capacity must be recognized at the national level, where many decisions affecting Indigenous lands are made and policies and laws are established. The development of specific recommendations or plans of action for successful initiatives that can be applied broadly to all Indigenous Communities is very challenging. Whether or not it is possible or practical to modify and influence the general approach to land management and environmental protection on Indigenous lands in Canada from the ground level upwards remains to be seen. To begin the process of considering such an important question a new discourse and dialogue must first gain momentum. A key objective of this thesis was to promote this emerging area of dialogue. The findings in this thesis project can thusly feed into future debates, research and discussions, in hopes that they may increase awareness for creating

Aboriginal-related policies that are driven from the community level. Although the ICE study at hand is in its beginning stages, the results of this thesis project may be seen to support an argument that other researchers have put forth: environmental management in Indigenous Communities is best approached in a fashion that is inclusive and puts Community members in control as much as possible (Armitage et al., 2007, Arquette et al., 2002).

Another ongoing theme that has emerged here which is reflected through nearly all the resulting data is the link between supporting the development of sound Indigenous environmental management and the journey of Indigenous groups towards self-governance. As previously discussed, there is evidence presented in this thesis project to support a link between sufficient self-governance and the ability to establish and enforce sound environmental management systems. While plans and strategies can be created, such as those developed by the participants in the ICE study, implementation of them cannot be accomplished without sufficient governance mechanisms to back up the planning process, such as resources to ensure the Community is educated and for the implementation of enforcement mechanisms.

The notion of the right to self-govern as imperative to the well-being of Indigenous Peoples and their lands and environments is widely recognized. The United Nations General Assembly recently adopted the United Nations Declaration on the Rights of Indigenous Peoples. This groundbreaking declaration includes the following under Article 4: *Indigenous peoples, in exercising their right to self-determination, have the*

right to self-government in matters relating to their internal and local affairs, as well as ways and means for financing their autonomous functions. Unfortunately, Canada is one of four nations that did not support the adoption of this resolution, stating in particular that it opposed Article 26 which reads: *Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired.* In response to this the National Chief of Canada's Assembly of First Nations publicly decried that Canada was going against a position it had purported to support for decades and that Canada's dissention to the non-binding declaration is "a stain on Canada's reputation internationally"(CBC, 2007). How this continues to publicly play out may possibly impact the implementation of the strategies developed in the ICE study.

Currently, environmental protection on Aboriginal lands is largely handled jointly by the Government of Canada and Aboriginal Communities and often funded on a project-by-project basis. On the negative side, this type of approach often does not allow for consistent, strategic and solid frameworks to be established. When Aboriginal Communities must constantly wonder and worry about where funding to address ongoing issues will come from a systemic approach to community planning is impeded. On the positive side, approaching issues on a project-by-project basis can allow specific initiatives to receive detailed attention and may offer a more comprehensive mechanism for monitoring the appropriateness of the use of funds. Evaluating this type of project-by-project approach in depth was beyond the scope of this thesis project. Suffice it to say that, there are both pros and cons (as is the case with any other governance

approach). Either way, Aboriginal Canadians seem to be ready for a renewed approach, one that is more empowering and allows them more control and authority over their lands and resources (DIAND, 2003).

Regarding the issue of formally enacted self-government of Aboriginal Canadians, Canada decided not to sign the recent *Declaration on the Rights of Indigenous Peoples.* Canada has however previously formally recognized and agreed on the importance of achieving recognition and implementation of Aboriginal governments through 'constitutionally consistent and principled approaches' when the 1994 Political Accord was signed. Furthermore in 2004, Canada formally renewed its commitment to the 1994 Accord, and promised to strengthen cooperation and consultation with its Aboriginal population and also its commitment to recognize and implement First Nation governments[6]. Every day more and more Aboriginal Communities are taking steps towards self-government, whether it be through mechanisms under formal legislation (FNLM), treaties or other formal self-governing arrangements.

Canada has also made significant attempts to support self-governance through attempting to work out self-government agreements on a large scale with its Aboriginal populations. For a detailed example we can look to the 2006 review of the British Columbia Treaty Process. After this lengthy negotiation process was completed, the

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[6] For further detail on this see *the Accord on Cooperative Policy Development between the Congress of Aboriginal Peoples and the Government of Canada, 2004* and *A First Nations – Federal Crown Political Accord on the Recognition and Implementation of First Nation Governments, 2004.*

Auditor General of Canada commented that it actually seemed to strain and not improve the relationship between the Government of Canada and its Indigenous populations (Graham, 2007). Substantial amounts of money were spent (over $425 million spent federally and nearly $300 million borrowed by First Nations), however no treaties (which would have included self-governing rights) were signed by the parties. Perhaps the approach that was applied and is still applied, which relies on lengthy and expensive negotiations, should be re-examined (Graham, 2007: 2). It has been suggested that what might work better is an approach which distributes power and strives for balanced and integrated governance systems. Graham has called for these types of improvements to the general way in which Canada does business with its Aboriginal Communities: "Indeed, these are likely the only approaches that will allow small communities already burdened with massive public sectors and significant capacity issues to make reasonable progress towards sound and sustainable governance" (2007:7). This last point stands as a key argument for both the initiation of this thesis project and the replication of its methodologies in the future.

As previously discussed, Canada and its Aboriginal Communities are in most instances in some form of co-management relationship. The process of environmental management on Aboriginal lands in Canada fluctuates broadly. It is very specific to each individual Community, and also depends on the province or territory in which a Community is situated, the level of self-administering capacity and political leadership, financial and social resources and environmental expertise. The Government of Canada can be held responsible for results of these efforts and for the lack of

remediation of environmental pollution (see Chapter 3: Policy Framework). There is usually a sharing of rights and responsibilities related to environmental management decisions, for example a committee which includes Aboriginal Community representatives acting as an advisor to a federal department, who is the main funding source of an environmental initiative (Burton, 2007:126).

As discussed in Chapter 3 of this thesis project, adaptive co-management literature and post-colonial literature seem to offer a more adequate conceptual space, compared to natural resource literature, wherein the complexities of environmental management and the holistic views of Aboriginal Canadians can be incorporated together (Armitage et al., 2007).

This thesis has considered the application of Indigenous environmental governance at the grassroots level by evaluating a particular case-study. I have effectively used descriptive research to portray the status of environmental management conditions in Aboriginal Communities through describing the community-based planning process, the results of which are arguably consistent with features and attributes of adaptive co-management and furthermore is representative of a unique governance scenario. A somewhat similar process was applied in Peterson's research, which describes how scenario planning can be used to build connections amongst separate groups and begin a dialogue around managing the social/ecological model (Peterson, 2007). The results of both research projects indicate that approaches that have attributes of adaptive co-management enhance opportunities for collaboration and making progress towards

sound environmental management. To support this argument further we will consider several common themes and trends that have been derived from the data in this thesis project and their linkages to several common attributes of adaptive co-management.

First, establishing a committed policy environment in which adaptive co-management may emerge is of great importance. For example, an important feature of this approach involves a commitment to learning which must be integral to any satisfactory process (as documented in the Narwhal Management Case Study (Armitage, 2007:79)). If we consider the results of the community questionnaire exercise in this thesis project, the first and most frequent issue noted (in three out of three instances listed as number one option for action in the draft community strategies) is the need for sustained and accessible environmental Community education. This would indicate not necessarily a commitment to learning, but certainly the desire and documented need to focus on this area. In addition, we may interpret the results as indicating the there is an opportunity to increase learning and understanding between the separate groups. The creation of these Aboriginal environmental networks may also increase the ability to address horizontal or large-scale issues affecting all groups (Peterson, 2007:303).

Another key ingredient of adaptive co-management is: "Full utilization of the knowledge base in the resource system" (Charles, 2007:84). A contextually rich understanding of Indigenous issues (such as traditional knowledge, power struggles and cultural fluctuations) is central to the challenge of understanding the environmental gaps that exist on reserves and Aboriginal territories in Canada. The results of this

thesis research demonstrate an intentional effort to include traditional knowledge keepers, everyday citizens, as well as those with environmental expertise, in the process of developing the community environmental strategies. The results also clearly demonstrate (once again within all three instances) that cultural and traditional knowledge were issues of high importance and would need to be a focus of all implementation strategies.

Pursuit of robust management is also a common ingredient of adaptive co-management (Charles, 2007:84). Ecological challenges can threaten economic stability, particularly given the nature of many natural resource-dependant economies in Indigenous Communities (Armitage, 2007). To address a situation like this requires a re-thinking of the philosophy of 'management'. This might include the need to broaden the scope of traditional resource management to ensure its ability to embrace newer management measures, such as using an ecosystem approach (Charles, 2007). An ecosystem approach is central to most Aboriginal Canadian community governance philosophies, including those under investigation in this thesis project. The Aanishnaabek and Cree laid out a goal to develop community plans which are 'holistic', the OjiCree plan to 'involve traditional governance' and to see that the 'Community uses the traditional model' in developing their official strategy. Similarly, the Haudenosaunee asserted: "Community uses the traditional model, i.e. use traditional values to establish responsibilities to the environment" in the development of their official strategies (for more detail see thesis research findings in Chapter 4). In short, all three Community

Strategies on Pollution and Environment developed in the ICE Study make specific reference to this.

In sum, the process that ICE and its partners developed resulted in a three-part forum that was organized by the non-profit sector and partially funded by the Government of Canada. This overall co-management process arguably enabled the Ontario Communities which were involved to experience the first stages of adaptive co-management. This is evident through the demonstrated community input and support for creating a policy environment that is committed to learning and enabling citizens to be actively involved in addressing environmental issues. According to Charles, (2007:100), there is no complete recipe for adaptive co-management – it is a direction to be taken, versus a destination to be arrived at. It follows, then, if we consider our results in this thesis project in light of the ingredients of adaptive co-management that have been presented, that environmental management approaches that relate to adaptive co-management may ultimately enhance the sustainability required to achieve healthy ecosystems on Aboriginal lands.

There is always another side to consider in every argument. Adaptive co-management has been presented as an evolving framework that may offer ingredients and an intellectual space in which to develop environmental management strategies. However, a key issue with this approach is that for this process to work, all partners must be willing to come to the table and work together. According to Armitage (2007:77) and Peterson (2007), relations between co-management partners dictate whether learning,

collaboration and change can occur. In the ICE study, the emphasis was on having the Community members work together to develop solutions to their environmental problems. Whether or not they would have welcomed or worked with the outside officials in these endeavours is unknown and speaks to the general need to have initial buy-in from the community level (McConney, 2007). However, this possibility certainly merits consideration and discussion as some Canadian Aboriginal Peoples may not see or embrace non-Aboriginal governments or agencies as a full partner. Exploring the issue of willingness to engage directly with state officials in the community planning process on the part of Community members would require further detailed investigation, and most likely would appropriately be addressed on a case-by-case basis.

I have furthermore presented evidence that the approach discussed in this thesis project may also support self-governance through empowering Community members to be involved in making governance decisions related to land use and environmental protection. We must move forward with these lines of thinking cautiously, however, when we consider the fluctuating nature of the relationship between Canadian Aboriginal Peoples, the Canadian Government and the non-governmental sector. Caution is required primarily due to the fact that the extent of the roles of each partner in the implementation of the strategies that were developed in the ICE study, and support for these roles by all parties, have yet to be fully determined and will require further investigation. Furthermore, structural impediments related to language and different philosophical approaches, resources and environmental capacity at all levels

can be constraining in the evolution of adaptive management partnerships. Any future planning efforts must therefore consider all of the components discussed in this section in unison.

Chapter 6: Conclusions and Recommendations for Future Research

Moving beyond the discussion and analysis of thesis project results which was covered in Chapter 5, this chapter provides a concluding analysis and summary, including an overview of the major trends and highlights of this thesis project and recommendations for future research.

The following table presents a summary of the thesis project findings. Included therein are both elements that are seen to be lacking within the current framework, and opportunities to expand this framework based on the thesis results. The various components of this table are explained further throughout the remainder of this section.

Shortcomings of Present Framework	**Opportunities for Expanding Current Framework**
1. Lack consistent, appropriate governance approach. Current structures also not inclusive of Indigenous perspectives, culture and philosophies.	1. Apply community-based planning model on various scales to develop suitable, inclusive and consistent approaches to environmental governance which take full advantage of knowledge base.
2. Lack of support for self-governance: local ownership over planning and process.	2. Apply community-based planning model to promote Community empowerment and strategize involvement at the grass-roots level.
3. Lack of Community education, awareness and buy-in.	3. Apply community-based planning model to develop strategy for community education and support. Apply an adaptive co-management lens to develop and promote a commitment to sustained and accessible education.
4. Lack of secured resources, funding	4. Explore working within an

and Community capacity.	adaptive co-management framework, including embracing robust, adaptable management practices. Apply community-based planning model to develop strategies around capacity, securing funds and seeking opportunities for income.
5. Lack of suitably inclusive and holistic theoretical framework and lens for combining Indigenous and environmental management matters.	5. Use of adaptive, ecosystem approach and application of adaptive co-management lens to provide needed conceptual space.
6. Lack of consultation and inclusion.	6. Application of community-based planning model to ensure consultation and ownership (through phase 1, bringing Community members physically together).

7. Lack regulatory mechanisms for monitoring and enforcement.	7. Explore application of adaptive co-management framework for planning and ensuring ecosystem approach. Use community-based planning process to develop strategies to address regulatory gaps.
8. Lack of complete inventories and assessment of land conditions.	8. Apply community-based planning model to develop strategies for Community-specific bio-physical and cultural inventories.
9. Lack opportunities to create and maintain environmental partnerships and networks.	9. Use of community-based planning process to create networks, increasing ability to address horizontal issues.

Table 2: Summary of Thesis Findings

Due to their historical ties to the land, their protected Aboriginal rights and their spiritual and political beliefs which evolve around concepts of them being protectors of their lands and environments, various Aboriginal groups are interested and have various expectations around influencing decisions regarding their territories and how their lands are managed. Inclusive approaches to environmental management usually involve a lengthy process time-wise, and the ICE initiative documented in this thesis project is no exception to this generalized rule of thumb (Peterson, 2007:304). Despite the fact that the ICE study remains in the preliminary planning phase, the thesis research results have provided some important information regarding the development and implementation of environmental management on Aboriginal lands. The objective here was to provide baseline information on developing a context at a macro level for the necessary discussions and decisions that need to be made at micro levels. In this regard this thesis project has documented a community-based planning process which provides a mechanism for future groups to discuss shared concerns and collectively brainstorm for solutions. The results of this thesis project also indicate that this process promotes local ownership, inclusive dialogue, holistic and culturally appropriate strategies and is in line with attributes of adaptive co-management.

There seem to be casual connections and substantive similarities between the three sets of groups that were documented in this thesis project. Similarities can be seen in particular with regards to Community support and education, Community capacity and

resources, Community monitoring and enforcement, creating and maintaining partnerships and networks and a focus on integrating traditional ecological knowledge and techniques. There are also connections between these three case studies and several that were previously documented, suggesting potential opportunities to apply this community-based planning approach on different scales (For example, at the local, provincial or national levels). This further suggests that regardless of superficially distinct project or subject areas, forums and initiatives related to environmental protection on Aboriginal lands in Canada tend to be similarly grounded in principles of sustainable development, community involvement and involve application of the traditional ecological model. As discussed in Chapters 1 and 3, a suitably inclusive theoretical framework for analysing and combining environmental and Aboriginal issues (taking into account their marriages to the cultural, philosophical, social, economic and political realms) appears to be lacking. Unless we have a way of bringing existing and future studies together within a common frame of analysis we may fail to respect the complex unity of these studies, and our response to them may continue to be fragmented, non-supportive and/or inappropriate. I have aimed to draw attention to this consideration throughout this thesis in the hopes that future analysis, even where they seem to be topically different, are undertaken with the same intention.

The analysis throughout this thesis project has led ultimately to the suggestion I am putting forth at this point; enabling the establishment of suitable environmental management systems on Aboriginal lands is made possible through fostering community-based planning. Community-based planning gets off the ground through,

for example, conferences such as those considered in this thesis. A second concluding proposition I am putting forth is the use of a more adaptive approach and possibly applying an adaptive co-management lens in order to provide the needed conceptual space for analysis and discussions on this matter. Adaptive co-management is, after all, not a destination but rather a direction to take (Charles, 2007:100). This is in line with an ecosystem approach, which calls for frameworks that are continually able to evolve and adapt to the changes that naturally occur in all ecological and social environments and directly impact all governance systems (Keith, 1994).

As demonstrated in the previous chapter, many components of this thesis project and the resulting data are in line with key pillars of adaptive co-management. This includes in particular a focus on sharing power and decision-making requirements through community involvement and empowerment (Armitage, 2007). If we apply this pillar specifically to the results of the thesis research, this component of adaptive co-management would include bringing people together at the grassroots level to identify gaps and broader issues of concern, and would lead ideally to the development of environmental community plans or strategies. These strategies can address a variety of important environmental management components, for instance, they would typically address the issue of securing resources for thorough community-specific bio-physical and cultural inventories so that impacts to cultural, physical and social well-being can be identified and addressed (this was identified as a primary goal in all three data sets in the ICE study). These plans also require buy-in and support at the community level, as well as support from all associated partners and sources of funding. A suggested

concept for future research then would be to further explore these linkages, possibly through a detailed analysis of a similar governance scenario and its results in incorporating adaptive co-management criteria throughout its implementation. Another possibility is to consider the success of applying ingredients of adaptive co-management as they may or may not already exist in pre-existing case studies.

This thesis has also focused on providing some insight into the workings of the relationship between western concepts of environmental management and Indigenous discourse. The intent in this regard was to shed some light on new ways of approaching environmental issues and the modification of current governance structures to be more inclusive of Indigenous perspectives and culture. A recommendation for future researchers and decision makers is to use the arguments and conclusions presented in this thesis to increase awareness around the need to create Aboriginal-related policies that are driven from the community level. The three Aboriginal groups under investigation in the ICE study were able to successfully work together as units to create strategies for addressing their environmental concerns. Therefore, the success of this thesis research is related to the fact that the overall process of holding the conferences was successful in enabling the Communities to begin the environmental management process (discussion and planning). Although the ICE study presented here has only concluded its beginning stages, the results seem to support an argument that other researchers have put forth: environmental management in Indigenous Communities is best approached in a fashion that is inclusive and puts Community members in control as much as possible (Hornborg, 1998; Smith, 1999). This necessarily includes

addressing the relationship between knowledge and power. Our results seem to support the notion that the more that Canadian Aboriginal Communities undertake these types of governance exercises, work amongst themselves and develop mechanisms to assert and protect their culture, the more power will be able to be shifted to their hands. In addition, the results herein indicate that there are opportunities for future learning, collaboration and understanding between the three separate groups. The creation of such networks could increase the ability to address both large and small scale issues affecting all groups, since strategies that work for one Community may well work for another (Peterson, 2007:303; Smith, 1999:105).

Throughout this thesis I have attempted to sensitize the reader to the idea that Indigenous environmental governance is hybrid in nature for both process and in terms of academic reflection. The key take-away point is that no particular theoretical lens is completely appropriate for analysing this subject, (albeit some do seem to be more appropriate than others, i.e. post-colonial literature, feminism and adaptive co-management). Rather, several diverse disciplines and approaches can be bridged together to create a unified lens for analysis. Just as environmental protection and management cannot be neatly managed within a box called 'environmental policy' (Castree, 2007), nor should Indigenous environmental governance be approached in a one-dimensional fashion. In coming years Canadian Communities will continue to move their way through this type of relatively new territory and hopefully, will build on what works locally and internationally, drawing on case study examples (such as those discussed in this thesis project) in order to move forward in creating and solidifying an

approach that fosters appropriate environmental management scenarios on their lands. We have discussed the need for an inclusive, balanced, holistic, culturally appropriate and locally empowering ecosystem type of approach. All of these ingredients must be considered together in context in order to protect the environmental integrity of these sensitive areas and to move forward in developing a more complete, inclusive context for future research and decision-making.

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Appendix 1: Community Assessment Questionnaire Form

Use this form to assess the extent and impact of pollution on your land. Reflect on what has changed in your community as a result of pollution, the impacts pollution has had on human and animal health, and challenges that you or others face in trying to prevent or address these problems. **Click on each question to join the discussion in our online forum.**

General Questions

1. How has pollution and the environment impacted your exclusive use and enjoyment of your Territory, cultural activities, hunting, fishing, traditional knowledge and gathering of medicines?
2. Does your community suffer from illegal dumping?
3. Are toxic contaminants, i.e., tires, refrigerators, paint cans etc found dumped in your community?
4. Do you recognize that the consultation process, as reaffirmed by The Supreme Court of Canada, impacts your rights and your territory?
5. Does your health department find high unexplainable rates of, Respiratory, Cardio Vascular, Muscular Skeletal, Epidermal, Gastro Intestinal and Developmental cases in your community membership?

Questions for the Elders

1. Do you feel that western culture has over run local traditional knowledge in the management of the environment within your territory?
2. Do you think your community values Elder participation in the development of a community strategy on pollution and the environment?
3. How far back would you have to go to find the time when your community was not impacted by Pollution and the Environment?

Questions for the Youth

1. Are you concerned about environmental issues in your community?
2. Do you think youth participation is important to the development of a community strategy on pollution and the environment?

3. What timeframe would you set to see the full results of the Community Strategy on Pollution and the Environment, i.e.. Where your community is no longer negatively impacted by pollution and the environment?

Appendix 2: Community Assessment Questionnaire Results

Conference 1 –Haudenosaunee Communities

The Haudenosaunee Environmental Gathering took place Tuesday, November 20th to Thursday November 22, 2007 on Wahta Mohawk Territory in Muskoka, Ontario. A diverse group of Participants (see section 2.4 of this thesis project) gathered together for this interactive conference which consisted of…

Community Assessment Results

The Haudenosaunee Communities were given a questionnaire and asked to collectively answer the following overarching question:

How has pollution and the environment impacted your exclusive use and enjoyment of your territory, cultural activities, hunting, fishing, collecting of medicines, and traditional knowledge?

In order to facilitate the collective process of issue identification the group of participants was subsequently asked to place the answers to the overarching question under the following 4 sub-headings:

1. Identified Territorial Concerns
2. Identified Impacts on Hunting and Fishing
3. Identified Cultural Impacts
4. Identified Impacts on Traditional Knowledge

In total 30 responses were generated by the Haudenosaunee as follows (verbatim):

1. Identified Territorial Concerns:

- pollution from economic development (ex: the construction of highways, quarries, blasting), hydro lines, cottagers (motorboats)
- Illegal dumping are contaminating their land and waters
- salt on the roads is contaminating well water and forcing communities to buy bottled drinking water
- air pollution (ex: from traffic/truck emissions) is negatively affected plant life, and contaminating rain water (dirty car and house windows) - communities can smell the pollution
- outsider throw garbage onto the side of the highway, which the community then has to clean up
- Certificate of Possession holders are developing and clear cutting community land
- lack of environmental regulations for landfill sites (bury/burn tires/refrigerators)
- hydro dams are drying up community rivers
- outsiders are illegally accessing community natural resources
- community members are finding dying trees on their land (ex: oak, tamarack)

- toxic chemicals are dumped on land by community member, residents and contractors

2. Identified Impacts on Hunting and Fishing

- an increase in the region's population has left less space for hunting
- hydro wires break up traditional hunting areas
- changes in climate are disrupting animal migration patterns, and are changing animal behaviour and health
- pollution in the water has contaminated and even killed fish - it has become too risky to consume local fish
- outsiders come onto community land and over-hunt/over-fish, further depleting these community resources

3. Identified Cultural Impacts

- communities are impacted emotionally, feeling as though they are losing touch with their culture and with the natural world
- new generations can no longer enjoy the clean environment that other generations remember
- communities are experiencing health problems (ex: asthma, cancer, diabetes) because of an alteration in their traditional diet (their traditional foods are contaminated)
- communities are going through social changes (economic and political shifts, community conflict, spiritual disconnections)
- scientific, academic, and environmental processes are both leaving, and causing First Nation communities to feel left out of the equation
- there is a perceived disconnect between environmentalists and the First Nation experience

4. Identified Impacts on Traditional Knowledge and Beliefs

- it is becoming harder for communities, especially younger generations, to experience traditional ways of life
- pollution is interfering with traditional laws and rights
- there is a conflict between Indigenous and non-Indigenous thought in how they view the earth (ex: the earth and the environment as an entity)
- the scarcity and contamination of natural medicines make it harder to follow traditional ways
- traditional persons/medicines are not acknowledged by western doctors/health system
- premature deaths of Elders are leading to a loss in traditional knowledge
- there is a disconnect in respect/values/beliefs between generations
- Elders needs and wants are being neglected

Conference 2 –OjiCree Communities

The OjiCree Environmental Gathering took place on February 12th and 13th, 2008 in Thunder Bay, Ontario. A diverse group of Participants (see section 2.4 of this thesis project) gathered together for this interactive conference which consisted of...

Community Assessment Results

As was the case with the first group of conference participants (The Haudenosaunee group), the OjiCree group were also given a questionnaire and asked to collectively answer the following overarching question:

How has pollution and the environment impacted your exclusive use and enjoyment of your territory, cultural activities, hunting, fishing, collecting of medicines, and traditional knowledge?

In order to facilitate the collective process of issue identification the group of participants was subsequently asked to place the answers to the overarching question under the following 4 sub-headings:

1. Identified Territorial Concerns
2. Identified Impacts on Hunting and Fishing
3. Identified Cultural Impacts
4. Identified Impacts on Traditional Knowledge

In total 24 responses were generated by the OjiCree as follows (verbatim):

1. <u>Identified Territorial Concerns:</u>

- Industry and illegal dumpers are contaminating community land, lakes, rivers, drinking water, and traditional burial grounds
- Community expansions are resulting in a loss of sacred lands and environmentally important areas
- Communities are noticing changes in aquatic growth in lakes
- Lagoon contents are leaking or overflowing into the surrounding environment
- Industries are not properly restoring old industrial and commercial sites
- Communities are improperly disposing of toxics and appliances, causing further contamination of the surrounding territory
- Pollution from upstream industries are traveling downstream towards Reserve lands
- Communities refuse to drink water from the tap because of added chemicals
- Industries are clear-cutting forests surrounding and within communities

2. <u>Identified Impacts on Hunting and Fishing</u>

- Pollution is contaminating fish and migratory birds and negatively impacting the health of game – communities no longer have trustworthy food sources
- Mining in trapping areas is leading to scarcity of game

- Climate change is causing sudden changes in natural systems, effecting trapping and making hunting difficult and dangerous
- Quick spring thaws are causing unpredictable bird migratory patterns and behaviour

3. Identified Cultural Impacts

- Pollution is negatively impacting community health
- Dust in communities is causing health problems, including the inability to exercise and increases in respiratory problems
- Climate Change is causing changes in ice thickness, leading to problems with travel, trade, and shipments
- Communities are feeling disconnected from the environment and feel as though they are moving away from what is familiar
- Communities are becoming accustomed to fearing the environment, seeing it as normal to not interact with the environment
- Communities are less able to learn about their culture and learn from the Elders
- Communities are finding a greater occurrences of Environmental Racism

4. Identified Impacts on Traditional Knowledge and Beliefs

- Communities are less able to use their land and spiritual sites because of leaching pollution
- Communities are increasingly lacking a knowledge of natural systems and pollution pathways
- Communities are losing traditional knowledge in how to look after their territory and how to look after themselves

Conference 3 –Aanishnaabek and Cree Communities

The Aanishnaabek and Cree Environmental Gathering took place on March 18 and 19th, 2008, in Sault Ste. Marie, Ontario. A diverse group of Participants (see section 2.4 of this thesis project) gathered together for this interactive conference which consisted of…

Community Assessment Results

As was the case with the first group of conference participants (The Haudenosaunee group), the Aanishnaabek and Cree group were also given a questionnaire and asked to collectively answer the following overarching question:

How has pollution and the environment impacted your exclusive use and enjoyment of your territory, cultural activities, hunting, fishing, collecting of medicines, and traditional knowledge?

In order to facilitate the collective process of issue identification the group of participants was subsequently asked to place the answers to the overarching question under the following 4 sub-headings:

1. Identified Territorial Concerns
2. Identified Impacts on Hunting and Fishing
3. Identified Cultural Impacts
4. Identified Impacts on Traditional Knowledge

In total 11 responses were generated by the Aanishnaabek and Cree as follows (verbatim):

1. Identified Territorial Concerns:

- impacts on aquatic species due to ballast water being dumped in lake
- pollution of Great Lakes and rivers - can no longer swim
- garbage all over community
- pesticide and herbicide aerial spray killing animals and plants, getting into ground and water
- impacts on drinking water, concerns about the additions of Chlorine
- hydro lines and wires dividing up and destroying natural environment
- wind turbines limiting access to traditional Territory

2. Identified Impacts on Hunting and Fishing

- pollution killing fish, unable to use as food resource

3. Identified Cultural Impacts

- adverse impacts on cultural medicines

4. <u>Identified Impacts on Traditional Knowledge and Beliefs</u>

- communities not informed about pollution of their environment, -have lost touch with their traditional environmental teachings

Appendix 3: Community Strategies on Pollution and the Environment

Conference 1 –Haudenosaunee Communities

Draft Strategy on Pollution and the Environment

Haudenosaunee Environmental Gathering:
Developing a Community Strategy on Pollution and the Environment

Identified steps to develop the strategy:

1. **Community education programs** that teach environmental knowledge/practice and bring environmental issues to forefront
   - introduce communities to legal methods of environmental action (ex: the consultation process)
   - need to highlight environmental concerns for the community
2. **Environmental inventories/assessments of community land** to identify areas of concern and species at risk within a Territory
3. **Community waste management strategy**, including amnesty programs (ex: disposal days)
4. **Land management strategy**, so that each community is able to build and maintain itself in line with long-term goals
5. **Resources and funding** to carry out environmental activities
6. **Councils that are inviting/social**, where everyone can take part in discussions and decisions
   - community members need to show up at Council meetings to voice their opinions and work with the Chief and Council to enact environmental change
   - Council portfolios need to learn how to reach out and strategize (Council has various environmental responsibilities under Federal Acts)
7. **More involvement of staff and community members in environmental action**
   ex: get involvement from schools, give presentations to community, conduct discussion sessions
8. **Identification of environmental leaders in community** that will promote environmental initiatives (both adults AND children)
9. **Reinforcement of respect for all community members** (especially Elders), as well as the importance of Elder knowledge in creating environmental strategies

Possible strategies that could be initiated in the community:

1. Council/community divides environmental responsibilities into **appropriate departments**
2. Community uses an independent, unbiased **resource people**
3. Council uses an **institute** situated on the reserve that is independent of the Council and receives outside funding
4. Community uses the **traditional model** (use traditional values to establish responsibilities to the environment)

Community funding opportunities:

1. **Community investment fund/sales tax** (ex: for disposal/sorting of garbage)
2. **Environmental service** (must address type of payment and must track)
3. **Traditional method**
   - community devises and follows/enforces environmental laws based on responsibilities
   - must take these to the Grand Council

Ways for communities to raise funds:

1. **Research**
2. **Lectures** (at organizations/universities)
3. **Fundraising**
   - go outside community (lectures/raffles)
   - requires a lot of time/energy
4. **Conservation officers who hand out fines**
5. **Assessments for developers carried out by community members** (fee attached)
6. **Land permits**
7. **Bylaw fines**
8. **Hunting/fishing licenses**
9. **Fees for business/industries working on land**
10. **Impact Benefit Agreements** ex: using compensation as direct funding towards a community environmental program
11. **Community sales tax** (see #1 of community funding opportunities)
12. **Band Council Resolutions/Internal Policies:** acts as an environmental levy discouraging bad environment practices
13. **Community Damages Fund** for environmental monitoring, etc.
    - need to establish authority and community involvement

Illegal dumping strategies:

1. **Alert community of illegal dumping problems** via. Images/articles in local papers, etc.
2. **Use community monitoring systems** to document illegal activity
3. **Use media** to create wider awareness of issues
4. **Create illegal dumping bylaws**

Conference 2 –OjiCree Communities

Draft Strategy on Pollution and the Environment

OjiCree Community Strategy on Pollution and the Environment

Identified Steps to Develop the Strategy:

- **ensure environmental education of community**
- **conduct an inventory of community education levels**, done by community
  - recognize and empower community knowledge
- **conduct an environmental inventory** within community
  - assess environmental conditions, community capacity and environmental knowledge
  - take data to treasury board to support need for funding in communities, need for environmental programs in communities
- **encourage the involvement of community (including youth and Elders) in environmental regulation**
- **create bylaws**
  - passed by Band Council, enforced by community
- **create community environmental fines**
  - money goes into community environmental fund
- **create networks, partnerships or collaborations** with other environmental groups, such as non-governmental organizations (NGOs), while encouraging grassroots capacity to address issues and work with outside NGOs
- **create an effective communication strategy within and between FN communities**, as well as with outside communities, so that communities can learn from one another, and exchange and share relevant knowledge and environmental initiatives
- **find other funding sources**, learn to not depend on INAC
- **involve traditional governance** if in existence or if has a strong presence in community
  - create community enforcement strategies through traditional mechanisms
- **identify environmental grassroots leaders and role models in community** (both adults and children) that will promote environmental initiatives
- **reinforce need to respect all community members**
  - seek out and encourage elder, youth, and female input
  - create youth groups, women's groups, etc.
- **create financial working group** to review community financial situation and how to better manage finances
- **develop a remediation plan**

Possible Strategies that could be initiated in the Community:

- Council or community divides environmental responsibilities into appropriate departments
- Community uses an independent, unbiased resource people
- Council/Community uses an institute situated on the reserve that is independent of the Council and receives outside funding
- Community uses the traditional model

Funding Opportunities:

- Community investment fund/sales tax
- Fundraising (community fundraising, fundraising through foundations

Conference 3 –Aanishnaabek and Cree Communities

Draft Strategy on Pollution and the Environment

Aanishnaabek and Cree Environmental Gathering:
Developing a Community Strategy on Pollution and the Environment

- **Create awareness and education programs for community**
- **Create meaningful partnerships and networks**
  - NGOs, PTOs, activists, community groups, etc.
  - bridge the gap, engage the Elders
- **Develop two community plans**
  - one for reserve boundary and one for homelands
  - short, medium and long term holistic work plan involving members of the community
- **Designate and define intellectual property rights** (ex: mapping)
- **Develop, implement and enforce laws and bylaws**
  - Create funding opportunities by charging fines to industry and government who do not follow laws or bylaws
  - Create funding opportunities by charging fees to industry for permits or licenses to access FN land
- **Create or empower community youth groups**
  - Train youth in environmental research and taking on environmental initiatives in community (build capacity, provide youth with skills and direction, guarantee new funding for training)
- **Carry out environmental assessments** on reserve and on traditional territory
  - done by community with community defined standards
- **Seek out new funding** for recycling programs, source reduction, proper garbage disposal, electronic waste strategies, etc.
  - Look at innovative waste management initiatives ex: methane capture
- **Seek out governmental and industry commitment for new funding**, core funding, long term funding, sustainable funding, funding formulas
  - the fiduciary responsibility is there to consult with the FN people, and provide adequate resources
- **Ensure that government fulfills its existing obligations** (contracts, treaties, agreements)

- **Create environmental initiatives that do not require monetary funding**
  - bucket brigade, community action groups
- **Implement strategies to prevent cross-contamination**, invasion of exotic species
- **Look for alternatives to chemicals**, such as green cleaning products
- **Initiate programs to prevent pesticide and herbicide use**
  - Management strategies carried out by communities to limit use
  - Banning pesticide and herbicide use in your territory, in the province

- **Use community-produced permits for land management**
- **Monitor community health**
  - done by community
- **Enact community clean-ups** (ex: Great Canadian Shoreline Cleanup)
- **Put on special events** in your community
  - environment day, environment week, awards, recognition of individuals, Environmental Education Week (curriculum development), community pride events, etc.
- **Keep in mind some important take-away messages:**
  - Think globally, act locally
  - Prioritize between needs and wants
  - Keep things in perspective
  - Start thinking in present and making changes now
  - We are the messengers, spread the information
  - Do not try to change the people who don't want to change
  - Be the role model for the community, practice what you preach, seek out other role models
  - Take advantage of opportunities from growing environmental groups and movements