

**Indigenous Knowledge of the Land and Protected Areas:  
Fond du Lac Denesuline Nation and  
the Athabasca Sand Dunes, Saskatchewan**

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A Thesis Submitted to the Faculty of Graduate Studies  
in Partial Fulfillment of the Requirements for the  
Degree of Master of Natural Resource Management  
at the Natural Resources Institute

University of Manitoba

Winnipeg, Manitoba

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**BY**

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## **Abstract**

Many Aboriginal Nations in Canada seek to be involved in protected areas planning and overall land management. In a partnership study conducted with Fond du Lac Denesuline Nation in northern Saskatchewan, the cultural and ecological uses of land and resources were documented for the Athabasca sand dunes region on the south shore of Lake Athabasca. Denesuline land uses provided a basis to discuss the role of traditional land use and indigenous knowledge in the co-stewardship of protected areas in Saskatchewan.

Gathering indigenous knowledge in Fond du Lac Denesuline Nation involved a participatory research design developed through community meetings and study team working groups. Interviews and individual map biographies resulted in a collection of composite maps. The thesis does not include material considered confidential by indigenous knowledge holders. The partnership study was part of a larger project entitled “Respecting and Preserving Fond du Lac Denesuline Indigenous Knowledge: *thai gayé, ethedustél tûé*”, published by Fond du Lac Denesuline Nation (2004).

Documenting traditional Denesuline land use responds to provincial government interests in the Athabasca Sand Dunes Provincial Wilderness Park on the south shore of Lake Athabasca. The south shore region is not the full extent of Fond du Lac Denesuline territory; study participants described the area as shared territory with Black Lake and Fort Chipewyan Denesuline bands and northern settlements. Traditional land uses were documented with respect to travel routes and campsites, gathering areas, big game hunting grounds, furbearer trapping areas, waterfowl and egg harvesting, and fishing

grounds. Traditional land use activities are culturally significant, and the continuation of traditional land use requires the conservation of lands for future generations.

‘Co-stewardship’ as a management regime came up during negotiations with the Government of Saskatchewan in 2003. The term refers to the type of management arrangement that Fond du Lac Denesuline sought, a joint management arrangement. The traditional Denesuline management system has helped the Fond du Lac Denesuline survive and has historically conserved resources. Descriptions of wildlife habits and habitats, vegetation, and climate characteristics of the region establish a timeline that is directly related to traditional land use practices. These observations, experiences, and oral histories about people and the land affect how people use the land for survival and make adaptations for the future. With co-stewardship of protected areas as a goal there is a distinct role for Fond du Lac Denesuline indigenous knowledge.

The involvement of Fond du Lac Denesuline in the co-stewardship of protected areas promotes the development of a mutual understanding between existing management systems to conserve resources. In Saskatchewan there are few formally recognized examples for the co-stewardship of lands. However, this should be viewed as an opportunity to expand protected areas thinking rather than a reason not to proceed. Co-stewardship in Saskatchewan is an unique opportunity to involve indigenous knowledge holders in decision-making to secure lands for future generations.



### **Acknowledgements**

I would like to thank the University of Manitoba faculty members, Dr. Fikret Berkes, Dr. Micheline Manseau, Dr. Peter Kulchyski, Professor Thomas Henley, and Dr. Jill Oakes for their input and editing comments. Funding and in-kind support from the Northern Lights Community Development Corporation, Fond du Lac Denesuline Nation, Prince Albert Grand Council, the SSHRC (through a grant to F. Berkes), Indian and Northern Affairs Canada Northern Scientific Training Program, and the Beverly Qamanirjuaq Caribou Management Award assisted in the completion of the research. I would like to acknowledge the outstanding support of the community members of Fond du Lac Denesuline Nation; support from Elders, youth, and Band Council helped to guide the research and facilitate an exchange based on learning.

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## **Chapter 1: Introduction**

### **1.1 Introduction and Objectives**

In Canada, there are few cases in which First Nation's priorities and knowledge of the land have been incorporated into parks planning and management. In a research partnership established with Fond du Lac Denesuline Nation to further their objectives to have a larger role in management and decision-making for the Athabasca sand dunes in northern Saskatchewan, the co-stewardship of traditional lands was considered. My involvement in a research partnership with Fond du Lac Denesuline Nation stemmed from previous work experience in land and resource management which directed my interests to how people knew things about the land and what they know about the land. Our mutual interests in the sustaining lands for the future are summarized by Victor Fern, an elder from Fond du Lac Denesuline Nation:

“[The land] has been part of our lives and should be protected. It should be open to anybody as long as it is used the right way” (Victor Fern from Fond du Lac Denesuline Nation 2004: 64).

Our research partnership provided a unique opportunity for taking into account indigenous knowledge and land use in northern resource management. The Athabasca Sand Dunes Use and Occupancy Project (hereinafter referred to as the ‘partnership study’) took place in northern Saskatchewan and focused on the south shore of Lake Athabasca. The study area is shown in Map 1. The partnership study was designed to meet the first of two collaborative research objectives:

- 1) To identify and document cultural and ecological uses of lands and resources in the Athabasca sand dunes.

- 2) To discuss the role of traditional uses of the land in the co-stewardship of protected areas.

Following the completion of the partnership study, the second collaborative research objective required a consideration of how documenting ecological and cultural uses of lands and resources could influence management decision-making and policy formation; and why traditional uses of the land are significant to the co-stewardship of protected areas.

The Athabasca sand dunes in Saskatchewan are within Denesuline traditional territory (ALUPIAP 2003). Fond du Lac Denesuline Nation, located adjacent to the sand dunes on Lake Athabasca, is seeking to expand their role in management decision-making of the Athabasca Sand Dunes Provincial Wilderness Park. Protected areas management in Saskatchewan is described as the protection of ecological resources for the purpose of maintaining biological diversity and providing recreational opportunities for the public (Saskatchewan Environment 1994). The Athabasca Sand Dunes Provincial Wilderness Park is classified by Saskatchewan Environment as a wilderness park and has a primary mandate to preserve the unique ecosystem. The secondary mandate is to promote and provide outdoor recreational opportunities under strict backcountry and sensitive area guidelines. Map 1 depicts the 192,500 hectare park reserve which was designated in 1988. From that time all dispositions were put on hold until it was formally designated as a park in 1992.

The proposed Athabasca Sand Dunes Provincial Wilderness Park Management Strategy outlines a partnership framework between Fond du Lac Denesuline Nation and Saskatchewan Environment. The proposed framework was not approved by Fond du Lac

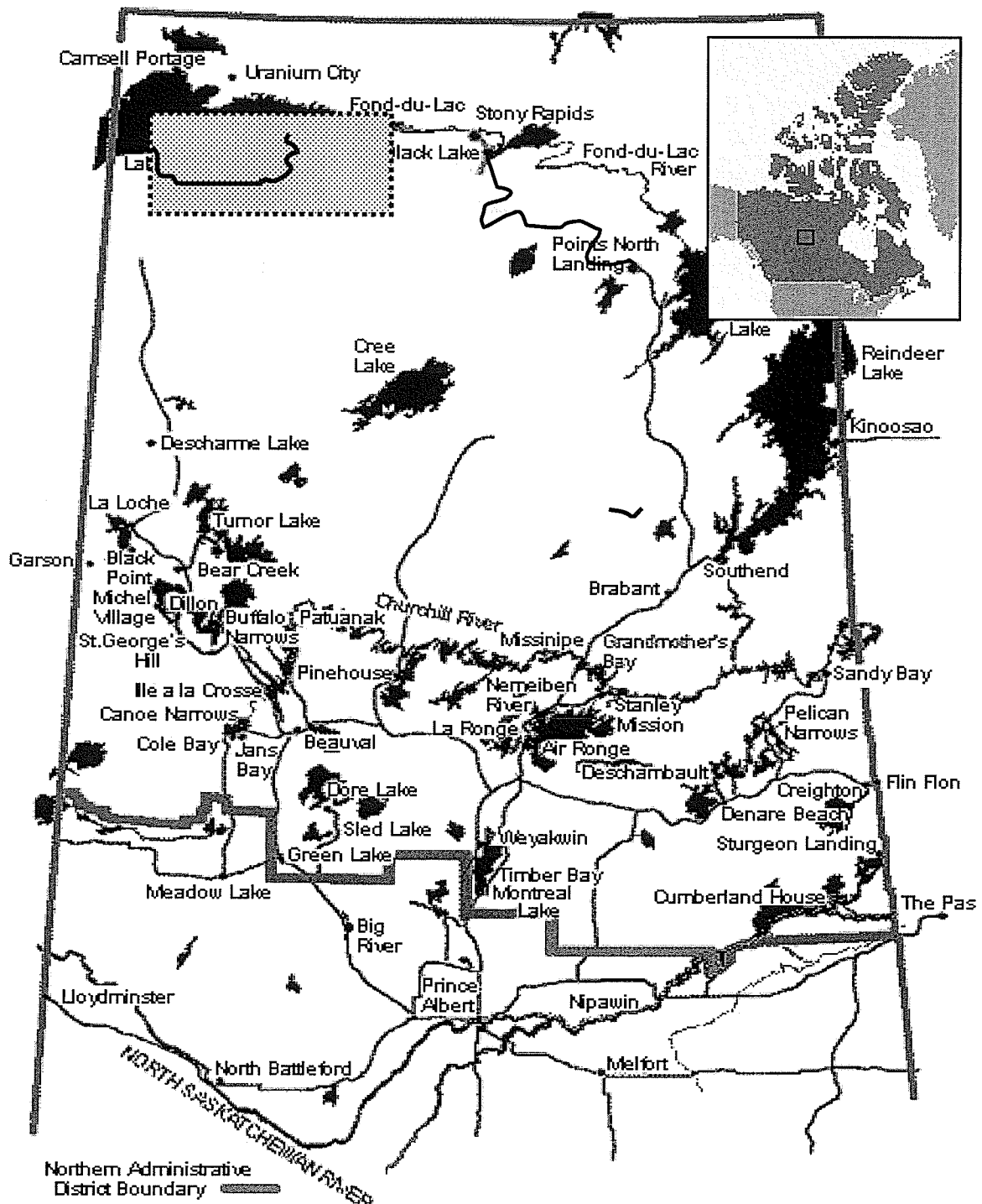
Denesuline Nation following community consultation and recommendations by the Federation of Saskatchewan Indian Nations (FSIN) in 1994. However there is consensus that some further management arrangement is needed. The co-stewardship of protected areas in Saskatchewan would be affected by the *Government of Saskatchewan Heritage Property Act* (1993) and the *Government of Saskatchewan Parks Act* (2000).

Implementing management through these Acts requires consideration of the *Public Involvement Policy* (1997) and *Aboriginal Affairs Policy* (1999). A discussion on policy implications in Chapter Four will refer to Fond du Lac Denesuline traditional land use and the potential to develop a co-stewardship arrangement for the region. Suggested changes to Saskatchewan's legislative and policy structure are presented in Chapter Five.

## **1.2 Research Plan**

The research partnership was formed between July 2001 and September 2002. The research planning and design phases of the partnership study took place between September 2002 and March 2003. Conducting interviews as the field component of the partnership study occurred between March 2003 and September 2003. Processing the data and writing a project report entitled: "Respecting and Preserving Fond du Lac Denesuline Indigenous Knowledge: thai gayé, ethedustél túé" (2004), was completed between September 2003 and May 2004. The results were verified and approved during two verification sessions. In total the research partnership spanned three years.

**Map 1: Study Area in Northern Saskatchewan**



Source: Saskatchewan Post-Secondary Education and Skills Training 1997; Inset from <http://uk.multimap.com/wi/62528.htm>.

### **1.3 Community Profile**

Fond du Lac Denesuline Nation occupies five reserves totalling 36,812.1 hectares. The community of Fond du Lac is located at 59°21'10"N – 107°00'30"W on the north shore of Lake Athabasca, Saskatchewan. According to May 2004 census statistics the total registered population (including both on-reserve and off-reserve members) of Fond du Lac Denesuline Nation is 1575 people (INAC 2004a). The community has access to



electricity and telephone services. In the community there is a small nursing station, community hall, 2 retail-hardware-dry goods stores, an elementary and secondary school and a Catholic church. As shown in Map 1, the community has winter access by road to Stony Rapids and the Athabasca Seasonal Road from Stony Rapids to Wollaston Lake links with highway 905 to La Ronge. There is also an airstrip in the community.

### **1.4 Ecosystem Management as Adaptive Management**

Three dominant themes identified as critical to implementing ecosystem-based management emerge in resource management literature. Specific themes which are relevant to the study region and future management goals include the adaptive



management of resources, the role of human values in resource management, and organizational change to implement successful ecosystem management (Grumbine 1994). In a practical sense these ecosystem-based management themes are translatable to the Denesuline management system as the documentation of indigenous knowledge and the role of knowledge in co-stewardship for the purpose of adaptive decision-making, the acknowledgement of existing management systems and indigenous knowledge, and the negotiation and establishment of management arrangements to further successful ecosystem management as co-stewardship.

The principles of ecosystem-based management indicate the need for community input, participation and support in managing lands and resources. Within indigenous management systems, adaptive management practices guide people and how they use the land rather than to actively manage the resources as separate from each other (Notzke 1994). The Denesuline management system is based on resource use practices which have adapted to changing conditions over time and resulted in an adaptive management system. The practice of adaptive management within a western scientific framework encompasses a 'learning by doing' approach where decisions are made based on previous experience and case studies, and the success of management decision-making guides future discussions. By taking a managerial outlook at adaptive management as a management technique it "...assumes incomplete understanding of ecosystems...and encourages management to be viewed as a series of experiments from which new knowledge leads to continuous adjustments and modifications" (Mitchell 1997: 102). There are distinct parallels between the objectives of Denesuline management systems

and protected areas management systems which are a form of adaptive management to conserve the land for future generations.

The concept of ecosystem-based management as an adaptive management technique integrates the "... scientific knowledge of ecological relationships within a complex socio-political and values framework toward the general goal of protecting native ecosystem integrity over the long term" (Grumbine 1994: 31). Understanding the relationship between people and the land requires linking indigenous knowledge with western scientific knowledge to bridge the gap between different ways of knowing (Riedlinger 2001). How people relate to the land may be different according to the knowledge system which guides their learning and experience and achieving a mutual understanding between resource users and resource managers requires collaboration between indigenous knowledge and western scientific knowledge systems. In the partnership study there was an assumption that the participants interviewed were knowledgeable about the land they live on, they are experts. They are not necessarily experts on all aspects of indigenous knowledge, rather they have some form of expertise which is directly related to their role within the community. For example, a commercial fisherman will hold specialized knowledge about the waterways they fish – the species within, how hydrological systems have changed over time at different locations, and how the health of the hydrological system affects their individual health as well as the well-being of the community. Indigenous knowledge holders are experts of human-ecological systems and can be considered adaptive resource users within a management system that adapts to changing social, political, economic, and ecological conditions.

## 1.5 Indigenous Knowledge about the Land

There have been many interpretations over how indigenous knowledge can be defined. In the research partnership with Fond du Lac Denesuline Nation a working understanding of indigenous knowledge became clear.

“Indigenous knowledge cannot be defined by one person alone, it is knowledge that is understood and shared by many people and so there are many different ways to understand what indigenous knowledge is...indigenous knowledge cannot be learned in a few years, it takes many generations to pass on the knowledge about people and the land that has been remembered since time immemorial” (Fond du Lac Denesuline Nation 2004: 17).

A discussion of the many definitions and interpretations described by academic scholars, Aboriginal Nations, government scientists, and cultural education organizations does not make it very clear what indigenous knowledge is, however it gives a basis for an individual to form their own perspective which is based on their learning and observation. Indigenous knowledge systems are a product of native science - science that includes feelings, the historical now, prayer as medicine and relations – native science is a religion (Colorado 1988). Developing an understanding of indigenous knowledge requires consideration of the social, ecological, political, economic and cultural context through which the knowledge was learned and passed on to future generations.

A working definition developed by Nisga’a First Nation in British Colombia separates traditional environmental knowledge from indigenous knowledge. “Traditional environmental knowledge combines current observation with knowledge and experience that has been acquired over thousands of years of direct human contact with specific environments...it interprets how the world works from the cultural perspectives unique to particular indigenous peoples” (Corsiglia et al. 1997: 22). This understanding considers

specific environmental knowledge as one element within an indigenous knowledge system.

The following description of traditional ecological knowledge provides an overarching view of a knowledge system which is applicable to all aspects of life.

“Traditional ecological knowledge is knowledge that has been acquired by Aboriginal peoples through direct observation, hands-on experience, and thousands of years of on-going interaction with the natural environment... (TEK is) the collective understanding and interpretation of a community that exists in both time and space (TEK has) evolved from generation to generation passed on orally and through traditions and ceremonies, and organically modified by the continuing experiences, observations, and insights of community members” (Barnaby 2002: 86). Knowledge about the land is indicative of a management system which has existed over centuries and has contributed to sustainable resource use practices and adaptive management techniques.

## **1.6 Co-stewardship**

Stewardship is about taking care of the land. Co-stewardship was referred to by Fond du Lac Denesuline Nation as an arrangement by which more than one individual, Nation, or organization wants to take care of the land. Stewardship invokes a common interest and willingness to cooperate and collaborate in management; it considers people as a vital part of the ecosystem rather than as separate from the land, and it is a descriptor for sustainable resource use. The Fond du Lac Denesuline management system is an example of stewardship, and the indigenous knowledge through which resource use practices were learned is an element of stewardship. As sustainable resource use is an

adaptive management technique both the mode of resource use and the management system that guides resource use are practical aspects of stewardship. There is a direct link between stewardship and management as a form of stewardship.

Indigenous involvement in the management of land and resources has increased since the entrenchment of Aboriginal rights within the Constitution in 1982, and numerous court cases related to land and resource rights such as Marshall (1999), Delgamuuk'w (1997), Sparrow (1990), Sioui (1990), Horseman (1990), and Calder (1973). Resolving conflicts within the court system and through protests and negotiations over detrimental resource use practices and competing resource interests are a form of stewardship as the conflicts arise due to concerns about how the land is being used and whether land use practices are sustainable.

Although Nisga'a First Nation lost their 1973 court battle over the ownership of their traditional territory, the political climate at the time fuelled the establishment of the comprehensive land claims procedure by then Indian Affairs Minister Jean Chretien. With comprehensive land claims being negotiated a new form of management system emerged that devolved decision-making responsibilities and shared jurisdiction to Aboriginal Nations. Land claims in the north have resulted in management arrangements that address land use rights and the management of how people use the land which address the stewardship objectives of Aboriginal Nations in northern Canada.

The exercise of stewardship in the provinces through court cases and conflict-based negotiations has clarified usufructory rights for Aboriginal peoples which affect future land use patterns and management. The Sioui case in 1990 determined that provincial laws could not overrule rights contained in the treaties (Anderson et al. 2003).

The Sparrow case of 1990 concluded that in order for Aboriginal rights to hunt, fish and trap to be affected, there must be a valid legislative objective to infringe on those rights (McDonald 1997) thus placing Aboriginal rights above those of industry and non-subsistence resource uses such as sport hunting and outfitting. The Delgamuuk'w case which spanned five years of decisions and appeals defined five possible valid legislative objectives to infringe on Aboriginal rights to use the land including conservation of a space or species, built infrastructure, economic development, forestry, agriculture, mining and hydroelectric power development, and the settlement of foreign populations (McDonald 1997). These court cases have a significant impact on co-stewardship as a form of management where the rights of individuals to use the land are contained within several jurisdictions of legislation and policy.

Co-stewardship involves sustainable resource use and affects the economic livelihood of Aboriginal communities. The reciprocal relationship between the land and people indicates that sustainable economic development is linked to stewardship. In the 1990 Horseman case, the Supreme Court of Canada decided that the historic treaties contained rights to practice commercial hunting as part of the traditional economy (Irwin 2000). The debate regarded whether the Natural Resources Transfer Agreement of 1930 extinguished commercial hunting rights by consolidating treaty rights with the provisions of the Natural Resources Transfer Agreement (ibid.). The Marshall (1999) case made a decision about Mik'maq living in New Brunswick and their right to fish for commercial livelihood and it was determined that they had the right to earn a modest livelihood through the commercial fishery (Donham 1999).

Stewardship for the land has been demonstrated through conflicts over how the land is used and several protests have centered around ownership and the rights and responsibilities to make decisions over how people use the land. From 1974 to 1975 the Haida Nation protested logging by setting up a road blockade on Lyell Island, the traditional homeland of the Haida Nation. After an ensuing series of court conflicts and negotiations with the forestry company, Government of British Columbia, and Government of Canada, an agreement was reached which agreed on parallel sovereignty to the Queen Charlotte Islands (South Moresby and Graham Islands) and the establishment of the Archipelago Management Board (RCAP 1996). While conflict was necessary to address environmental concerns and Aboriginal rights issues, a management arrangement alleviated conflict over land use and promoted stewardship through an adaptive change in the management system.

The Teme-Augama Anishnabai in Ontario formed the Wendaban Stewardship Authority as a co-management board to make decisions about land uses and activities in their traditional territory (Berneshawi 1997). Conflict over land use arose over the impact of forestry in the region and the perspective that the Teme-Augama Anishnabai had not entered into the 1850 Robinson-Huron Treaty and thus had not surrendered their land rights (Potts 1989). A series of court decisions and appeals ensued and ownership issues have yet to be resolved. However, the Wendaban Stewardship Authority established a Forest Stewardship Plan which discusses forest stewardship as:

“...the forest belongs to the life that lives within it and that the future generations of this life are dependent upon the continuity of the forest. Human beings must respect forest life and integrate human uses of the forest in a manner compatible with the continuity of forest life. Forever.” (Potts 1989: 208).

Where competing interests are present stewardship of the land requires a functioning management system that resolves conflict between land users. Co-management boards established through the comprehensive land claims procedures and through conservation or economic crisis are a form of stewardship. For example, the Joint Inuit/Government Park Planning and Management Committee was established as a result of the Nunavut Final Agreement (1993). The Management Committee set boundaries and defined management structures for Auyuittuq, Quttinirpaaq, and Sirmilik National Parks in northern Canada (Parks Canada 1999). The success of the Management Committee in decision-making will determine the success of stewardship objectives for the land.

In 1971 and 1972 Prime Minister Pierre Trudeau made land withdrawals to establish the Nahanni National Park in the North West Territory which were formally designated in 1976 (Tate 2004). Due to southern interests in hydro-electric development there was Aboriginal support for the park, although conflicts over Aboriginal resource rights in the park arose. The involvement of the Deh Cho Nation has increased since boundary discussions and management planning during the 1980's. Since then negotiations resulted in the establishment of the entire south Nahanni watershed as a national park (ibid.). Within the 1994 management plan the *Statement of the Deh Cho People on Protecting Our Lands* defined the Deh Cho Nation's philosophy of caring for the land. Recognition was made that the Deh Cho Statement paralleled Parks Canada's objectives to protect the land. The *Statement* discusses stewardship as learning and teaching traditional knowledge about the land, protecting lands for future generations, planning and managing lands in order to share with others, and as respect for the land through the relationship between people and the land (Deh Cho Nation 1994).



Fond du Lac Denesuline Nation began using the term co-stewardship in December of 2003 when referring to the future management goals for the sand dunes region in Saskatchewan. Recommendations about visitation to the sand dunes, local economic development, management rights and strategies, funding strategies, corroborating all existing information about the sand dunes on a database, and establishing research protocol were made at community meetings in Fond du Lac Denesuline Nation (Fond du Lac Denesuline Nation 2004). Their vision of a co-stewardship arrangement is to increase their level of involvement by devolving management rights and responsibilities to the community (ibid.). Saskatchewan Environment does not have a clear definition of co-stewardship in operation, but their *Public Involvement Policy* (1997) states the “stewardship of natural resources and the environment as the keystone to sound management. Healthy ecosystems must be maintained; sustainable approaches to natural resource use” (Saskatchewan Environment 1997: 5). Similarly, Parks Canada does not have a clear definition of what stewardship means in the context of management although discussions have been on-going. However Parks Canada acknowledges stewardship as a shared responsibility and recommends that local people become more involved in decision-making (Parks Canada 1994). The definition of stewardship may be contrary to achieving a mutual understanding about the philosophy of stewardship through collaboration and sharing between diverse knowledge systems. When looking at stewardship as a management goal, a co-stewardship arrangement would clarify legislative and policy impacts from various jurisdictions, consider sustainable economic development, and adaptive management techniques which acknowledge existing management systems and sustainable resource use practices.

## **1.7 Mapping Theory from Practice**

A participatory research design is described in Chapter Two through an outline recommending the involvement of elders, political representatives, community members and youth in the research partnership. The partnership study provided insight to how indigenous knowledge is not easily defined due to the context required to learn about the land and that ecological knowledge is part of a broader indigenous knowledge system. While indigenous knowledge about the land is described in Chapter Three it is understood that there are oral traditions about all aspects of life and that indigenous knowledge about the land is interrelated with Denesuline oral traditions that were not described in the partnership study. The results described in Chapter Three are an example of Fond du Lac Denesuline indigenous knowledge about the land where ecological change is observed and experienced through the practice of traditional land use activities. The role of traditional uses of the land in the co-stewardship of protected areas is discussed in Chapter Four through considerations of protected areas and indigenous management systems, co-stewardship, and relevant legislation and policy. Chapter Five provides conclusions to the objectives and makes recommendations for planning and management of the Athabasca sand dunes. The intent of the recommendations is to discuss considerations for negotiating a co-stewardship arrangement in Saskatchewan that will benefit the people of Fond du Lac Denesuline Nation and protect the Athabasca sand dunes as a culturally and ecologically significant landscape.

## **Chapter 2: Methodological Framework**

To discuss the role of traditional uses of the land for the co-stewardship of protected areas a methodological framework was developed to document the cultural and ecological use of lands and resources as part of Fond du Lac Denesuline indigenous knowledge. The methodological framework for the partnership study was intended to ensure community participation in research planning and design. The research planning process included data collection methods, visioning potential future uses of data and addressing intellectual property rights issues. This set a climate of cooperation necessary for successful learning, sharing and research. My role within the partnership study was facilitative rather than extractive and centered on research planning and design, coordinating the project team, and processing the results into several reports. The partnership study created a unique opportunity for the discussion of the role of traditional land uses and indigenous knowledge in protected areas planning and management in Saskatchewan.

While there is not one set of accepted methods for indigenous knowledge research, case studies and published guidelines for indigenous knowledge research have been documented by various Aboriginal organizations, researchers, communities and institutions. The most commonly used methodology for community-based indigenous knowledge research is the participatory research framework (Chambers 1994; Hoare et al. 1993; St. Denis 1992). Participatory research is an experiential type of research based on community direction and participation in the research planning and design as a means to empower communities. (Cornwall et al. 1995; Hoare et al. 1993; St. Denis 1992). Participatory research has been used to gather indigenous knowledge for land use and

protected area planning, biodiversity, climate change and other resource monitoring, environmental assessments, community development and education, and land claims processes (Chambers 1994; Hoare et al. 1993; St. Denis 1992).

Examining rapid rural appraisal and participatory rural appraisal research techniques showed that the partnership study would share some characteristics of both research techniques. Rapid rural appraisal (RRA) is a technique used for the “rapid collection of data about rural systems, and ecosystems” (Mitchell 1997: 218). A criticism of the approach is that the process is too extractive. The RRA process results in a transfer of intellectual property from the local system to an outsider. In the mid-1980’s, a new approach emerged, termed participatory rural appraisal (PRA). The PRA technique differs from RRA in that the intellectual property gathered during the research was intended to benefit the community by creating awareness and building capacity. The role of the outsider became more facilitative than extractive. “PRA (is) focused more on enabling local people to undertake their own investigations, to develop solutions and to implement action” (Mitchell 1997: 219). Figure 1 shows the RRA-PRA continuum and where the partnership study fits in this continuum.

**Figure 1: The RRA – PRA Continuum (adapted from Chambers 1994)**

Nature of process	RRA-----PRA
<b>Mode</b>	Extractive ----Elicitive--- <b>X</b> ---Sharing----- Empowering
<b>Outsider’s role</b>	Investigator ----- <b>X</b> ----- Facilitator
<b>Information owned by</b>	Outsiders ----- <b>X</b> --- Local people
<b>Information analyzed by</b>	Outsiders ----- <b>X</b> ----- Local people
<b>Information used by</b>	Outsiders ----- <b>X</b> ----- Local people
<b>X</b> – Partnership Study with Fond du Lac Denesuline Nation	

## **2.1 Methodological Difficulties in Indigenous Knowledge Research**

Questions of validity and reliability in a western science paradigm arise because of the human nature of participatory research in documenting indigenous knowledge. Institutions have made use of indigenous knowledge out of its social, religious, economic, political, and ecological context. While western science has historically been compartmentalized into clearly defined disciplines, native science does not fit into any pre-defined compartment without losing its context (Nadasdy 1999). A delimitation to integrating indigenous knowledge with western scientific frameworks is the tendency to distill native science by compartmentalizing it into categories such as a particular wildlife species or the fishing patterns at a specific geographic site (*ibid.*). The concept of inter-relatedness is forgotten once knowledge is compartmentalized in order to integrate it with western scientific knowledge. Furthermore, “linking western scientific approaches to indigenous knowledge is complicated by issues of intellectual property, power relations, interpretation, cross-cultural communication, verification, logistics and epistemology” (Riedlinger 2001: 31). These issues will be discussed further in Chapter Three as the limitations encountered within the partnership study and in Chapter Four as considerations for the co-stewardship of protected areas in Saskatchewan.

Recognizing native science as separate from western science alleviates questions of validity and reliability by taking into consideration the methodology and world view that is involved in indigenous knowledge research. This recognition has propelled issues of intellectual property ownership and concerns over confidentiality into research planning. The protection of intellectual property rights coincides with the protection of Aboriginal and Treaty rights as intellectual property of indigenous knowledge is an

individual and a collective right. To address these issues a Memorandum of Agreement between myself as the principal researcher and Fond du Lac Denesuline Nation was signed (Appendix A). Further confidentiality resolutions included contracts for digitization and interview assistance, and a permission form between the participant and the study team on behalf of Fond du Lac Denesuline Nation.

Potential problems in the research could have stemmed from my previous employment with Saskatchewan Environment. My past involvement in the region was on the Athabasca Land Use Plan Interim Advisory Panel as a researcher for the Government of Saskatchewan, providing input to the accredited Traditional Knowledge Researcher Training program, and as an external party in discussions about park management and future ecotourism development. Previous work with Fond du Lac community members and Saskatchewan Environment gave me exposure to local perspectives on lands and resources, which assisted in facilitating the partnership study. A limitation of my previous involvement in the region may have influenced some people's participation in the partnership study.

## **2.2 Methodological Review**

Since the 1977 Berger Inquiry into the effects of pipeline development in the MacKenzie Valley, the recognition and uses of indigenous knowledge through community research have been explored (Berger 1977). Examples of community-based research are now numerous, with indigenous knowledge being documented for the creation of databases, land use and occupancy studies, cultural site protection, land

claims negotiations and agreements, wildlife monitoring, and co-management initiatives. Case studies provide a valuable library of past failures and successes.

The partnership study, collaborative objectives, and methods are based on an experiential research process. Basing research methods on past and present experience allowed for more adaptability in sharing skills and knowledge to meet objectives.

Methods used in the partnership study were based on:

- Methodological review of past experience (case studies);
- Input from community members;
- Expertise of the study team.

Table 1 provides a short review of methods used for indigenous knowledge research. Based on Table 1, the success of indigenous knowledge research projects could be measured by the level of community support, amount of community input into research design, response burden of interviewers and participants, communication on the research team, digitization limitations, report writing, project coordination and project management experience, background research conducted and available resources.

## **2.3 Methods**

Guidelines for indigenous knowledge research have been published by the Dene Cultural Institute (1991), Council of Yukon First Nations (2000) and a briefing paper prepared for the Athabasca Land Use Interim Advisory Panel (ALUPIAP 2001b), as well as various case studies. Tobias' (2000) project outline describes an open-ended research process, following a participatory research framework in which the development of community consensus to conduct the project, forming a research team, and designing

**Table 1: Methodological Review of Indigenous Knowledge Research**

<b>Project</b>	<b>Research Purpose</b>	<b>Collection Methods</b>	<b>Processing</b>	<b>Project Strengths</b>	<b>Project Weaknesses</b>
Gwich'in Environmental Knowledge Project – Northwest Territories (Gwich'in First Nation 1996)	-storage of cultural information for future reference and use -cultural revitalization	-firsthand experiences -review of data by community	-written report	-community initiated -community designed and implemented	-lack of funding resources
Nunavik Inuit Land Use and Ecological Knowledge Database, Quebec (not Labrador) (Inuit Circumpolar Conference 1996a)	-develop data base of indigenous knowledge -provide database for land claims negotiations and other special projects	-individual interviews for Inuit knowledge -group interviews for land use data -maps used to record interview information -mapped info supported by written text of transcribed audio cassettes -detailed field research manual developed through community consultation -review of data through community verification (group discussion)	-digital storage (computerized database) -original field maps on acetates -GIS reproduction of data -printed interview notes by interview or category of data -cartridges of recorded interviews	-variety of data collection methods used -continual updating of data base for use in new and upcoming projects/processes	-access to data limited by availability of computer technology
Labrador Inuit Land Use and Ecological Knowledge Database, Labrador (Inuit Circumpolar Conference 1996b)	-collection of information placed in a large historical and cultural framework by drawing on more specialized information from academic research	-individual hunter interviews -data recorded on maps and in written form -separate interviews for land use data and resource ecology	-original cartographic field maps reproduced on printed base maps -original interview notes -published maps and text in 'Our Footprints are Everywhere'	-community initiated, designed, implemented -some information accessible to general public -access not limited to available computer technology	-male interviewees only
Hudson Bay Bioregion Project (McDonald et al 1997)	-conduct a regional assessment to document indigenous knowledge; especially related to environmental changes; natural foods and traditional societies; contamination; hydroelectric development; forestry; future developments	-28 communities participated -map biographies -group meetings to conduct interviews	-digital text database -digital map database -final Project report	-one of the first examples of Inuit and Cree working together – meetings held in 8 dialects of 3 languages -project designed and conducted by Aboriginal peoples	-gave a broad overview because the project used group meetings instead of individual interviews



Alberta Pacific Forest Industries and Aboriginal Ecological Knowledge in Northeastern Alberta (Brubacher 1996)	-collection of information for Aboriginal consultation and participation in industrial forest operations -to collect data on culturally sensitive areas within FMLA	-individual interviews -first-hand experiences	-maps and written text -some GPS data collected and input to GIS	-identified culturally sensitive areas -digitization of data through various mediums	-access and use of ecological knowledge yet to be addressed
Winnebago Reservation, U.S.A. (Szymanski et al 1998)	-land use planning (on current land base) -future land purchases	-group discussions using pie charts, diagramming, flowcharts -informal written questionnaire	-written report	-rapid appraisal -initiated and supported by Tribal Council	-no community participation in research design or implementation -consultation basis -lack of participation
Algonquins of Barriere Lake, Quebec/Ontario (Diabo 1996)	-integrated resource management plan through the Barriere Lake Trilateral Agreement	-individual and group interviews using open ended questions -interviews included a variety of ages, genders, and knowledge -where agreed upon, interviews were recorded (audio)	-preliminary classification system and database for geophysical features, soil, forest types and classes of flora and fauna -written report	-generated a set of recommendations for natural resource management -representative sample of interviewees	-used only one data collection method (interviews)

and testing the research guide is necessary to conduct the study. The planning and design of the partnership study concurred with guidelines recommended by the Dene Cultural Institute (1991) to begin by establishing a cooperative research process. Establishing a cooperative research process for the partnership study resulted in the “Athabasca Sand Dunes Use & Occupancy Mapping Project Research Guide” (2003).

To establish a cooperative research process, informal discussions and conference calls were used to define the partnership framework with Fond du Lac Denesuline Nation Band Council. The partnership framework was approved through two community meetings. As recommended by Martha Johnson (1992) and Terry Tobias (2000) in their work in the indigenous knowledge research field, and by the Council of Yukon First Nations (2000), it was through community meetings that the issues of access, storage and use of research data were addressed.

Further to the collaborative research objectives, the community envisioned the partnership study would deliver the following outcomes:

- “1) To develop a comprehensive research guide describing the methodology used to conduct traditional use and occupancy research in the community.
- 2) To build on existing protocol required to protect intellectual property rights of the community and its individuals, especially where outside researchers are contracted to participate in research.
- 3) To select a project team to work for the project and ensure the objectives are met, the majority of the project team were from the community of Fond du Lac.
- 4) To gather indigenous knowledge about wildlife, fish, and plant habitat; kill sites and hunting methods; traditional uses of the land; community-based monitoring; sacred sites; and community history.
- 5) To teach the youth about the knowledge of the land and its resources to maintain cultural identity.
- 6) To document community knowledge in a final report to further Fond du Lac Denesuline Nation’s position in land and resource management”  
(Fond du Lac Denesuline Nation 2004: 3).

Following the community's desired outcomes for the project to provide training and skills exchange opportunities for community members, a study team was selected through in-community applications and referrals. Once the study team was selected and contracts were prepared, a one week training session was held where we went through the research guide and made changes as per the study team's experience and observations during the test interview.

The use of research journaling provided information to evaluate the process of establishing the partnership study and the methods used. While planning the partnership study, issues specific to conducting community-based research in northern communities were identified. These will be reviewed in Chapter Three.

### **2.3.1 Participation and Support**

A total of twenty people participated in the partnership study. Of the twenty participants, eighteen were male and two were female. Of the eighteen male participants, one was an off-reserve band member and one was not a band member but was recommended for an interview by the community. The number of people who participated in the partnership study was small, at approximately 0.01% of the population, due to several factors:

- Participants were contacted and briefed about the partnership study by telephone and may not have known the details of partnership study;
- There was no remuneration as incentive to participate as there had been in previous studies;

- Confidentiality concerns arose due to infringement of intellectual property rights by past academic, government and industry researchers;
- Perception of myself as a previous government employee; and the
- Language and cultural barriers.

My participation in the partnership study as the research coordinator was mainly facilitative. I conducted 20% of participant interviews and completed 20% of interview transcriptions. The majority (80%) of participant interviews were conducted all in Dene or mostly in Dene by three interviewers from the community. Corresponding transcriptions were translated and transcribed by two community members. Two persons helped to coordinate the project, Diane McDonald, Prince Albert Grand Council Community Liason, and Louie R. Mercredi, Fond du Lac Denesuline Nation Lands and Resources Coordinator. Their role included language translation at community meetings, acting as signing authority for funding applications and accounting logistics, participating in conference calls, and providing research support.

Community support of the partnership study was demonstrated through community meetings. Two meetings were held to plan and approve the partnership study and four meetings were held during the data collection phase of the project. The latter were held to report the progress of the partnership study while verifying the focus, desired outcomes, and methodology of the study. The meetings were advertised on-air through the Missinippi Broadcasting Corporation, on community poster boards and in project newsletters. The meetings also documented issues of current sand dunes management and made recommendations for the future.

### **2.3.2 Research Guide**

The comprehensive research guide described confidentiality measures, interview and mapping procedures, verification, interview guide and notes for transcriptions and the database establishment. Interview and mapping procedures were discussed throughout the partnership study and several limitations arose which will be discussed in this section. The complete interview guide is contained in Appendix B, a summary is provided below.

Using map biographies in an interview allows the participant to mark down what they are saying – they are making an autobiography of their knowledge (Tobias 2000). Map biographies have been used to document land use information, cultural and spiritual areas of significance, hunting, fishing, trapping areas, wildlife habitat, distribution and movement, and local place names and history (Berkes et al. 2001; Chambers 1994; Huntington 1998; Riedlinger 2001; Tobias 2000). The individual map biography is the data collection tool while the composite map biographies are the presentation medium.

Map biographies were marked on 60” by 85” plastic overlays. The base maps were 1:250,000 including Tazin Lake 74N, Fond du Lac 74O, William River 74K, and Livingstone Lake 74J. This map scale was chosen because in previous studies it was discovered that 1:50,000 scale maps were too fine and highly detailed making it difficult for some participants locate kill sites and trails. Similar difficulties were experienced using 1:500,000 scale maps as water bodies used for navigation were not represented.

Points were used to mark kill sites, gathering sites, overnight sites, and sacred sites. Open lines were used only to mark trails and travel routes (land and water based). Polygons, or closed lines, were used to mark gathering sites or sacred sites which may cover a larger area. It is important to note that some participants preferred to mark sacred

areas with polygons rather than points to protect sensitive information. In some cases, no map markings were used for sacred sites according to the wishes of the participant. Instead the recorded interview session provided details about a sacred site which would not identify its exact location.

Map points can be interpreted as indirect polygons. Points marking kill sites, fishing sites, or gathering sites were deemed to be approximate due to the course map scale (1:250,000). Digitization also alters the representation of the map point and provides a technical buffer. For example, many islands and smaller streams are not on the map due to scale. The first batch of map biographies digitized had a 400 to 500 meter margin of error. The margin of error for the second and third batch of map biographies was less than one hundred meters. Considering map scale, size of the map point, and map reproduction at a much smaller scale the margin of error as represented on the maps is negligible. The size of the map points buffer the actual site where a traditional use activity occurred therefore each point could be interpreted as an indirect polygon. This conclusion expands interpretations of how wildlife and people use the land.

Interviews were recorded using table-top cassette machines and external microphones. Interview length varied from 30 minutes to 2.5 hours depending on the age, experience and willingness of the participant. Anchoring of interview data on the cassette facilitated translation and transcription of recorded data as well as providing textual reference to map biographies. Anchoring references oral responses with corresponding interview question numbers and map references.

The interview guide is comprehensive and was designed to document indigenous knowledge in areas of interest to the community, to achieve the desired outcomes, and to

provide a basis for the future recommendations. The comprehensive interview guide may have resulted in a high response burden for some participants. The response burden was also affected by language barriers as the effort required to converse about the land required language translations and at times repetitions or clarification of specific words or phrases. Language barriers were experienced as the interview guide was created in English then translated to Dene during the interview and while the interviewers who conducted interviews in Dene were proficient in speaking Dene, there are differences in words and phrases used according to age and gender of both the interviewer and the participant. The comprehensive interview guide included three sections and is listed in Appendix B.

Section One reviewed information about the participant, their family history, amount of time spent on the land, and the purpose of spending time on the land (Yantz 2003). The questions in this section were intended to gather information about the participant, their family history, and about how much time they spent on the land. Participant information was not analyzed due to confidentiality concerns. However, community-led initiatives to document community history could consult the partnership study for information about family histories and kinship ties.

Section Two was a comprehensive review of wildlife subdivided into the following categories: big game, small game, furbearers, birds and fish (Yantz 2003). Wildlife species included in the interview guide were decided at a community meeting held May 30, 2002 (Fond du Lac Denesuline Nation 2004). For each species, relevant habitat related questions were asked. Habitat components such as feeding grounds, breeding grounds, spawning grounds, nesting areas, ice and water crossings, and beaver

dams and lodges were included (ibid.). Section Two of the interview guide where the interview was broken down by species resulted in a particularly high response burden. During the training session with the study team it was decided that for Section Two if a participant responded that they had not killed a particular wildlife species then the remainder of the questions for that species were not addressed. It is noted that the directive nature of the questions could have affected the participant's confidence, hence the possibility of there being a response burden. One limitation to this practice was that indigenous knowledge about a species or area learned through observation or oral histories were not recorded.

Section Three involved questions about traditional plant uses for food, medicine, technology or cultural use. Sacred areas such as death sites, birth sites, clay/rock/soil and berry gathering areas were included (Yantz 2003). Due to the high response burden of Section Two, Section Three could have been explored in more detail. The concluding section of the interview guide asked the participant about future planning and management (ibid.). The concluding section would have benefited from more questions about potential uses of researching indigenous knowledge in the community and about the issues and recommendations of Fond du Lac Denesuline Nation's future involvement in the use and management of the sand dunes region.

### **2.3.3 Research Protocol**

Tobias (2000) identifies respect as the main principle of collaborative research design and implementation. Informed consent provided a mechanism to monitor respect for the participants' intellectual property within the partnership study. Written consent



forms are only useful if the participant knows about the nature of the research, its objectives, and how the data collected will be used (ibid.). Community participation in the research design helped to disseminate information about the research. The permission form listed in Appendix C discussed the transfer of individual data onto composite maps, transcription of interview cassettes, and use of interview data in writing project reports. To protect intellectual property rights of the individual and the community, confidentiality measures were defined in clause thirteen of the Memorandum of Agreement (see Appendix A). Study team contracts contained the same clause to address confidentiality.

Verification sessions allowed the inclusion of people who did not participate in the interview. The session held on December 19, 2003 resulted in the following recommendations:

- “1) To keep buffer zones on all sensitive sites including sacred areas, burial sites, birth sites, and traditional plant use gathering areas.
- 2) Need to verify the composite maps at a community verification session which was held on February 18, 2004.
- 3) To have the community composite maps available in various formats for presentations and negotiations. The format of the maps is important for negotiations and presentations, there was a request for the maps to be presented as layers in transparency and powerpoint format” (Fond du Lac Denesuline Nation 2004: 71).

A community verification session held on February 18, 2004 was attended by some project participants, Band Councillors, Chief-in-Council and interested community members. At the meeting, composite maps were reviewed and approved and issues regarding access and storage of project data clarified. The project report was also reviewed and the opportunity was given to make recommendations on changes needed. A formal letter of approval is listed in Appendix D. Verification of this thesis dissertation as outlined in the Memorandum of Agreement is listed in Appendix E.

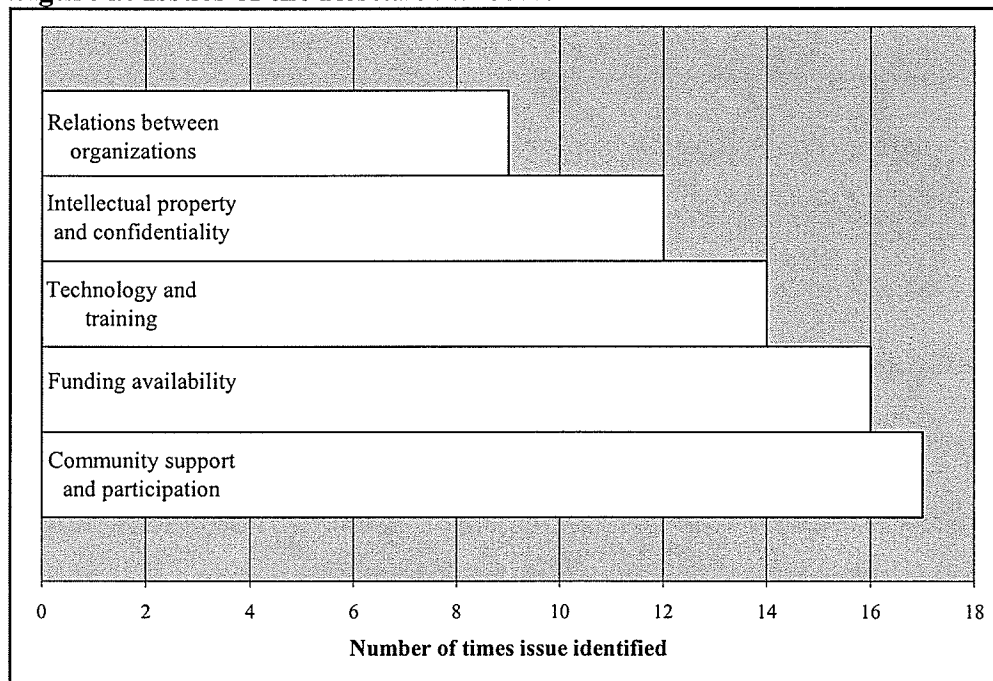
### **Chapter 3: Documenting Cultural and Ecological Uses of Lands and Resources**

Through the partnership study a series of composite map biographies and descriptions of what the maps represent were gathered. To analyze the composite map biographies does not reflect the context of the knowledge on the maps. Similarly, to analyze interview transcriptions with or without associated map biographies excludes the context through which that knowledge was learned and passed on. For this reason, separate reports were produced following the partnership study. The project report is a more comprehensive summary of the partnership study which included maps and quotations from interview transcriptions. The intention was to establish a temporally descriptive account of indigenous knowledge about the land which was inclusive to traditional land uses as practiced through the Denesuline management system. The completion of a thesis dissertation based on the partnership study allowed for further discussion into the role of indigenous knowledge in protected areas planning and management. Chapter Three will summarize the results of the partnership study and discuss the research process and difficulties that arose during the partnership study. Selected composite maps and a discussion of what the maps represent demonstrate the in-depth knowledge that Fond du Lac Denesuline have about the land. Based on the partnership study the role of indigenous knowledge and traditional uses of the land will be discussed in their context to the co-stewardship of protected areas. The discussion is significant to resource managers as the development of an understanding for the role that indigenous knowledge has in the co-stewardship of protected areas.

### 3.1 Involvement in the Research Process

The establishment of co-stewardship arrangements builds trust, eliminates redundant bureaucratic procedure, builds capacity within all organizations involved and maximizes capital available to manage lands and resources. During the partnership study several issues arose which provided insight to possible limitations of co-stewardship in the north. Through six community meetings and numerous conference calls related to the establishment of the research partnership, research planning and the field work component of the partnership study, issues raised by Fond du Lac Denesuline Nation residents, Fond du Lac Denesuline Nation Band Council, Prince Albert Grand Council, government resource managers, and researchers were recorded and are listed in Figure 2.

**Figure 2: Issues of the Research Process**



Issues included funding resource availability, technology and skills, intellectual property and confidentiality, community participation and support, and relations between organizations. These issues affected not only the research partnership and the partnership

study but they are also delimitations to management initiatives in the north (Fond du Lac Denesuline Nation 2004).

Competing north-south interests for northern lands results in issues related to funding resource availability. The issue of funding arose where there was a need to acquire funding, and when funding proposals were rejected or accepted. While there are a large number of management boards, advisory panels, and steering committees per capita in the north, the majority of such management bodies are established and led by agencies representing southern interests in the north. Southern interests in northern lands include resource extraction activities such as mining, commercial fishing, trapping, outfitting, fishing, forestry and non-timber forestry products, and environmental interests such as environmental quality monitoring, ecotourism, wildlife conservation, and forest fire management. Southern agencies with interests in the north capitalize on available funding to conduct research projects, initiate economic development opportunities, build baseline data sets for land and resource decision-making, and establish appropriate management structures. This leaves fewer resources for community-based organizations to pursue their needs and interests. The north-south competition for funding resources is exemplified in both international development literature and in capacity building frameworks. The historically paternalistic managing bureaucracy delegating decision-making responsibilities through a top-down approach does not take into account local needs and perspectives (LRCN 1991; Pretty 1995). The establishment of co-stewardship for protected areas in Saskatchewan is partially dependent on whether funding resources were available to northern communities and organizations to facilitate northern-led

research initiatives and participation in negotiations to establish management arrangements.

Technology and training are capacity issues which involve both the availability of required technology such as computers and specialized software, and the training to use the technologies required. Categorically similar issues raised included available work space, language abilities, and formal education levels. Technology and training capacity are directly related to resource availability as funding resources are required to build capacity. The experience and training completion of two study team members assisted in planning, testing, and implementing the partnership study. Past experience, training, and a one week training session helped the project team build their own capacity and improved the partnership study methodology. Technology and training facilitate the successful implementation of management arrangements and are a vital part of management planning.

Intellectual property issues of ownership and confidentiality are directly related to respect and research protocol. Intellectual property issues affect relations between organizations especially where the sharing of indigenous knowledge through research is an objective. Confidentiality issues in the partnership study involved control over access and storage of the information gathered and the reports containing the research. The past conduct of government, industry and academic researchers in the community were marked by breaches of confidentiality which affected participation and support in the partnership study.

Respecting intellectual property ownership is directly related to issues of community support and participation. Attendance at community meetings, participation

in interviews, and lack of political support were identified as issues throughout the research process (Fond du Lac Denesuline Nation 2004). Possible causes discussed during community correspondence included the frequency of meetings in the south requiring political representatives from the community to attend; past projects offering stipends to participants for their involvement; confidentiality concerns; methods of announcing community meetings; and the general perception of myself as the principal researcher being a government representative.

Relations between organizations resulted in issues during the research process. Issues of trust, bureaucratic procedure, and overlapping roles and jurisdiction for lands and resources between Fond du Lac Denesuline Nation Band Council, Saskatchewan Environment, Natural Resources Institute, Athabasca Land Use Planning Interim Advisory Panel, and Cogema Incorporated were raised during the partnership study. It is also important to note that the entire research process including partnership forming, planning, field work, and presentation spanned a time period of approximately three years.

Over-representation of southern- based agencies with interests in northern lands has resulted in an under-representation of local peoples needs in the north. This is exemplified by funding availability to northern-based organizations, and by the availability of northern residents who have the means to participate. The participation of Fond du Lac Denesuline Nation in the co-stewardship of protected areas will require adequate funding, technology and training as determined through management planning decisions, and a formalized research protocol to address intellectual property issues. Participation in management decision-making will be discussed further in Chapter Four

through a case study review, which was consulted to form a checklist of indicators for successful management arrangements.

### **3.2 Athabasca Denesuline History and Resource Use**

Knowing how people came to live here on the North American continent is as complex as understanding the origin of people as a distinct species. The oral traditions of many Nations of the world explain creation and subsequently indigenous elders teach the origin of people and how they came to live in their existing and traditional territories. There is a potential in documenting oral histories to distort the teachings by contextualizing them into a western scientific framework through the art and language of the written word (Cruikshank 1991). Once origins are explained in the written word, they are open to comparisons with archeological, anthropological, geographical, and religious sciences and their interpretations of history from many sources. From the time of contact with foreign peoples there have been attempts to describe indigenous people and to explain how they got there. Missionaries, explorers, traders, colonists, colonialists and bureaucrats have written descriptions which were later found to be inaccurate according to the people about whom they were written (Brizinski 1992). These inaccurate descriptions of indigenous peoples have been perpetuated in the arts, media, political and education systems.

The Athabasca Denesuline are descendents of those who crossed the Bering Strait to North America during one wave of a series of migrations from east to west. The Denesuline are part of the Athapaskan language group and hypotheses have been made that Athapaskan peoples moved southeast throughout the Subarctic where adaptations to

ecological surrounding and linguistic differences separated peoples into different tribes (Brizinski 1992). Denesuline people living in the subarctic were a traditional hunter-gatherer society and survival was dependent on environmental conditions (Dickason 1997). Changing climatic conditions over time in the subarctic region was evident through the advance and retreat of the treeline. With climatic conditions changing wildlife and vegetation adapted to the physiological characteristics of the region. The Athabasca Denesuline bands also adapted to changing climatic conditions through their resource harvesting practices. Athabasca Denesuline continue to rely on the land for survival although a moderate wage economy exists alongside the traditional economy.

Athabasca Denesuline are referred to in many historical texts as the Chipewyan peoples, however Chipewyan is the Cree word that was used to describe the Denesuline peoples. The Denesuline and Cree Nations have shared overlapping territory to the south of Lake Athabasca which at times has resulted in conflict (Marles et al. 2000). The perpetuation of the word Chipewyan was most likely due to the role of Cree and Metis middlemen in the fur trade and to the role of Cree and Metis interpreters involved in the historic numbered Treaty process.

A sustained trading relationship was established with fur traders in the early 1700's through a woman named Tha'naltther who was a Dene woman taken captive by Cree middlemen before she married a fur trader at York Factory (Hudson's Bay Company) (Coutu et al. 1999). She had a pivotal role in establishing trade between Denesuline bands and fur traders at York Factory. Trade continued through York Factory until the North West Trading Company built a trading post at Fort Chipewyan on the west shore of Lake Athabasca in 1788 (Bone 1992). With the 1821 amalgamation of the



Hudson's Bay Company and the North West Trading Company Fort Chipewyan changed ownership. The Hudson Bay Company continues to buy furs in the north through the Northern Store.

The signing of Treaty 8 in 1899 was due to several factors. The Athabasca Denesuline population was affected by influenza and an estimated 90% of the population was decimated due to illness (Elias 2003). The rapid decrease in population had negative impacts on the political stability, availability of food, and social structure of Denesuline bands. During the partnership study an elder from Fond du Lac Denesuline Nation, Joe Martin, described the impacts of influenza.

“There's a burial on a hill close to shore from a long time ago. This one elder [name] told me about it. There used to be lots of people but they died because of a disease” (Joe Martin from Fond du Lac Denesuline Nation 2004: 22)

The late 1800's marked an exploratory age of resource development in the north. The Canadian government began drilling for uranium as early as the 1890's (ALUPIAP 2003). In 1897 the Klondike gold rush was on and prospectors and surveyors migrated north (ibid.). Changes in policy and legislation in 1896 created problems for Athabasca Denesuline to acquire food for food. By the late 1800's the fur trade was in decline due to changing market demands in Europe which caused economic hardship in Aboriginal communities. In 1899 Treaty Commissioners arrived in northern Saskatchewan to negotiate treaty signing with Fond du Lac Denesuline, the Treaty had already been written and Fond du Lac signed an adhesion.

There are several clauses of Treaty 8 which are specific to lands and resources. The Treaty guaranteed that “...Her Majesty the Queen HEREBY AGREES with the said Indians that they shall have right to pursue their usual vocations of hunting, trapping and

fishing throughout the tract surrendered as heretofore described...” (INAC 2004b: internet). This clause continues to be significant in resolving competing resource interests in the north. A clause outlining the settlement of Fond du Lac Denesuline on a reserve and in a permanent settlement was opposed by Fond du Lac Denesuline as they wanted to maintain a traditional way of life and the southern reserve system of allocating 640 hectares of land to each band member was not suitable (OTC 1998). At the time of negotiations, it was agreed that the reserve system would not be set up immediately and the traditional way of life could be maintained. The applicability of the clause which promised assistance and equipment to establish farming and livestock ventures (ibid.) had an insignificant impact as the region is Canadian Shield and the shallow soils are not suitable for agriculture nor is the climate suitable for raising southern-range livestock.

The land surrender clause of the treaty states:

“the said Indians DO HEREBY CEDE, RELEASE, SURRENDER AND YIELD UP to the Government of the Dominion of Canada, for Her Majesty the Queen and Her successors for ever, all their rights, titles and privileges whatsoever, to the lands included within the following limits[...]AND ALSO the said Indian rights, titles and privileges whatsoever to all other lands wherever situated in the Northwest Territories, British Columbia, or in any other portion of the Dominion of Canada” (INAC 2004b: internet).

The interpretation of the word ‘land’ has caused debate over whether ‘land’ can be translated to infer the intended meaning. There are many different words to describe land and to interpret whether ‘land’ would include surface or subsurface rights. There has been significant debate over land ownership and land use rights particularly as competing resource interests arise in the north.

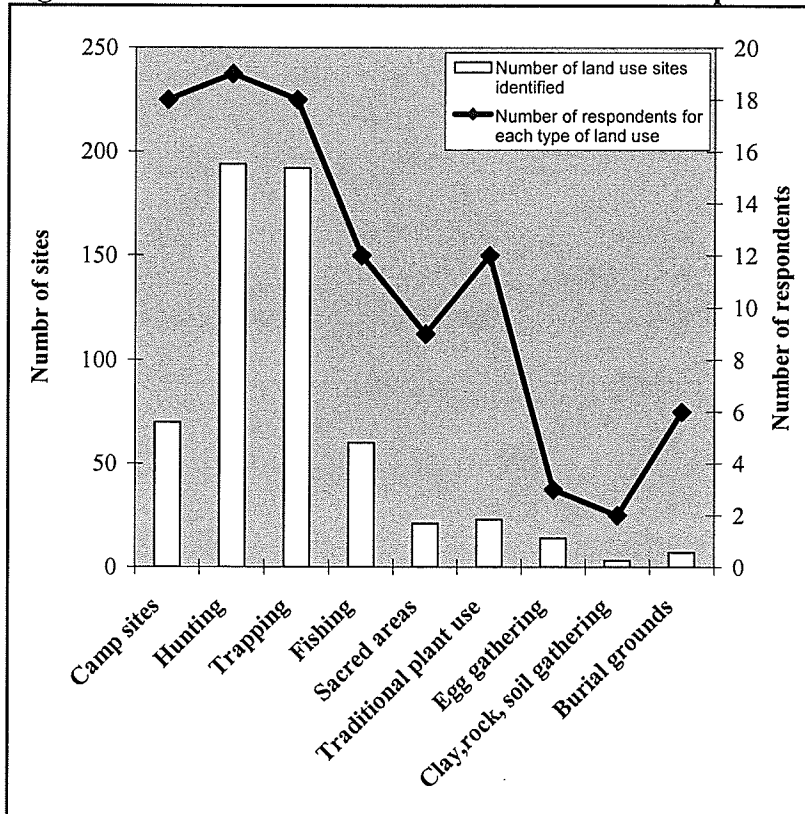
Mineral development interests brought surveyors to the north who were exploring on behalf of the Canadian government and independent business. By the 1929 the

uranium industry was established on the north shore of Lake Athabasca and by the 1940's the uranium industry was booming. This affected Fond du Lac Denesuline through the introduction of a larger scale wage economy in which people from Fond du Lac Denesuline Nation participated. The commercial fishery operated on Lake Athabasca from 1929 and resulted in the establishment of a fish plant on the north shore (ALUPIAP 2003). The social and economic characteristics of the Fond du Lac community changed as people from different Denesuline communities and northern settlements in the region traveled to the fish plant and the community of Uranium City for goods and services. During the early 1970's the uranium industry was in decline as there was a decrease in world demand for uranium. The economic impacts on northern communities were significant and services were discontinued for northern residents. Recently concerns over public and environmental health have prompted some response from federal and provincial governments to mitigate negative impacts of the uranium industry.

Fond du Lac Denesuline resource use has changed over time to respond to changes in the economic, ecological, political, and social climate of the region and to meet the community's needs. Knowledge of use and occupancy recorded during the partnership study by Fond du Lac Denesuline spans living memory of the eldest participant from 1920 to the present. Oral histories of life before 1920 remembered the signing of Treaty 8 in 1899, influenza epidemics, and a way of life that has been passed on for many generations (Fond du Lac Denesuline Nation 2004). Figure 3 combines land use practices recorded during interview sessions with the number of respondents for each type of land use. The resulting participation rates indicate that the most prominent type of land use by Fond du Lac Denesuline on the south shore region is food gathering through

hunting and fishing. The second most prominent land use is trapping for both food and commercial exchange.

**Figure 3: Fond du Lac Denesuline Land Use Participation Rates**



Food gathering is a culturally significant land use as hunting and fishing for survival is learned through elders and family as a part of the indigenous knowledge that is passed on through generations. While hunting and fishing are mainly for food use, trapping is for both food use and for limited commercial use as defined by the traditional economy within the indigenous management system. Limited commercial use would include the sale of furs to the Hudson Bay Company (Northern Store) and the unrecorded community reciprocity and trade system.

Burial sites and areas considered sacred for medicinal plant gathering, healing waters, and religious ceremonies are on the south shore. The traditional plant uses

depicted in Figure 3 are traditional land use activities practiced on the south shore and include food plants, berry gathering, and plants used for technology such as birch bark used to make pots and boats. Each of the traditional land uses and more detailed participation rates will be further described in subsequent sections.

### **3.3 Travel Routes and Camp Sites**

Map 2 indicates the travel routes and camp sites in the sand dunes region. Extensive travel networks are established in the region with 393 trail segments noted between twenty participants including both water and land routes. The trail network indicates the sand dunes region on the south shore of Lake Athabasca is shared territory. Fond du Lac Denesuline elders gave historical accounts of Fort Chipewyan Denesuline and Black Lake Denesuline travelling the same trail network, as well as more recent trail use by northern settlement residents (Fond du Lac Denesuline Nation 2004). It is also likely that the trail network is connected with the English River, Clearwater River, Buffalo River, Birch Narrows, and Hatchett Lake Denesuline Nations farther south, although no interview responses provided evidence to that.

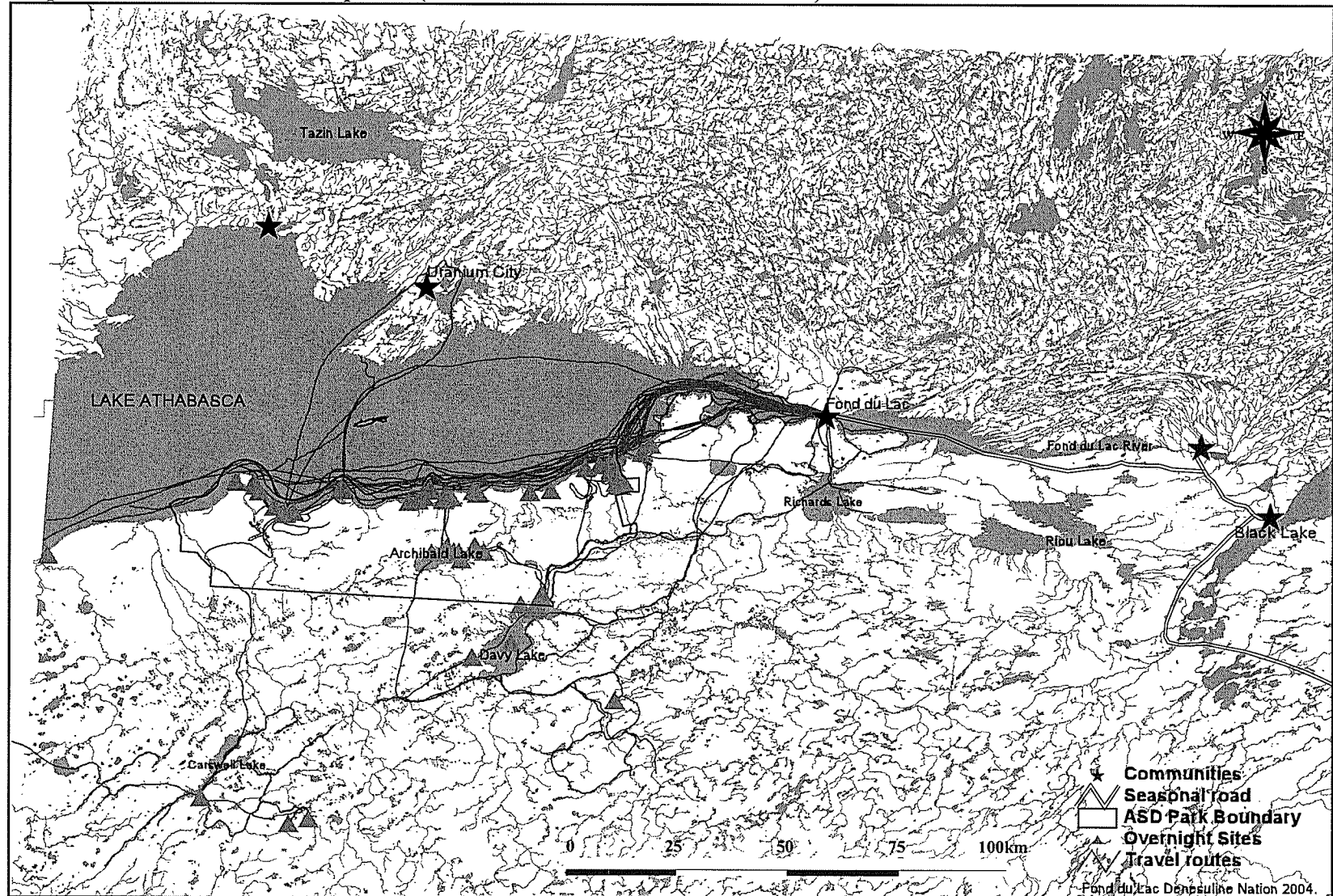
The significance of shared territory to indigenous management systems in the region supports the idea of sustainable resource use. In order for the resources of the region to be shared between different Denesuline communities, people must practise the exercise of restraint to conserve resources for the future. An elder from Fond du Lac Denesuline Nation describes the principle of sustainable resource use:

“One time I saw four deer here, but I didn’t kill any because I didn’t need it. The Elders use to tell us not to kill for nothing. Some follow that rule, some don’t. If you don’t need it someone else might, so leave it”  
(Alfred Naldzil from Fond du Lac Denesuline Nation 2004: 41).

The exercise of restraint is a conservation management practise according to Locke's property theory (Bishop 2000). Bishop (2000) demonstrated that Lockean property theory categorizes the Iroquois land use system as a management system which demonstrates their rights to own the land. Comparisons can be made between farming systems and hunting territories as hunting territories are delineated by neighbouring tribes and Nations implying that there is a socio-political understanding of a boundary. Furthermore, the exercise of restraint as part of a management system denotes collective ownership of the land as there needs to be communication to adapt to changing conditions (ibid.). The existence of the Denesuline management system suggests that Denesuline peoples have taken care of the land through sustainable resource use practices which require socio-political support in the form of a management system. Looking at property theory and historical and current land use practices, an evident conclusion can be made that the extensive and shared travel network necessary to live off the land and harvest for food provides a definition of Athabasca Denesuline traditional territory.

A total of twenty seven cabin and forty three tent sites were identified within the study area and are depicted on Map 2. A number of respondents identified a historic encampment where there are remnants of cabin foundations on the east bank of the MacFarlane River (Fond du Lac Denesuline Nation 2004). On both the west and east banks of the river are sixteen camp sites. Activities described there included social gatherings, food preparation, and tourism (ibid.). Historic and continued use of the MacFarlane River area provides evidence that the region holds cultural significance to the people of Fond du Lac Denesuline Nation.

**Map 2: Travel routes and camp sites (Fond du Lac Denesuline Nation 2004)**



The involvement of Fond du Lac Denesuline in the co-stewardship of lands on the south shore requires consideration of Aboriginal rights according to Delgamuuk'w (1997) and the need to consult Aboriginal peoples on issues related to lands. Oral history was also considered as evidence during the precedent setting Delgamuuk'w which would suggest that the definition of traditional territory through oral histories acknowledge pre-existing management systems and that involvement in land and resource decision-making is an Aboriginal right (McDonald 2003). As the south shore region is traditional territory of Fond du Lac Denesuline there is a legal and a political imperative to involve the Denesuline in co-stewardship.

According to the Sparrow (1990) case there must be a valid legislative objective, including but not limited to conservation, to infringe on any Aboriginal or Treaty right to use land and resources for subsistence purposes (McDonald 1997). The proposed Athabasca Sand Dunes Wilderness Park Management Plan includes a clause guaranteeing the rights of Aboriginal people to practice hunting, fishing, and trapping within the park boundary (Saskatchewan Environment 1994).

The historic encampment at MacFarlane River lies north of Fond du Lac Reserve #231 and is not included within the boundary of the provincial wilderness park designation. According to Saskatchewan Heritage Branch, there are seven archeological sites in the same region. Six sites are identified as artifact scatters while the seventh site is an artifact find (ALUPIAP 2003). Numerous environmental impact assessment reports for mining developments note archeological sites in the Athabasca region although none are recorded within the study area. With archeological evidence, oral histories about historic



and continued use and occupancy of the region, and composite map identification of sites used, Fond du Lac Denesuline Nation have legal, political and social rights to have a leading role in co-stewardship of the MacFarlane River and the sand dunes region.

### **3.4 Gathering Areas**

Gathering areas noted on Map 3 address the traditional uses of plants for medicine, food, technology and cultural purposes, clay, soil, and rock gathering, and egg gathering. For reasons of confidentiality agreed upon at the first partnership study verification meeting, plants used for medicine, technology and cultural purposes are grouped as traditional plant use (Fond du Lac Denesuline Nation 2004). A total of fifty two gathering areas were identified by thirteen participants. Gathering areas for clay, rock, and soil material resulted in participant descriptions about rock carving. Geese, duck, and seagull egg gathering around small islands on Lake Athabasca, on the Fond du Lac River, and on smaller waterways in the region are a traditional land use for subsistence food gathering (Fond du Lac Denesuline Nation 2004). Berry gathering areas for blueberry, cranberry, crowberry, mooseberry, raspberry, and chokecherry were also described and participants described berry gathering at camp sites which were used for social gatherings (ibid.). Traditional plant uses for medicine and technology were not described in very great detail high response burden of the interview guide. There are confidentiality concerns over the release of information related to medicinal plants and participants who discussed plants used for medicine did not always mark a particular site in their map biography, they may have chosen to mark a polygon or describe the medicine during the interview.

**Map 3: Gathering Areas** (Source: Fond du Lac Denesuline Nation 2004: 61)

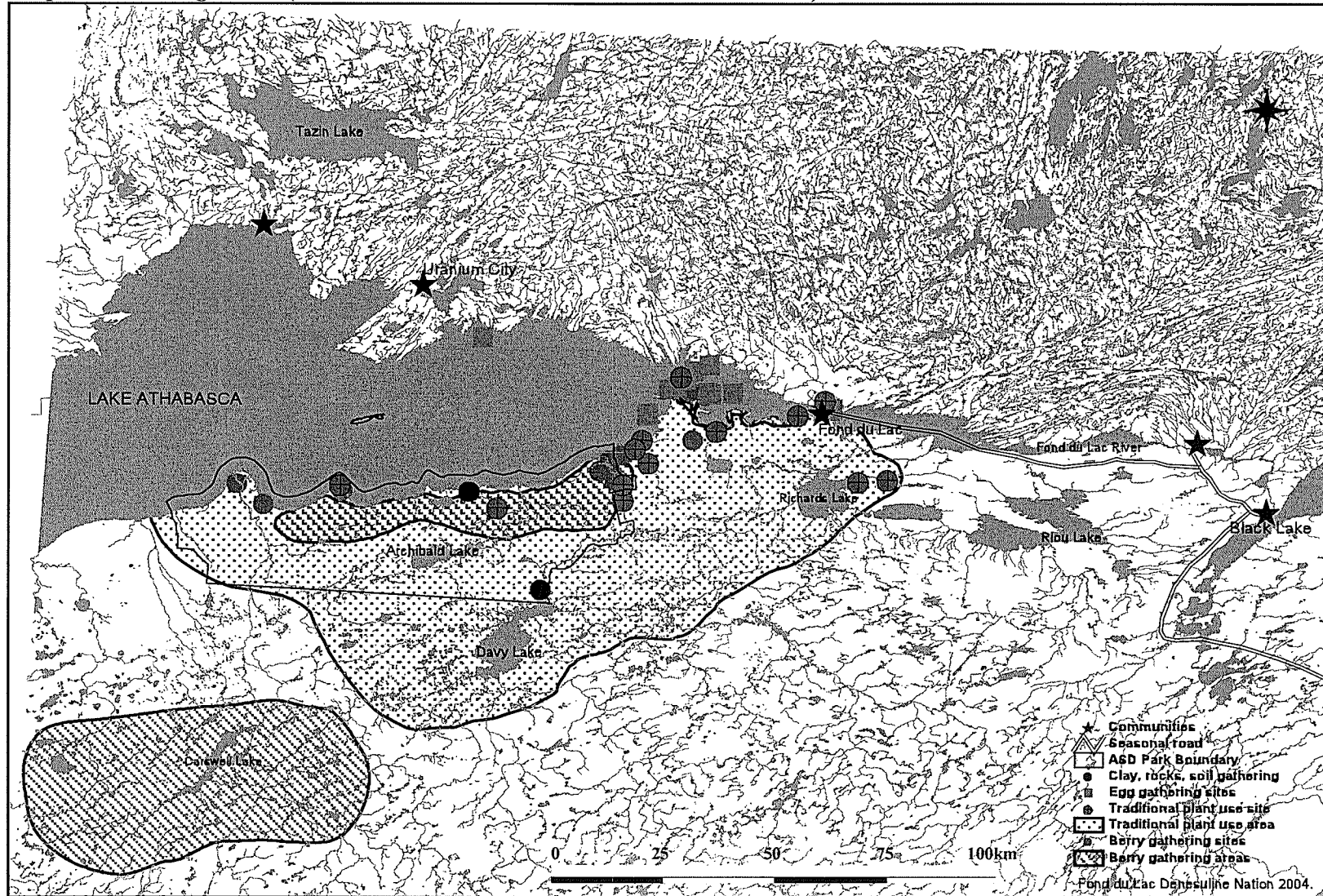
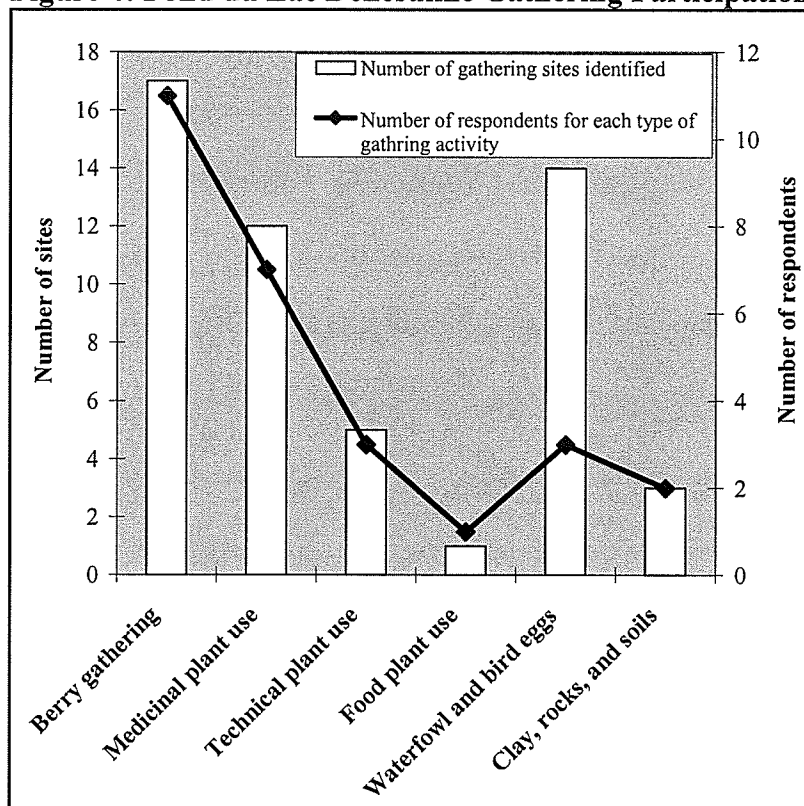


Figure 4 shows the participation rates for each category of gathering activity. The participation rates indicate the frequency each gathering activity is practised. For example, where eleven participants identified seventeen berry gathering sites then berry gathering could be interpreted as a more widely practised gathering activity than waterfowl and bird egg gathering where fourteen gathering sites were identified by three participants. Subsequently as fewer participants responded to gathering waterfowl and bird eggs an interpretation could be made that egg gathering is a specialized gathering activity which is practised based on an expertise of geographical space and on whether the knowledge and practice has been passed on throughout family history. Gender is a consideration when interpreting gathering participation as different gathering activities may be more often practised by women, children, or men.

**Figure 4: Fond du Lac Denesuline Gathering Participation**



Gathering is a traditional land use which is part of the Denesuline management system. As the Denesuline management system helps to define cultural identity, the continuation of gathering activities helps to maintain cultural identity which has been passed on through generations. Eli Adam, an elder from Fond du Lac Denesuline Nation describes gathering as a traditional land use activity along a travel route frequented by Fond du Lac Denesuline:

“There are lots of berries along the shore at the dunes. People used to gather berries on their way to Fort Chipewyan” (Eli Adam from Fond du Lac Denesuline Nation 2004: 59).

With gathering areas being an integral part of cultural identity there is a clear rationale to involve Fond du Lac Denesuline management of the sand dunes region. A question arises as to how a gathering area can be designated as a cultural site and protected within the existing protected areas management regime. Gathering areas designated as cultural sites could be protected as separate land areas, or they could be a rationale to involve Fond du Lac Denesuline in co-stewardship of the entire sand dunes region.

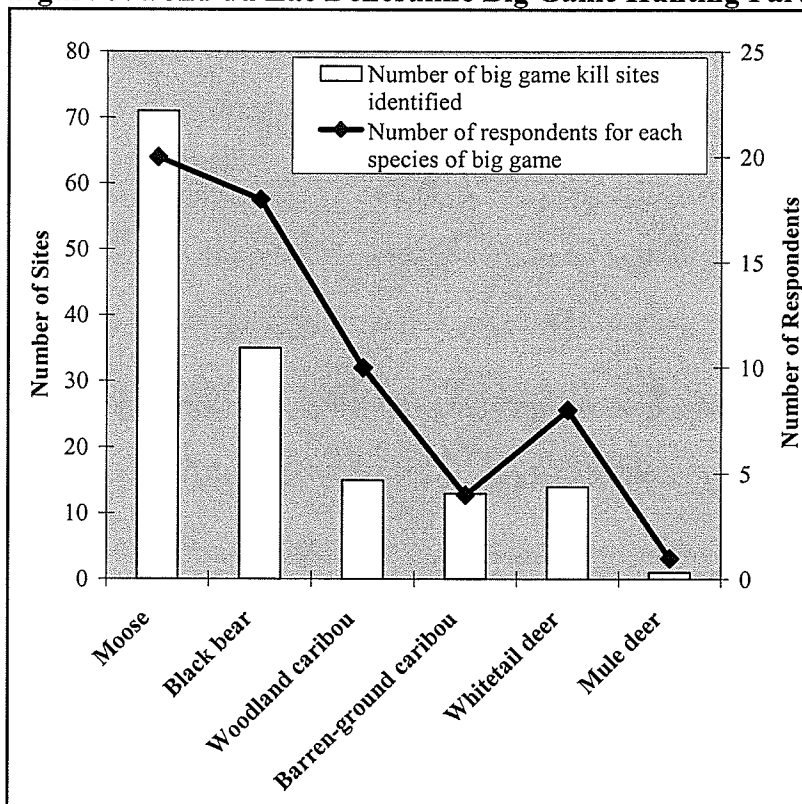
### **3.5 Big Game Hunting**

Map 4 and 5 represent caribou and big game habitat and kill sites, respectively. Habitat sites depicted on Map 4 and 5 are indicative of a wildlife sighting or tracks where a species was known to have been in a particular area. Points marked as habitat sites infer that the area is habitat to a particular species of wildlife and that areas having similar environmental conditions are also habitat. Habitat sites noted on Map 4 where a participant observed a caribou feeding or sighted a caribou species. Sightings and feeding sites are depicted on Map 5 where the participant observed a specific wildlife species or

wildlife land use activity. Interpreting the maps requires a consideration of spatial variability where a habitat area is marked as a polygon it is recognized that there are more specific habitat requirements within that polygon which characterize the needs of a particular species. For example, moose may be found more often around wetlands and bogs and caribou may frequent open canopy jack pine forest where reindeer lichen is more abundant. Within a habitat area there are preferred sites to each species of wildlife.

Figure 5 depicts the participation rates for big game hunting by species. As noted previously, hunting is the main source of food gathering and therefore is significant to the traditional economy of Fond du Lac Denesuline Nation. Participant responses indicate the region is significant moose and black bear habitat. Kill sites identified on Maps 4 and 5 and Figure 5 show moose tended to be a more favored food source than black bear.

**Figure 5: Fond du Lac Denesuline Big Game Hunting Participation**



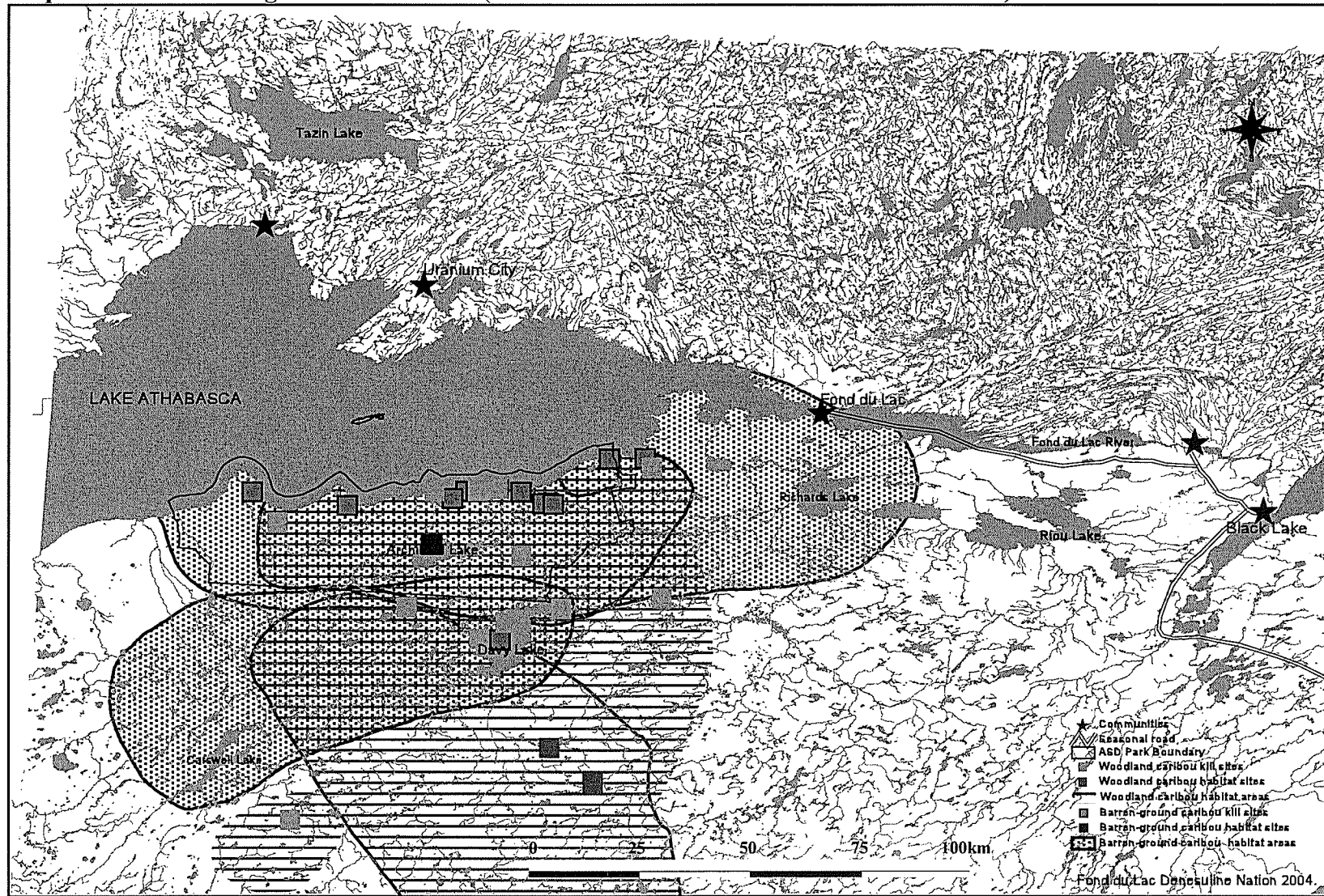
According to the partnership study, barren-ground caribou and woodland caribou have historically shared the same territory. Participants in the partnership study described food sources as similar between woodland and barren-ground caribou species. An elder from Fond du Lac Denesuline, Joe Martin said:

“Barren ground caribou and woodland caribou live together, but it hasn’t been like that for a long time now. Barren ground caribou live up north, for a long time now they lived up north. A long time ago barren ground caribou used to go all the way down to Cree Lake but it was...about 50 years ago. Because of all the fires they had a change in (how they) traveled, since the fires started in different places. Same thing for the Northwest, they could only go as far (south) as the Saskatchewan border because it was all burnt – the burnt lands” (Joe Martin from Fond du Lac Denesuline Nation 2004: 32).

Several participants indicated that forest fires north of Lake Athabasca have changed migration patterns of barren-ground caribou and their population numbers in the sand dunes region have been low to non-existent in past years (Fond du Lac Denesuline Nation 2004). The temporal variability of ecological systems is retained through observation and experience on the land which is learned and passed onto future generations thereby establishing a timeline of how people adapt to changing environmental characteristics over time.

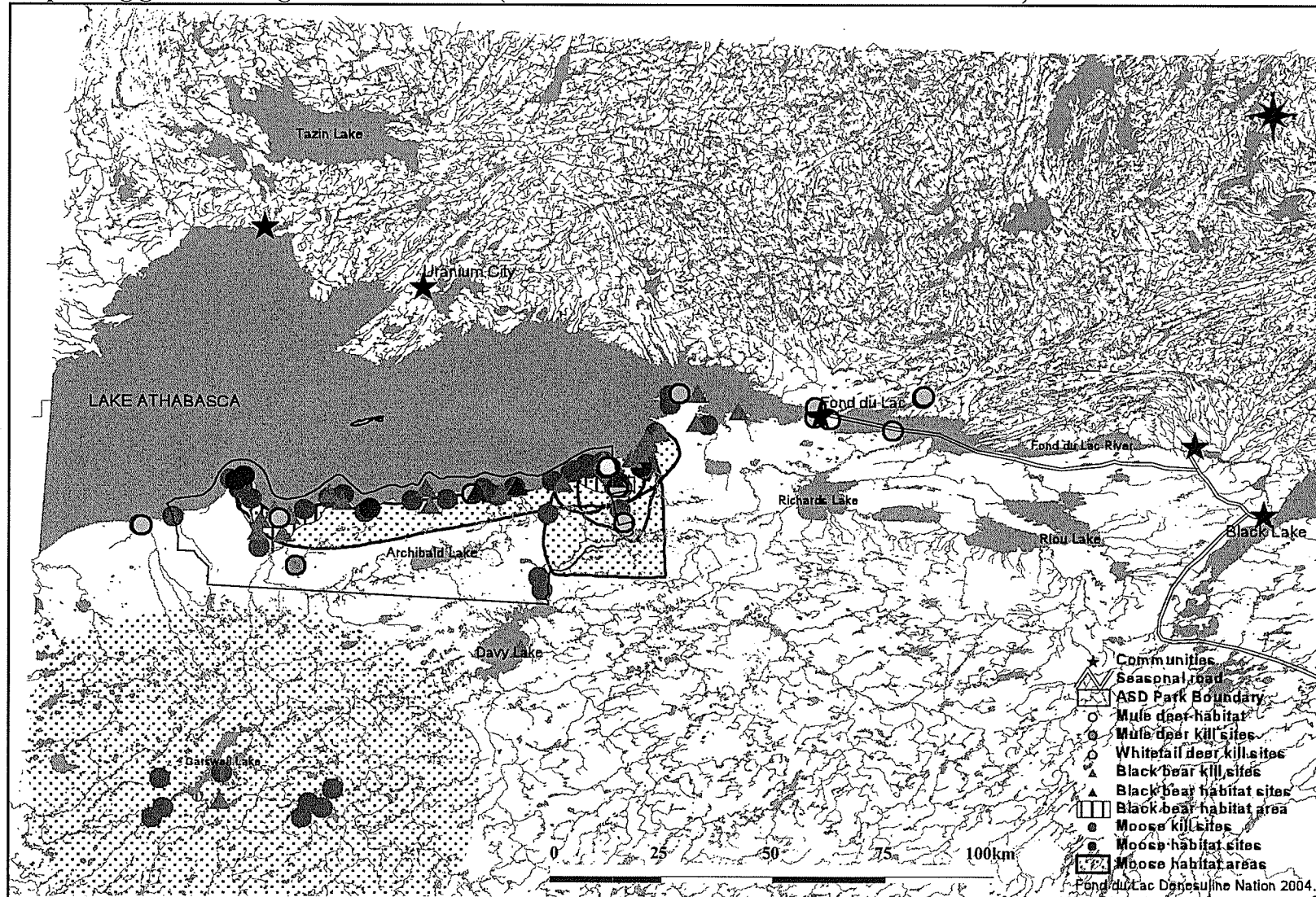
Gathering and documenting indigenous knowledge about the sand dunes region helps to establish an ecological baseline by defining and describing habitat areas and sites of significance to caribou and other wildlife species. During partnership study interviews, habitat areas such as ice crossings, feeding grounds, and breeding grounds were discussed and those features are grouped on Map 4 and 5 as habitat areas. Participant responses described habitat areas and gave an account of how wildlife use the land. Indigenous knowledge passed down through generations also described wildlife habits within their

**Map 4: Caribou hunting and habitat areas** (Source: Fond du Lac Denesuline Nation 2004: 35)





**Map 5: Big game hunting and habitat areas** (Source: Fond du Lac Denesuline Nation 2004: 42)





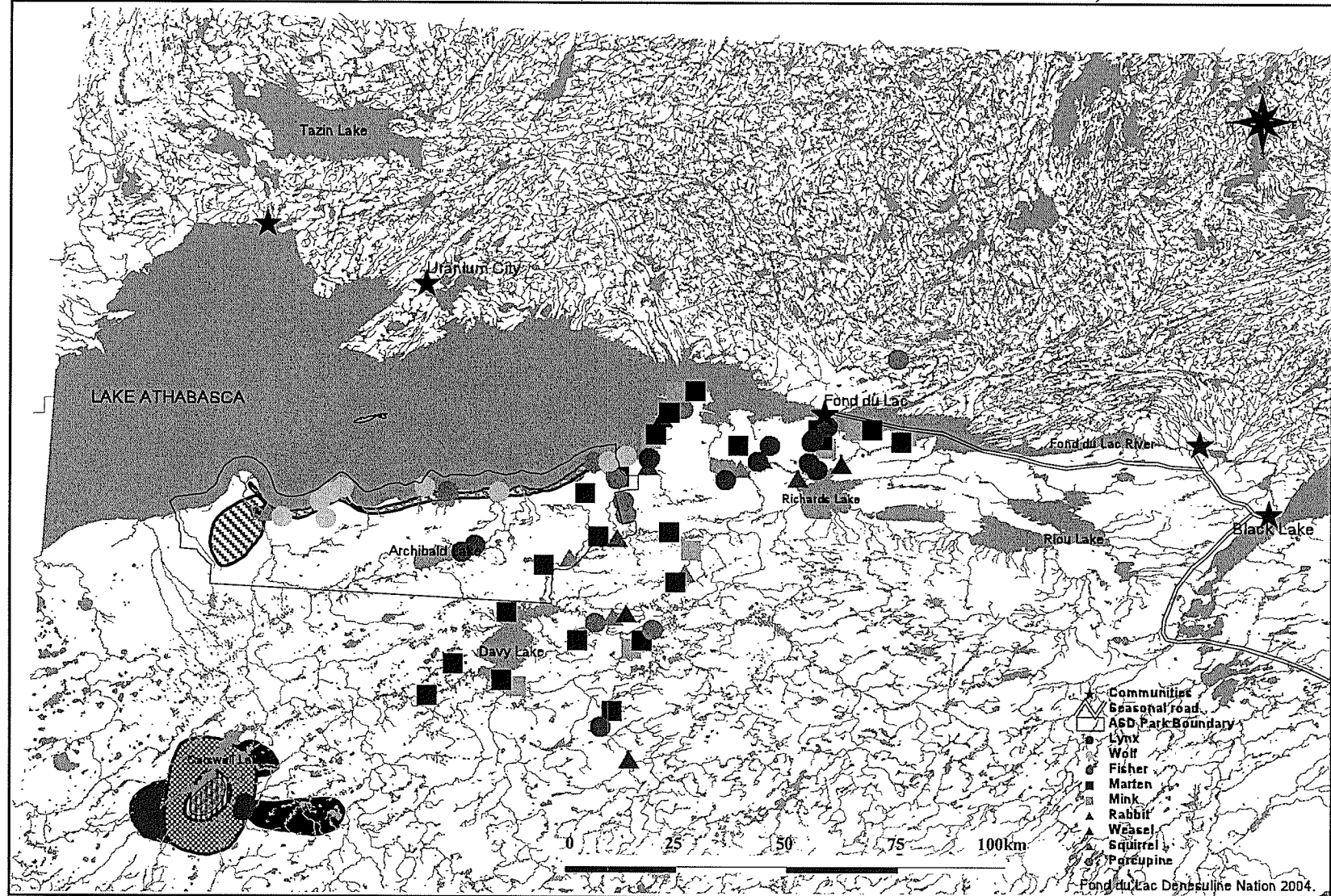
habitat. Indigenous knowledge establishes a historical ecological baseline of knowledge for comparison with current observations to note environmental change and how people and wildlife have adapted to change.

Establishing an ecological baseline is significant to the management of protected areas as making decisions about human activities in the ecologically sensitive sand dunes region would need to take into consideration the needs of wildlife and how they use the land. When indigenous knowledge is documented, digitized and analyzed it tends to lose its social, cultural, religious, economic, and political context. For an inclusive and comprehensive ecological baseline to exist Fond du Lac Denesuline need to be involved in research and the co-stewardship of the sand dunes region.

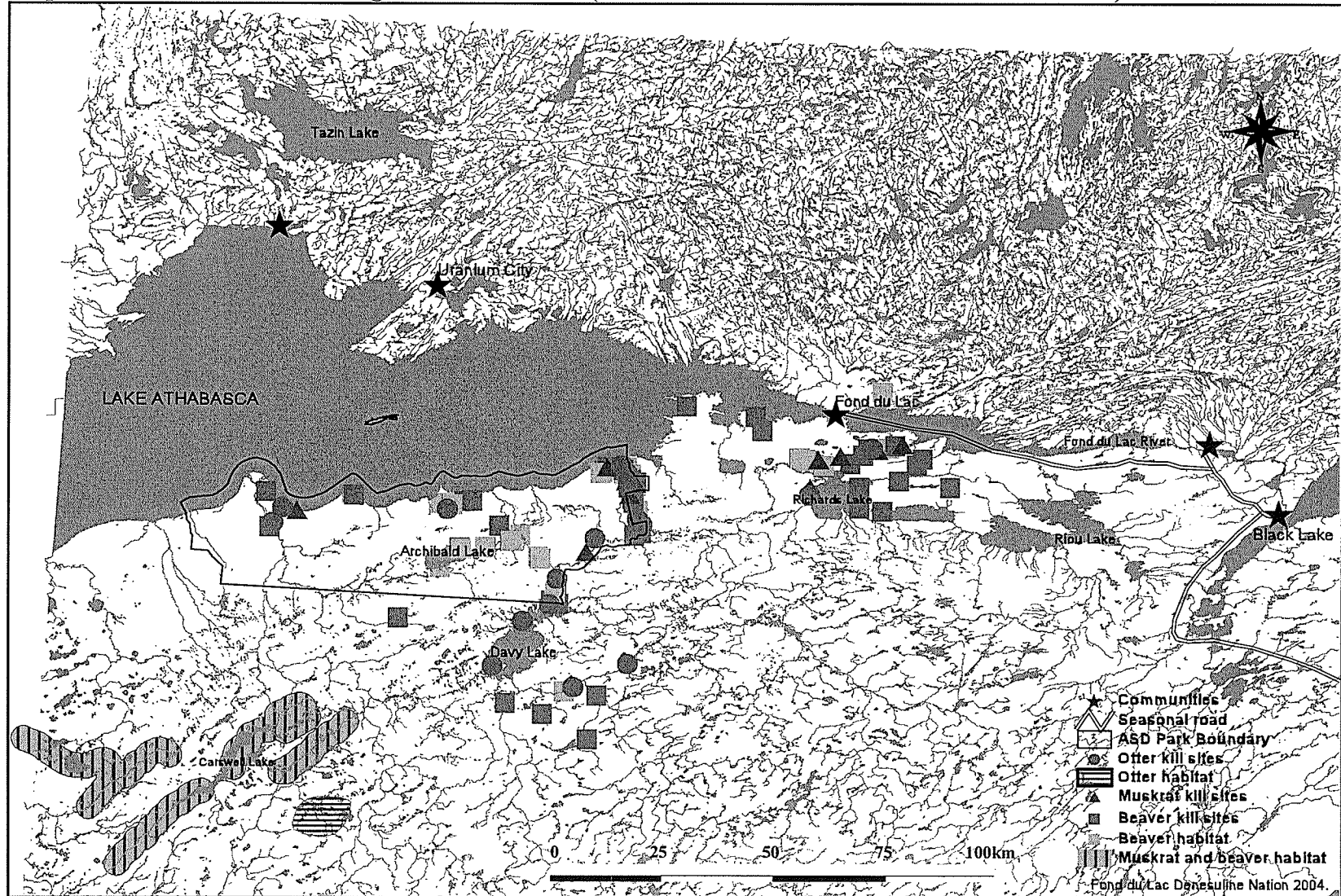
### **3.6 Furbearers**

Map 6 and 7 indicate kill sites and habitat for land and water-based furbearers, respectively. While furbearer species are most commonly trapped or snared, there are also incidences of shot being used to hunt furbearers (Fond du Lac Denesuline Nation 2004). Map 6 depicts small game (porcupine) and land-based furbearer species included in the partnership study interview guide. Feeding areas as specific habitat areas were not identified by any of the project participants therefore only kill sites are recorded. Map 7 indicates habitat sites for water-based furbearers where a specific sighting occurred. A sighting could include a beaver lodge, beaver dam, an observed feeding site, or the animal itself. Due to the nature of trapping water furbearers, many beaver dam and kill site points overlapped.

**Map 6: Land furbearers hunting and habitat areas** (Source: Fond du Lac Denesuline Nation 2004: 48)



**Map 7: Water furbearers hunting and habitat areas** (Source: Fond du Lac Denesuline Nation 2004: 52)



A kill site, hunting area, fishing ground, or gathering area is also a habitat area because the plant or animal was sighted there. Therefore, it is assumed that other individuals of the same species could be sighted at the same or similar location on a different day. Associations between species can also be made as plants and wildlife share the same habitat and there are relationships between different species. Joe Martin, a Fond du Lac Denesuline elder described a relationship between species that describes how the porcupine and the fisher share the same habitat:

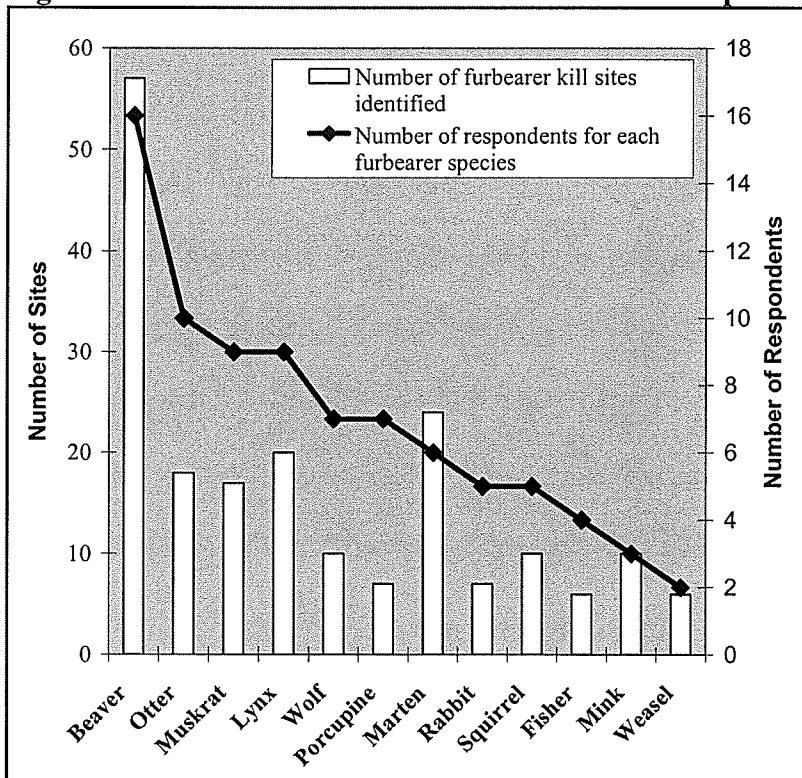
“One elder said the [fisher] kills porcupine and eats it. Now there’s no fisher or porcupine today, so where the porcupine went, the fisher followed... Porcupine go under a rock, in a hole, and live and make a trail. When a fisher finds a trail, the fisher digs up the path then goes under. The porcupine sleeps on its back, makes the quills face down. When the fisher travels the trail and suddenly meets up with it [porcupine] and kills it, the quills are of no use because the porcupine is facing up. So it [fisher] grabs it by the neck and kills it, then feeds on it. I haven’t seen it though this one elder white man told me it [fisher] lives off porcupine” (Joe Martin from Fond du Lac Denesuline Nation 2004: 45).

Looking at a literature review of wildlife species inferences can be made about many fish and wildlife based on their shared habitat needs or on individual habitat needs that exist in the same region. For example, in areas where there are beaver lodges there may also be muskrat who are using abandoned lodges. Otter and muskrat are known to occupy the same waterways as beaver because of the presence of vegetation and small fish for food. The effect of beaver activity on water levels and plant abundance can also be inferred where water flow above a dam is slowed down thereby changing the waterbed structure and increasing the accumulation of decomposing plant material. This provides a rich habitat for fish species and vegetation. Fish spawning areas are a popular feeding spot for black bears. Examples of inter-relationships between species based on shared habitat are numerous. Cross-referencing habitat types and species requirements results in

direct and indirect associations between different species and their preferred habitat which enriches the development of a comprehensive ecological baseline. Indigenous knowledge holders who practice traditional land use activities are vital to management decision-making.

Figure 6 shows the participation rates for trapping activities including small game and furbearers. As shown in Figure 6, Map 6, and Map 7 water furbearers are trapped more frequently than land furbearers. Beaver are particularly abundant in the area with fifty seven kill sites identified and the majority (80%) of participants report having trapped beaver. At present, traplines in the study area lie within fur block N-57. The Fur Conservation Allocation system to designate trapline owners was instituted by the Government of Saskatchewan in 1946. Prior to that, residents from Fond du Lac could trap without a permit. Several participants noted the large decline in fur prices over the

**Figure 6: Fond du Lac Denesuline Furbearer Participation**



last century, it is possible that the amount of effort required to trap land furbearers over water furbearers does not make it viable at the given commercial exchange. Geography is also a limiting factor to trapping on the south shore region as there are few registered traplines on the south shore of Lake Athabasca and the distance from the community would require relocation to the region.

Oral histories and map biographies of furbearer and small game habitat and kill sites provide an ecological baseline which is significant to protected areas management. Oral histories about the decline of fur prices over the last century also provided insight into the traditional subsistence economy of the Fond du Lac Denesuline. Court cases over the last two decades have made recommendations regarding the maintenance of the traditional subsistence economy as a Treaty right as at the time of Treaty signing the traditional economy was necessary to maintain the way of life (Irwin 2000). This would include the principle of reciprocity and the trade and barter system that existed at the time of Treaty signing.

Although the Natural Resources Transfer Agreement signed in 1930 was later interpreted as an exchange of commercial resource rights for rights to practice subsistence resource harvesting over a larger geographical area, there have been questions raised over the differentiation of a traditional commercial economy versus a traditional subsistence economy (Irwin 2000). The traditional economy could be interpreted as a subsistence-based economy which adapted to changing times to include some level of commercial resource rights according to changes in the economy over the last two centuries. As legal interpretations over the right to maintain a traditional economy and the definition of what a traditional economy consists of are not clearly

defined, there is a need to involve Fond du Lac Denesuline in co-stewardship of the sand dunes region to address local economic development interests.

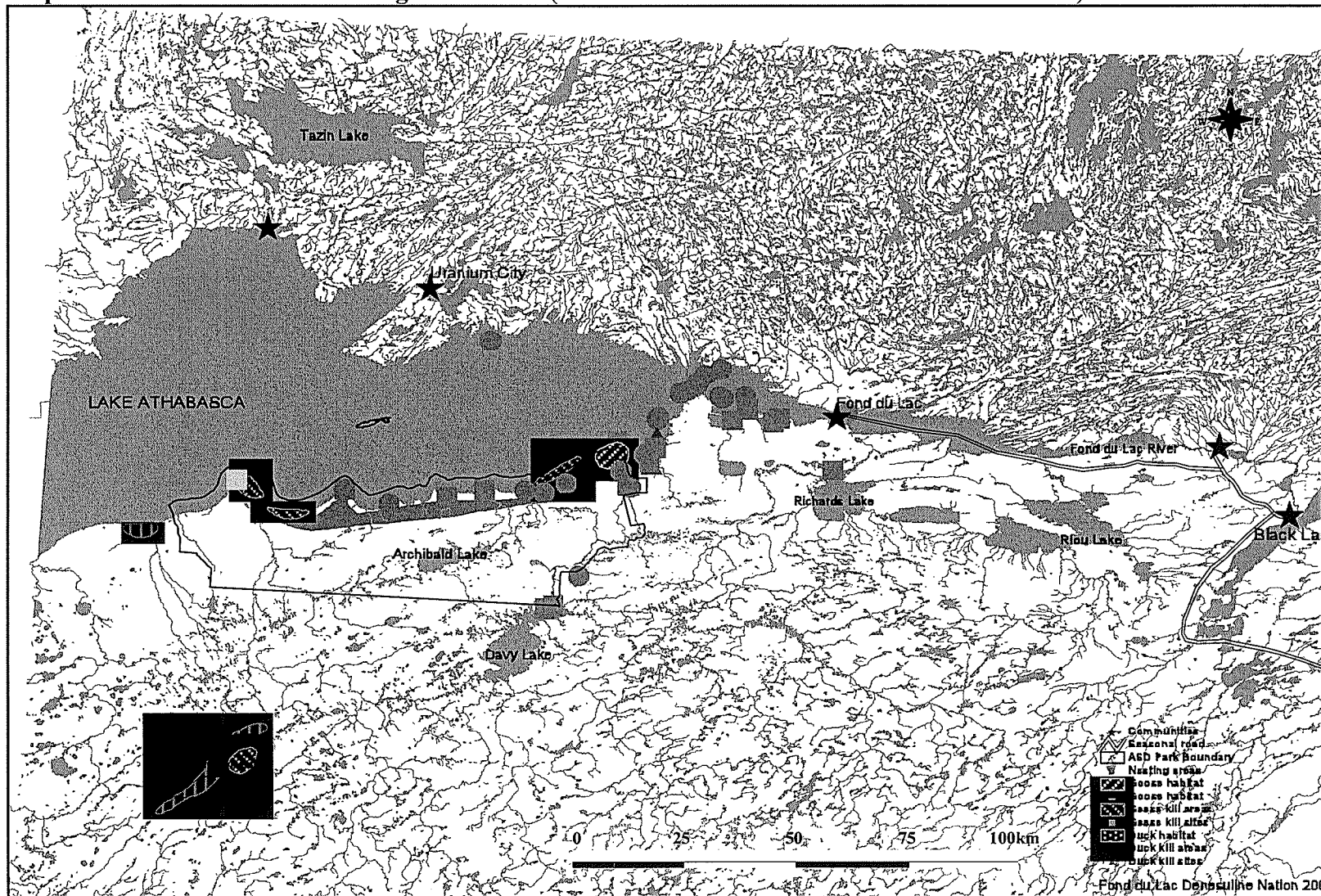
### **3.7 Waterfowl and Birds**

Map 8 indicates goose and duck hunting areas and habitat. Duck species include common loon, ring-necked scaup, lesser scaup, bufflehead, common merganser, and mallard. Twelve areas for hunting ducks (various species) and thirty two areas for geese hunting were identified. Nine participants mapped duck kill sites and sixteen participants marked goose hunting areas.

The sand dunes region is one of the northern destinations for migratory waterfowl and birds within the central flyway of North America. Participants indicated general arrival and departure times in the spring and fall and identified ten nesting areas for waterfowl (Fond du Lac Denesuline Nation 2004). An interpretation of nesting area habitat along waterways and around some islands would conclude that nesting areas must have suitable cover for nesting and sufficient vegetation and forage fish species to support waterfowl populations. The continued use of nesting areas is an indicator to shoreline and overall lake health. The inclusion of Fond du Lac Denesuline indigenous knowledge in forming an ecological baseline would assist in the co-stewardship of the sand dunes region and could also affect the co-stewardship of migratory waterfowl and bird populations through ecological health monitoring.



**Map 8: Waterfowl and bird hunting and habitat (Source: Fond du Lac Denesuline Nation 2004: 57)**





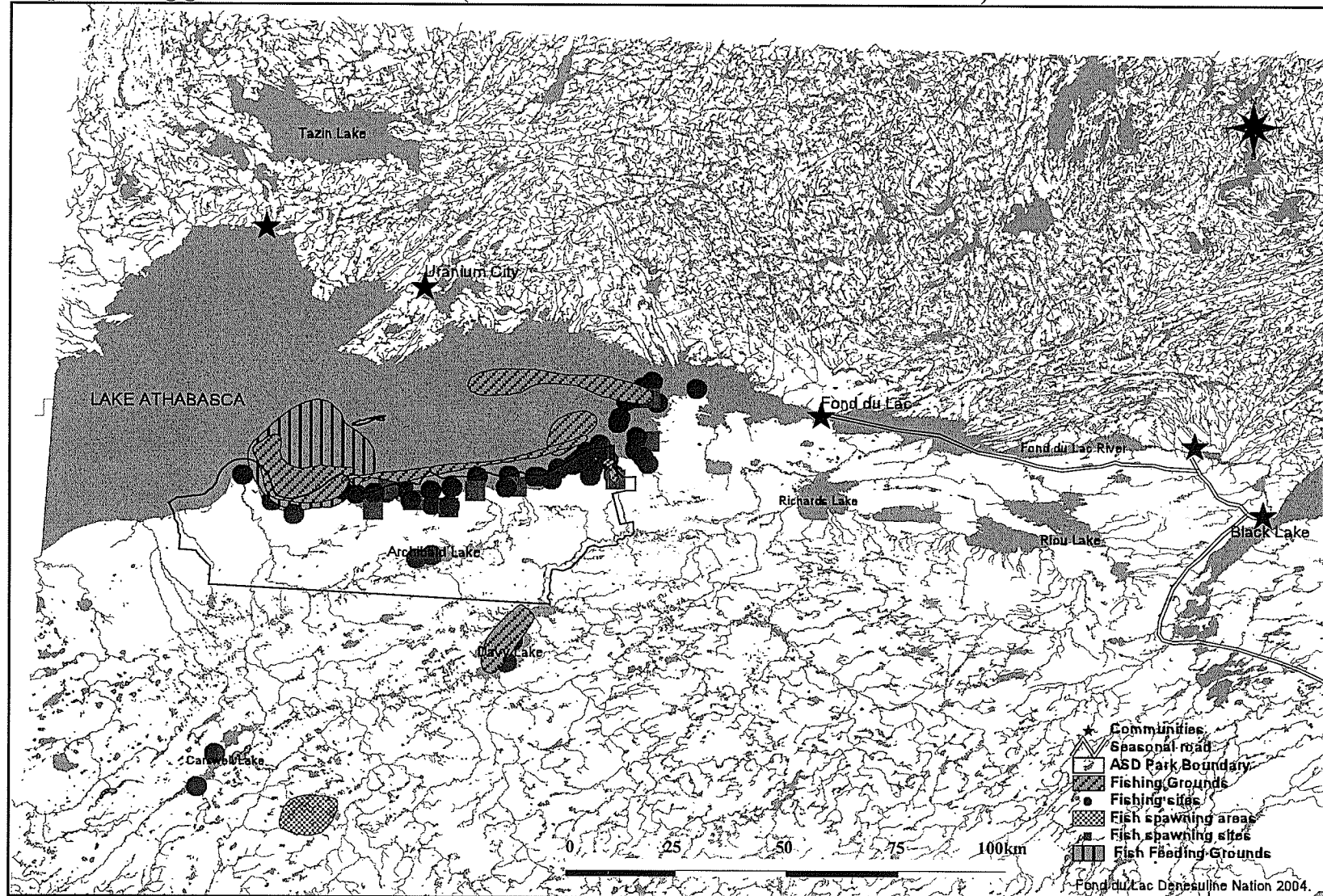
### **3.8 Fishing Grounds and Habitat**

Thirteen fish spawning areas were identified. This is significant to sustaining the fish populations in Lake Athabasca which is a major hydrological feature draining through the Slave, MacKenzie and Athabasca River systems to the Beaufort Sea. The significance of fish spawning grounds to Fond du Lac Denesuline for subsistence food and the ecological importance of spawning areas to support sustainable fish populations suggest that protection measures will assist in the long-term subsistence fishery and the survival of spawning grounds.

Map 9 identifies fishing grounds and fish habitat. Fishing grounds for all fish species include lake whitefish, lake trout, northern pike, walleye, burbot, and suckers. Fishing grounds for all fish species are recorded on the map biographies, as well as specific fishing grounds for northern pike, lake trout, lake whitefish, and suckers. Fishing grounds are significant as the success rate of fishing in a particular location is an indicator of fish population health and migration patterns. Furthermore, the health of fish populations at different locations provides insight to the health of the hydrological system as fish populations move to where there is optimal habitat.

Commercial fishing in the region began around 1929. In 1958 the provincial government opened a fish plant at Gunnar mine (near Uranium City) which operated through the 1969 establishment of the Freshwater Fish Marketing Corporation. The plant closed in 1978 due to economic pressures resulting from the collapse of the uranium industry (ALUPIAP 2003). Commercial fishermen from Fond du Lac Denesuline Nation currently transport fish to the Wollaston Lake plant and receive transportation subsidies from government agencies (ALUPIAP 2003). There is little or no commercial fishery

**Map 9: Fishing grounds and fish habitat** (Source: Fond du Lac Denesuline Nation 2004: 54)



on Lake Athabasca by Fond du Lac Denesuline, any existing commercial fishery operates on a small-scale basis. Several participants in the partnership study noted an increase in the size of fish populations. One Fond du Lac Denesuline elder stated:

“From the last 20 years on the whole lake there’s more fish all over. There’s more fish now than way back. In the past they had a fish company, they ran it for 40 years. Now there’s no commercial fishing and that’s why the fish regained their population” (Joe Martin from Fond du Lac Denesuline Nation 2004: 53).

There is a role for the involvement of Fond du Lac Denesuline in the co-stewardship of Lake Athabasca. Indigenous knowledge holders have knowledge of change over time. One factor of establishing an ecological baseline for the region includes comparisons about the size and health of fish and wildlife populations. With observations of Lake Athabasca fish populations accumulated over centuries, Fond du Lac Denesuline know the history of fish populations in the region. Lake conditions, shoreline habitat, and weather patterns all affect fish populations and observations made while fishing may contain insight to other changing ecological characteristics. Fond du Lac Denesuline indigenous knowledge holders could provide further insight to monitoring activities in the north and should be directly involved in management decision-making.

### **3.9 Concluding Observations of the Partnership Study**

Through the principles of sustainable resource use and conservation management practices it becomes evident that there are parallel objectives between protected areas management systems and indigenous management systems which signify the need for alliances to manage how people use the land. The historic under-representation of northern peoples in land and resource management and particularly protected areas

management in the north requires an increase in funding availability to northern-based organizations. Southern-based agencies with interests in the north affect the availability of funding to northern organizations to lead their own management initiatives. Similarly, southern-based agencies requesting the participation of northern residents on consultation and advisory boards capitalize on the time northern residents have to contribute to land and resource management in the north. Directing funds to northern-based organizations to lead independent management initiatives would increase the amount of time that northern residents could spend on management and decision-making by decreasing frequent trips and meetings to the south to fulfill southern-based agencies consultation needs.

Demonstrating a parallel understanding between protected areas and Denesuline management systems is evident when mapping northern Saskatchewan trail systems and considering the implications of shared territory between Denesuline bands. Shared territory and the exercise of restraint in resource harvesting is a sustainable land use practice that is based on conserving resources to share in the present and future. The principle of sustainable resource use as part of both protected areas management systems and the Denesuline management system indicates the need to involve representatives of both management systems in management decision-making.

Fond du Lac Denesuline indigenous knowledge about the trails that were historically and continue to be used for traditional land use activities delineate traditional territory. Trail networks are used to practice traditional activities such as hunting, trapping, berry gathering, traditional plant use, medicinal plant gathering, egg gathering, camping, social gatherings and ceremonial or religious events. These traditional land use activities are considered integral to the Denesuline management system as traditional

land uses assist in defining and maintaining cultural identity. As such, the maintenance of cultural identity requires a land base with which to practise traditional land use activities.

Traditional land use practices are a part of the Fond du Lac Denesuline traditional economy. Legal interpretations over the right to maintain a traditional economy are not conclusive as to the inclusion of commercial resource use in addition to subsistence resource use. To address the maintenance of the traditional economy and consider future implications of court decisions over commercial resource interests, Fond du Lac Denesuline should be involved in co-stewardship of the sand dunes region and resulting economic development initiatives.

Denesuline indigenous knowledge establishes a historical ecological baseline of knowledge which can be compared to current observations to note environmental change and how people and wildlife have adapted to change. The role of indigenous knowledge in the co-stewardship of protected areas is to improve management decision-making by drawing on a cumulative knowledge base of ecological characteristics which recognize change over time, ecological needs, and people's needs.

Through the partnership study summarized in this Chapter it is evident that the Denesuline management system exercised within traditional territory on the south shore of Lake Athabasca guides traditional land use practices which are significant to maintaining Fond du Lac Denesuline cultural identity. The conservation of lands for the future coincides with the maintenance of traditional land use practices and the Denesuline management system. As the Denesuline management system is a pre-existing management system there is a clear rationale to involve Fond du Lac Denesuline in management decision-making.

## **Chapter 4: Indigenous Knowledge and Protected Areas Planning and Management**

The role of indigenous knowledge for the co-stewardship of protected areas in Saskatchewan provides a case study applicable to protected areas management systems and co-stewardship arrangements in other regions of Canada. Recognizing parallel objectives to protect lands for future generations, resource managers and indigenous peoples become co-stewards of the land. Understanding the content and context of indigenous knowledge requires the involvement of indigenous peoples in protected area management systems. This Chapter will review the historical and contemporary climate of protected areas in Canada and will link international directives with Aboriginal world views to provide a rationale for the involvement of Fond du Lac Denesuline Nation in co-stewardship within Saskatchewan. A review of management arrangements and limitations will be considered in developing conclusions about the role of indigenous knowledge and traditional uses of the land in co-stewardship for Saskatchewan.

The establishment of wilderness lands for protection in local, provincial and national contexts initiates debates over what the term 'protection' constitutes. There are many forms of protected areas represented in Canada such as world heritage sites, international biosphere reserves, national parks, national historic sites, national marine protected areas, provincial wilderness parks, provincial natural environment parks, provincial recreation sites, provincial historic sites, local conservation and nature areas. Each type of protected area designation relies on the concepts of preservation or conservation to guide the management of some natural, historical, or cultural resource and the relationship between people and that resource.

It is necessary to make the distinction between conservation and preservation clear. Preservation describes the "...non-use of a resource and non-interference with the process of nature" (Notzke 1994: 229) whereas conservation describes the protection of resources coinciding with the sustainable use of resources. The sustainable use of resources implies some form of management as the exercise of restraint to conserve resources for the future. Indigenous management systems also demonstrate the principle of sustainable resource use as discussed in the previous chapter. The International Union for the Conservation of Nature (IUCN) gives a broad definition of a protected area as "an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (IUCN 1994: 7). The IUCN introduced categorized definitions and guidelines for protected areas which do not explicitly describe the rights, responsibilities and roles of local people in protected areas management systems (Oveido et al. 1999). The term 'protected indigenous territory' was referred to within the IUCN protected areas definitions and guidelines (ibid.).

#### **4.1 World Views and Conservation**

Consulting the Aboriginal world view through indigenous knowledge as native science "synthesizes or gathers information from the mental, physical, social and cultural/historic realms" (Colorado 1988: 3). Defining a Nation's world view is difficult to put into words because the world view is taken out of the context needed to understand and learn the world view. A collective identity is formed through Aboriginal world views through which an individual builds their own identity. As the collective and the

individual identity are inherently linked, it becomes difficult to define an Aboriginal world view or the Fond du Lac Denesuline world view. However, a limited understanding can be achieved by looking at indigenous management systems and indigenous knowledge about the land.

Indigenous knowledge as part of a world view includes narratives about how people should behave, about relationships between people and animals, and about the social order and its workings (Cruikshank 1991). Indigenous knowledge emphasizes the relationship between a particular place for a particular group of people (ibid.) This is important on an individual level where an individual's world view forms their perception and gives meaning to their observations of the environment (Berkes 1999).

Indigenous management systems as part of a world view encompass knowledge about the land and resources and the social institutions that govern people's use of those resources (Berkes 1999). Social institutions develop rules about resource use which are enforced by people and supported by narratives and experience. Sustainable resource use within the Fond du Lac Denesuline indigenous management system is exemplified through oral histories describing shared territory and the required exercise of restraint necessary to share land and resources. The results of the partnership study demonstrated the principle of sustainable resource use as taking only what is needed from the land for survival. This is part of the Fond du Lac Denesuline world view.

The teachings and beliefs that support sustainable resource use practices within a formal or informal social institution are stored and shared as indigenous knowledge. As recognized in Chapter Three, the documentation of indigenous knowledge about the land cannot be inclusive of the social, religious, political, economic and ecological context



needed to fully understand indigenous knowledge. For Fond du Lac Denesuline involvement in the co-stewardship of protected areas to be successful, there must be involvement of people, their knowledge and their ways of living.

Cultural significance can be interpreted in many different ways. It would include the use of the land and resources for ceremonial purposes as religion, spirituality, and belief. It would also include archeologically and historically important extrinsic cultural factors. A broader perspective would interpret cultural significance as any land use or activity that is important to maintaining Fond du Lac Denesuline cultural identity. This could include traditional land use activities, methods of resource use, and knowledge of resources and the land. Traditional activities such as hunting, fishing, trapping, gathering, fishing, cooking, sewing, and healing may all be considered activities having cultural significance which maintain cultural identity. These traditional activities are part of the Fond du Lac Denesuline world view.

The Fond du Lac Denesuline world view and ecology are inherently linked. In the sand dunes region, twelve medicinal plant gathering areas were noted by eight respondents. Large polygons marked where medicinal plants were gathered and included the entire south shore as a sacred area where medicinal plants could potentially be harvested. Several participants concluded their interviews by responding that all the land is sacred, not just one part or another (Fond du Lac Denesuline Nation 2004). The cultural significance of medicinal plants goes beyond ecological interests to include the maintenance of religion and medicine as important aspects of the land. "An assertion of aboriginal rights or title may be an effective method of preventing industrialization of wilderness areas required for the practice of native religion" (Woodward 1989: 339f from

Notzke 1994: 230). A conclusion could be made that the practice of religion and healing as a part of indigenous knowledge requires a land base to be practiced, understood and learned by future generations. Therein lies a significant rationale to involve Fond du Lac Denesuline in the co-stewardship of protected areas management.

Historic sites such as the encampment noted on the east bank of the McFarlane River provide evidence of historic and continued occupancy as the area continues to be used to camp. The traditional land uses carried out in the region include hunting, trapping, gathering and fishing. The partnership study identifies the area as historically and socially significant to the community. Furthermore, the ecological significance of traditional resource use activities provides a baseline of information on species habitat, population size and health. An accumulation of observations and experiences over a large temporal scale demonstrates the ecological and cultural significance of the region to Fond du Lac Denesuline Nation.

Sustainable resource use and conservation practices are a part of both Fond du Lac Denesuline indigenous management systems and protected areas management systems. The parallel objectives of both systems suggest that individuals and organizations representing both systems be involved in management as co-stewards of the land. Recognizing that Aboriginal world views and cultural identity are much larger than indigenous management systems and indigenous knowledge about the land implies that there are differences between both protected areas and indigenous management systems. A step in the direction of successful co-stewardship for Saskatchewan would acknowledge that all traditional land use activities are culturally significant.

#### **4.2 International Context of Conservation, Sustainable Development and the Involvement of Aboriginal Peoples**

The parallel objectives between protected areas management systems and Fond du Lac Denesuline world views draw on the principles of sustainable development and conservation. Indigenous management systems practiced by Fond du Lac Denesuline historically demonstrated sustainable resource use which has continued to present day. The management practices and parallel objectives to ensure there is enough resources for future generations provides a rationale to involve Fond du Lac Denesuline in protected areas management which is supported by international directives.

The term 'sustainable development' was introduced by the World Conservation Strategy in 1980 and the World Commission on Environment and Development in 1987. The World Commission on Environment and Development (WCED) defined sustainable development as "...development that meets the needs of the present without compromising the ability of further generations to meet their own needs (WCED 1987: 43). Further to discussions on sustainable development the 1987 Brundtland Report "...acknowledged the contribution which Aboriginal people are able to make in this area and endorsed Aboriginal self-government with regard to natural resources" (Notzke 1994: 4).

The concepts of conservation and sustainable use of resources through a management perspective goes beyond historical models of climax communities and ecological equilibrium, now deemed as false scientific truths. The newer non-equilibrium models recognize nature as being in an ever-changing state (Gomez Pampa et al. 1992). This is exemplified in the United Nations Environment, Science and Culture Organization's (UNESCO) International Biosphere Program designed to foster

comparative research around a protected core of undisturbed wilderness, surrounded by buffer zones of limited use where local communities practice resource use and multiple use zones where larger scale resource uses may occur. The impacts of resource use are measured by comparing use zones with zones of greater protection (Slocombe et al. 2002). Considering the evolution of thought on protected areas to include sustainable resource use by local communities, there needs to be a shift in management arrangements to include resource users.

Agenda 21 of the United Nations Conference on Environment and Development, Rio de Janeiro, (1992), states participation and support by local communities as key to conserving biodiversity. The objectives of the statement are to ensure shared benefits of biodiversity conservation and to recognize the value of indigenous knowledge and management systems held by indigenous peoples. The objectives are to be met through planning, policy development and management strategies. The data and information clause of the Agenda calls for indigenous participation and support in collecting data and developing methodologies to evaluate social, economic, and ecological factors of biodiversity conservation (Guruswamy et al. 1994). This international directive supports Aboriginal involvement in planning and management of lands and resources.

Furthermore, the World Health Organization has a mandate "...to form partnerships with the conservation movement to ensure adequate quantities of medicinal plants are available for future generations" (Akerele 1995: 79). Clearly the directions of the United Nations and the World Health Organization can be considered as symbiotic. In order for medicinal plants to be conserved there needs to be recognition of their cultural and ecological significance. The recognition of cultural significance alongside and equal

to ecological significance would increase Aboriginal participation and support in planning, policy making and management.

Involving Aboriginal people in management of lands and resources is supported in the Report on the Royal Commission on Aboriginal Peoples (1996). Recommendations made through RCAP call for the Government of Canada to renew partnerships, strengthen Aboriginal governance, and support strong Aboriginal communities, people and economies (RCAP 1996). RCAP recommendations apply to the provincial government as the Natural Resources Transfer Agreements of 1930 transferred ownership and responsibility of lands and resources from the federal government to the provincial governments (Tough 1995). This leads to an assumption that the federal government's fiduciary responsibility to Aboriginal peoples in Canada affects policy and decision-making within the Government of Saskatchewan.

Political agencies spanning from First Nations organizations, the Canadian government, provincial governments and international organizations have recommended similar actions to include indigenous peoples in land and resource management while highlighting the importance of land and knowledge to the maintenance of culture. Specific recommendations to the form of management required to facilitate inclusion are varied although the underlying theme is cooperation and collaboration. With political pressures, legal imperatives, and economic growth in mind, recommendations to improve existing management systems are a product of adaptive management rather than a criticism of individuals and the organizations they represent.

### 4.3 Historical Context of Protected Areas in Canada

Resource use has changed over time and can be appreciated in its temporal context by looking at resource use prior to European arrival, during European colonization, and during contemporary times. Prior to European arrival, the land was viewed as inherently connected to people and there existed a reciprocal relationship to nature where people were not separated from the land they depended on (Notzke 1994). This does not mean that Aboriginal peoples did not use the resources of the land, but that land use was governed by indigenous management systems. Indigenous management systems regulate traditional land use practices and provide informal rules which are guided by Aboriginal world views.

During the period of European state-building between 1500 and the mid-1800's the relationship between Aboriginal peoples and the land changed (Mann 2003). It was during this period that traditional Aboriginal world views were marginalized by a European capitalist view (ibid.). Cooperative working relationships between Aboriginal people and colonialists formed to facilitate the fur trade and to secure military allies with Aboriginal Nations until the end of the War of 1812 and the Confederation of Canada in 1867. When colonialists established new colonies for trade, expansion, and settlement, the idea of an individual holding private property conflicted with traditional Aboriginal world views of collective land ownership (Bishop 2003). In the political realm there was also a shift in government policy towards assimilation, disempowerment and enfranchisement beginning with the Francization policies in the 1700's. Questions of land tenure and government policy caused the deterioration of the relationship between the new immigrants and Aboriginal peoples (Mann 2003). This is exemplified through the

historic treaty negotiation process and the shift in the economic base away from the fur trade during the mid to late 1800's.

With the continuing marginalization of traditional Aboriginal world views and the rise of a European-based political-economic system there was a gradual emergence of conservationist thinking. At the onset of the conservation movement in the late 1800's, conservation was thought of as development for the benefit of people (Burton 1972). Gifford Pinchot, then director of the United States Forestry Service was not opposed to development but to the over-exploitation of forest resources (ibid.). The conservation movement crossed the border about ten years later and Canada held its first Canadian Forestry Convention in 1906 which focused on forest ownership, protection, management and education (ibid.). A larger North American Conservation Conference was held in 1909 which resulted in the creation of the Commission of Conservation in Canada. The role of the Commission served as a forum for discussion on development issues and debates about natural resource policy and management (Burton 1972). The Commission operated between the years of 1909 to 1921 when it was decommissioned due to accusations of jurisdictional overlap in research and policy formation.

A result of the conservation movement, largely headed by politicians and scientists, was the establishment of the world's first national park in the United States in 1872 through the *Yellowstone Park Act* (Lane 2001). The purpose of the park was to "...protect the unique features of the area and ... to provide for public access and use in the form of recreation and tourism" (ibid.: 662). The intent of setting aside lands for national parks was to conserve lands by preventing their over-exploitation so that people would have a place to recreate.

In 1887 Canada established the Rocky Mountain National Park, now known as Banff National Park. The Canadian federal government consulted national parks and notably the Arkansas Hot Springs in the United States on how to form national parks however at the time there was an insufficient management system in place with no legislated backing (McNamee 2003). Thus, the Canadian government created the *Rocky Mountain National Parks Act* of 1887. The *Act* had a similar objective to Yellowstone Park in the United States and it assisted the Canadian government in managing and establishing new parks. The *Rocky Mountain National Parks Act* stated the land was “reserved and set apart as a public park and pleasure ground for the benefit, advantage, and enjoyment of the people of Canada” (McNamee 2003: 27). In short, the primary objective of the park was to provide recreation and tourism opportunities in the hopes of drawing people to the west (Francis 1992).

With the completion of the Canadian Pacific Railway, the Canadian government wanted to encourage settlement and to promote a growing tourism industry in the west. Railway passengers would stop in Calgary and Banff and would be entertained by Indian peoples who were seen as a tourist attraction (Francis 1992). Particularly Canadian and foreign artists would go west to record the history of the west before the Indian culture became extinct (ibid.). The images portrayed within the media during this time perpetuated images of Indian peoples as forest gods, savages, and noble warriors (ibid.). Perpetuated images of Indian culture led to a new branch of the conservation movement during the 1920's where groups such as the Woodcraft Indians for boys and the Campfire Girls (now Boy Scouts and Girl Guides) were started by Ernest Thompson Seton (ibid.). The popularization of perpetuated images of Indian culture and its values propelled the



popular idea for people to establish personal relationships with the outdoors and the need to set aside land for recreation was created. The establishment of protected areas satisfied the need for people to recreate and enjoy nature which was largely influenced by perpetuated images of Indian culture.

Preservationist thinking took a more prominent role in the Canadian landscape when the federal government held its first National Wildlife Conference in 1919 to discuss how to best preserve Canada's wildlife (Burton 1972). The decline in beaver populations and the extinction of the Plains buffalo in the 1800's, industrial developments such as timber, agriculture and mining, the arrival of new immigrants to western Canada, and increased needs to facilitate recreation and tourism opportunities were concerns that incited discussion about preserving lands in Canada. In 1930 the *National Parks Act* was passed and in addition to the earlier Rocky Mountain National Parks Act the preservationist perspective was included as "... such parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations" (McNamee 2003: 29). This version of the *Act* did not allow for the maintenance of traditional subsistence resource use by local peoples (ibid.).

The establishment of national parks in northern Canada is more recent and was initially met with opposition from Aboriginal peoples. National parks in northern Canada and in the international landscape have historically been viewed as oppressive development where foreign values negatively impact local livelihoods and ways of life (Borrini-Feyerabend 1999). "In response, the government amended the *National Parks Act* in 1976 to ensure that the right of Aboriginal people to continue to pursue fishing, trapping, and hunting for subsistence purposes was upheld" (McNamee 2003: 31). The

comprehensive land claims procedure, which was developed under then Minister of Indian Affairs, Jean Chretien, also responded to the concerns of Aboriginal peoples in the north. Through the settlement of land claims in the north and changes to federal policy regarding subsistence land use guided by indigenous management systems, new northern parks were established – Aulavik (1992), Vuntut (1993), Wapusk (1996), Tuktut Nogait (1998), Sirmilik (1999), Quttinirpuaq (1999) are some of the recent agreements (McNamee 2003). All of these northern park agreements involve varying levels of First Nation, community, industry and government collaboration.

#### **4.4 Current Management Goals of Protected Areas in Canada**

The most recent repeal of the *Canada National Parks Act* took place in 2000 when Parks Canada Agency revised its mandate to include the concepts of ecological integrity and ecosystem management. According to the *Canada National Parks Act* “ecological integrity means, with respect to a park, a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes” (Government of Canada 2000: internet). The *Act* states:

- “4 (1) The national parks of Canada are hereby dedicated to the people of Canada for their benefit, education and enjoyment, subject to this Act and the regulations, and the parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations.
- 8 (2) Maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the first priority of the Minister when considering all aspects of the management of parks.”  
(Government of Canada 2000: internet).

The *National Parks Act* prescribes a preservationist perspective to the management of national parks. More recently, the *Canada National Marine Conservation Areas Act* builds on the preservationist perspective to include sustainable resource use. The *Act* states:

- “4 (1) Marine conservation areas are established in accordance with this Act for the purpose of protecting and conserving representative marine areas for the benefit, education and enjoyment of the people of Canada and the world.
- 4 (3) Marine conservation areas shall be managed and used in a sustainable manner that meets the needs of present and future generations without compromising the structure and function of the ecosystems, including the submerged lands and water column, with which they are associated.”  
(Government of Canada 2002: internet).

The inclusion of sustainable resource use within a marine protected area promotes the idea of sustainable resource use as a conservation practice and recognizes the parallel objectives between protected areas management systems and Aboriginal world views.

The first protected area established in the area now defined by political boundaries as the province of Saskatchewan was a national waterfowl refuge established at Last Mountain Lake in 1887 (Burton 1972). Each province began establishing protected areas under various designations following the introduction of the national parks concept in North America during the late 1800's. The first provincial parks in Saskatchewan were designated in 1931 after the ownership of natural resources was transferred from federal jurisdiction to provincial jurisdiction. Cypress Hills, Moose Mountain, Duck Mountain, Good Spirit, Katepwa Point and Little Manitou Provincial Parks were created at that time (Wood 2004). In 1957 Little Manitou ceased to be a provincial park although it remained a tourist destination. When the Government of Saskatchewan restructured and revamped its protected areas program, Katepwa Point was classified as a recreation site, whereas

the remaining parks became natural environment parks. The most recent provincial park designation in Saskatchewan was the Athabasca Sand Dunes Provincial Wilderness Park designated in 1992. The Representative Areas Network is a new program which has attempted to designate new protected areas in the north, but has met with opposition from Aboriginal communities.

The *Government of Saskatchewan Parks Act*, Chapter P-1.1 (2000) incorporates recreation and preservation objectives within its mandate. The 2000 amendment of the *Saskatchewan Parks Act* states:

- “3 (1) Park land is dedicated to the people of Saskatchewan and visitors to Saskatchewan for their enjoyment and education.
- 3 (2) The natural, prehistoric and historic resources of park land are to be maintained for the benefit of future generations.
- 5 (2) Protected areas are to be used primarily for the protection and preservation of their natural, prehistoric or historic resources of interest or significance” (Government of Saskatchewan 2000: 4).

The *Saskatchewan Parks Act* outlines the protection of resources for conservation purposes by designating areas of land for protection. Designations include historical, heritage, and ecological resources as recreational, natural environment, wilderness and historic parks. The *Act* gives ministerial authority to designating protected areas, prescribing categories for zoning, defining the uses permitted, administration and disposition of such areas, and enforcement (Government of Saskatchewan 2000). The existing Athabasca Sand Dunes Provincial Wilderness Park was designated through the *Saskatchewan Parks Act*.

#### 4.5 Protected Areas Legislation and Policy Considerations in Saskatchewan

The *Saskatchewan Parks Act* does not formally recognize Aboriginal or Treaty rights to hunt, fish, and trap for subsistence purposes (Government of Saskatchewan 2000). Saskatchewan Environment's proposed management strategy for the Athabasca Sand Dunes ensures Aboriginal and treaty rights to hunt, fish and trap are not affected by park designations, although there are limitations to the construction of any facilities including traditional resource use facilities such as trapping cabins, fishing weirs, and other out-buildings. The strategy also indicates that should any Treaty Land Entitlement process be opened in the region, land within the park is open to selection (Saskatchewan Environment 1994).

Within either the *Heritage Property Act* or the *Parks Act* there is no mention of overlapping jurisdiction where a heritage property may be designated within a protected area. The *Heritage Property Act* amended in 1993 outlines Crown and municipal heritage property and processes for designating heritage property. Related to property designation, there is also substantial discussion of the objection appeals process for designation procedures and the exchange of title on registry (Government of Saskatchewan 1993). The conservation of heritage properties as resources, and permit systems for investigation, ownership, use and dispositions are covered within the *Act* if the heritage property is designated as Crown property (ibid.). Where the heritage property is designated as municipal property, either non-governmental, private or other agencies develop and implement management of the resource.

The *Heritage Property Act* is difficult to apply to northern landscapes due to its complex procedure and the requirement to submit a heritage property designation

application on behalf of a Municipal Review Board. Subsequent approval also rests on consultation within the municipality. The irrelevance of the *Act* to northern Saskatchewan is in the case where a heritage property is located within the northern administrative district covering approximately half of the province and including forty six communities. Given archeological evidence on the south shore of Lake Athabasca and the historic encampment noted in the MacFarlane River the *Heritage Property Act* would not facilitate the designation and protection of the site. Indigenous knowledge which documents the historic and continued use and occupancy of the sand dunes region describes traditional land uses which have been practiced in the region for centuries. As traditional land use activities are culturally significant but are not necessarily evidenced by extrinsic remains there is no suitable measure available to protect culturally significant lands as heritage property. Subsequently, the value of culturally significant lands in maintaining cultural identity and providing food for survival cannot be protected through the *Heritage Property Act* because there is not a physical structure or artifact to represent heritage property.

The *Heritage Property Act* states that human skeletal remains dating after 1700 A.D. must be made available to the nearest Indian Band Council following scientific examination. However, every archeological object or vertebrate paleontological object found in or taken from land in Saskatchewan on or after November 1980 is deemed property of the Crown (Government of Saskatchewan 1993). There is no mention of the protection of archeological artifacts within the *Saskatchewan Parks Act*, although there is mention of historic site protection for existing physical structures. Resolving issues over the ownership of archeological artifacts may assist in protecting them from development.

While the *Saskatchewan Parks Act* is exclusive of public involvement, there is a legal and a moral right to involve the public in management. Saskatchewan Environment formed a Public Involvement Working Group in 1997 to form a public involvement policy framework for environmental and resource management. The general policy statement outlines the role of the government to “provide consolidated, consistent, quality opportunities for the public and stakeholders to participate in appropriate activities related to the environment and resource management” (Saskatchewan Environment 1997: 6). Within Saskatchewan’s public involvement framework, there exists a hierarchy of definitions according to the levels of public involvement in a cooperative agreement.

Saskatchewan’s public involvement framework includes education, information exchange, consultation, partnership, co-management, and delegation (Saskatchewan Environment 1997). Education, information exchange, and consultation involve the public by asking for input which is considered in government decision-making. Partnerships are a formal or informal means to build relationships between government and one or more parties to achieve a common goal as a cooperative alliance rather than a legal relationship where liability is assumed, some level of responsibility, planning and decision-making is shared, including ownership of the process/product (Saskatchewan Environment 1997). Co-management expands the involvement in planning and decision-making through a cooperative arrangement to manage lands and resources through the establishments of boards or councils (*ibid.*). Delegation is full or partial delegation of authority and sharing of responsibility to another level of government, stakeholders, or the public (*ibid.*).

The *Saskatchewan Environment Public Involvement Policy* formed in 1997 has no ministerial authority and the level of participation is dependent on the government led process. The *Public Involvement Policy* provides a mechanism to negotiate partnerships and cooperative management arrangements. A significant issue of the policy is that it makes no distinction between stakeholders where Aboriginal peoples have legal rights beyond that of other stakeholders due to historic and contemporary agreements between Aboriginal peoples and the federal government. In response to this, in 1999 Saskatchewan Environment formed an *Aboriginal Affairs Policy*.

The *Aboriginal Affairs Policy* is a statement of intent which is not legally binding. The general policy statement is "...achieving sustainable environment and resource management in Saskatchewan depends upon direct and meaningful involvement of Aboriginal people in environment and resource management decision-making" (Saskatchewan Environment 1999: 4). The policy mandates include directions to improve relations with Aboriginal communities; encourage partnerships in environmental protection, renewable resource management, and policy formation; develop and promote capacity building programs; build equitable participation in government departments; and to work within current jurisdictional and legislative frameworks (Saskatchewan Environment 1999).

The *Aboriginal Affairs Policy* affects the *Saskatchewan Parks Act* by a set legal precedence which is based on previous case law and the Canadian Constitution. Section 35 of the Constitution Act of 1982 recognizes Aboriginal and treaty rights to hunt, fish, and trap for subsistence purposes (Ospina 1999). In Saskatchewan, Aboriginal peoples have Treaty rights in all unoccupied Crown lands, provincial lands are considered



occupied lands however Aboriginal and Treaty rights are exercised in most provincial parks except along road corridors where hunting is prohibited for purposes of public safety. Supreme Court of Canada *Delgamuuk'w* (1997) indicated provisions for Aboriginal peoples to be involved in land and resource-based decision-making based on the acknowledgement of Aboriginal rights (Ospina 1999). Although the *Saskatchewan Parks Act* does not require Aboriginal involvement through the *Aboriginal Affairs Policy*, the policy was developed to address the legal and moral obligations of the provincial Crown.

Saskatchewan Environment's proposed management strategy for the Athabasca Sand Dunes Provincial Wilderness Park describes a partnership framework and zoning plan. The partnership framework is proposed as a government led initiative. The framework outlines committee membership as 50:50, rules and procedures for operating, finances, and a list of issues for which the partnership committee would provide recommendations (Saskatchewan Environment 1994). A comprehensive list of issues includes: camping, hiking, canoeing, boating, angling, private sector development, guided tours, snowmobiles, natural features, historic features, media and marketing, education, facilities, signage, water, trees, plants, fire management, net fishery, subsistence fishery, fish and wildlife outfitting, trapping, moose, woodland caribou, piping plover, colonial nesters, raptors, mineral exploration, Denesuline, trapping cabins, navigation beacons, water survey shed, air access, boat access, litter from ATV's and debris, winter road, office, maintenance, patrol cabin, design and signing, park boundaries, staff, and budget (*ibid.*). Recommendations are provided within the proposed strategy. The proposed zoning plan defines three management zones – the William River

Dunes, the Thompson Bay Dunes, and Cantara Bay to McFarlane River. Each management zone is allocated with different use and access guidelines according to the sensitivity of the ecosystem. Aboriginal and Treaty rights to hunt, trap, and gather are not affected by the zoning plan (ibid.).

Section three of the management strategy expands on recommendations for issues defined in section two as program guidelines. Each issue is categorized to discuss the current status of the issues, recommendations and strategies, rationale for the guidelines, and references for developing the guidelines. This section deals with issues in a more comprehensive manner.

The co-stewardship of lands in northern Saskatchewan would protect lands that are culturally and ecologically significant. While the ecological significance of the region is more widely understood, indigenous knowledge describes culturally significant lands and indicates their importance to Fond du Lac Denesuline. In order for a co-stewardship arrangement with Fond du Lac Denesuline Nation to be established there must be a mutually understood legislative and policy framework. Without precedent case examples in Saskatchewan, negotiating for co-stewardship without an established policy could potentially result in conflict. The *Public Involvement Policy* and *Aboriginal Affairs Policy* do not provide a clear definition of the type of co-stewardship arrangement Fond du Lac Denesuline Nation is seeking. With legislation and policy changes, the negotiation of a co-stewardship arrangement in northern Saskatchewan would present a unique opportunity and could influence the establishment of future co-stewardship arrangements in Saskatchewan. Recommendations will be discussed in Chapter Five.

#### **4.6 Context of Co-stewardship for Saskatchewan**

In "...the 1980's and 1990's (there was) a restructuring of power and responsibilities with regard to natural resources" (Notzke 1994: 3) which presently continues through the establishment of new management regimes. The terms co-management, cooperative management, joint management, and collaborative management are used to describe a management arrangement involving more than one organization which requires some level of cooperation and collaboration. The term co-stewardship is not recognized within Government of Saskatchewan policy or legislation. Fond du Lac Dnesuline Nation began using the term in December 2003 during discussions with the Government of Saskatchewan about the role they would like to have in management decision-making for the sand dunes region. As a management regime co-stewardship is not frequently recognized, however a review in this Chapter of community control management arrangements, co-management boards and partnerships provides a forum to discuss cooperative and collaborative management arrangements. There is an opportunity to expand protected areas thinking through the development of co-stewardship arrangements in Saskatchewan.

RCAP (1996) defines all of the above management regimes as "institutional arrangements whereby governments and Aboriginal (and sometimes other parties) enter into formal arrangements specifying their respective rights, powers and obligations with reference to the management and allocation of resources in a particular area" (RCAP 1996: internet). Tracy Campbell defines co-management as a consensus-based negotiation for resource management which integrates knowledge systems to promote institutional effectiveness and improve resource management (Campbell 1996). A further

perspective is provided by the *Saskatchewan Environment Public Involvement Policy* (1997) which defines co-management as a cooperative arrangement to undertake integrated management of lands and resources through the establishment of boards or councils for shared ownership of planning and decision making. The basic premise is for two or more organizations to cooperate in order to collaboratively manage an area of land and the resources it contains or a particular species in danger of a conservation crisis.

Management arrangements define the rights, powers, and responsibilities of different resource users and interests. They can be informal or formal agreements to collaborate. The division of shared responsibilities and jurisdictional rights varies produces management institutions which are very different from one another, but whose main goal is to cooperatively manage resources. In Figure 7, the partnership, management board, and community control arrangements differ by the level of decision-making responsibility and authority agreed upon for the community organization. There are community control arrangements which are called management boards as well as

**Figure 7: Levels of Participation in Management Arrangements**  
(adapted from Berkes 1994: 19)

Decision Making Responsibility and Authority ↑	<b>Community Control</b>	Institutionalized joint decision-making; delegated to community where feasible
	<b>Management Boards</b>	Community is given opportunity to participate in developing and implementing management plans
	<b>Partnership</b>	Partnership in decision-making starts; joint action on common objectives
	<b>Advisory Committees</b>	Start of two-way information exchange; community starts to have input into management
	<b>Consultation</b>	Start of face to face contact; community input heard but not necessarily heeded
	<b>Informing, Education</b>	Community is informed about decisions already made

partnership arrangements called management boards. This has created confusion over what a management board is and various organizations have used a variety of explanations.

The Government of Canada Report of the Standing Committee on Aboriginal Affairs and Northern Affairs (1995) provides an overview of the evolution of co-management in Canada, using Saskatchewan as the case example to discuss the current co-management regime in Canada. It does not include land claims settlements, existing treaty negotiations, or self-government discussions. The report recognizes the co-management regime in Canada as advisory and recommends "the delegation of authority to local co-management boards to regulate with respect to small-scale resource activities" (SCAANA 1995: vii). One Fond du Lac Denesuline vision to establish a co-stewardship arrangement for the sand dunes region would involve a devolution of decision-making responsibilities and a leading role in management.

The Report of the Royal Commission on Aboriginal Peoples in Canada (1996) states "implementing and renewing existing historical treaties is the proper way to negotiate an expanded land and resource base for Aboriginal peoples" (RCAP 1996: internet). The report responds to self-government directions and complies with RCAP's definition of institutional arrangements to manage lands and resources (Dudgeon 2001; Government of Canada 1996). The overall recommendation is to co-manage resources with a high level of participation, to share rights and responsibilities, and to delegate of management authority to Aboriginal Nations.

Aboriginal perspectives on co-management have been documented by various First Nations agencies, independent First Nations, and Aboriginal scholars. Little Red

Cree Nation submitted a model for co-management of Wood Buffalo National Park in 1991 which called for a shift regarding First Nations involvement in management from an advisory role to an administrative role (LRCN 1991). Here, the advisory role of First Nations participation in resource management acts as a building tool to initiate First Nations administrative authority for decision-making in management (ibid.).

Figure 8 depicts the devolution of decision-making responsibilities and authorities as a transitional process where control and power shifts from traditional government responsibility for lands and resources to equal participation in management rights and responsibilities to community control in decision-making for lands and resources.

**Figure 8: Transitional Model of Devolved Rights and Responsibilities**  
(Source: ALUPIAP 2001b)

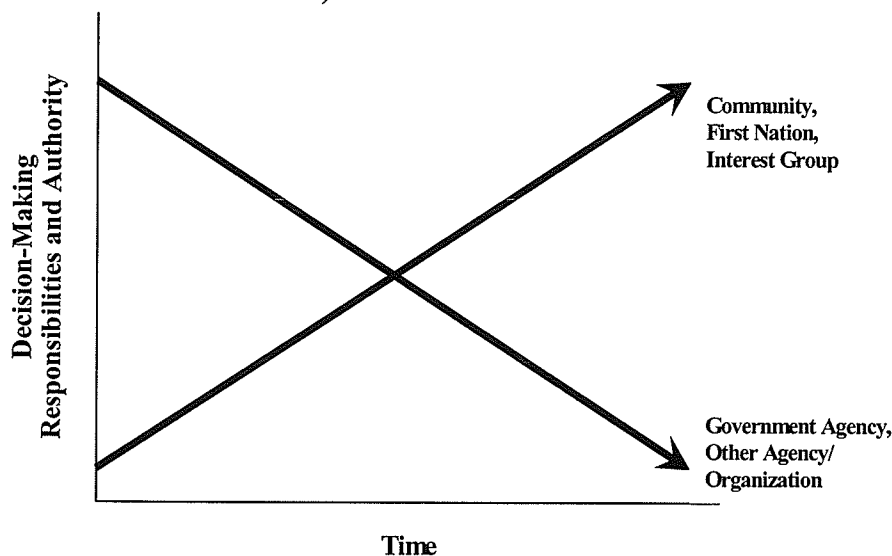


Figure 8 facilitates government directions to increase Aboriginal participation and coincides with Aboriginal perspectives to change from acting in advisory capacities to having a lead role in management decision-making. The speed of transition is dependent on the capacity building requirements of the Aboriginal Nation, existing legislative and policy frameworks, and the internal positions of existing government agencies.

Community-based models of increasing decision-making responsibilities and taking a lead role in management have been reiterated by Fond du Lac Denesuline Nation. The term co-stewardship was first used in negotiations between Fond du Lac Band Council and Saskatchewan Environment on December 19, 2003. The lack of precedent co-stewardship arrangements in Saskatchewan offers an opportunity to create a new type of management arrangement which will facilitate Fond du Lac Denesuline Nation to have more responsibilities in protected areas management.

#### **4.7 Developing Co-stewardship through Management Indicators**

Through a case study review of management arrangements across Canada the challenges and successes of management arrangements can be collaborated into a list of indicators for successful management. The indicators represent an evaluation framework and checklist to consider when negotiating, establishing, implementing, and reviewing a management arrangement. While the checklist is not comprehensive of all consideration in developing a management arrangement, it provides insight to establishing an agreement. The case study review in Table 2 describes the characteristics of four community control arrangements, seven management boards, and five partnerships.

The case study review noted differences about the rationale to establish management arrangements which were exemplified through political directions to negotiate the management arrangement. For example, the Canada-Haida Agreement was initiated in response to political pressures to resolve conflict over land rights between foresters and the Haida Nation on lands which had been independently designated and managed as a Tribal Park (RCAP 1996). In contrast, the Joint Inuit/Government Park

Planning Committee was not established due to conflict and political pressure, rather the Committee was established to fulfill northern land claims recommendations in an initial spirit of cooperation (Parks Canada 1994). Political pressure to establish the Northern Buffalo Management Board was not in response to resource user conflict, rather it was in response to a conservation crisis where tuberculosis in northern buffalo was threatening cattle populations. With a diversity of reasons to establish a management arrangement, the negotiation of an agreement must consider political and administrative factors. The following list of indicators are required considerations for a management arrangement to be negotiated and established.

#### **Negotiating the Management Arrangement**

- Neutral (external) Chairperson
- Clear management objective – why the arrangement is being made; what are the objectives;
- Funding – sufficient funding; a diversity of sources; external partnerships; financial self-sufficiency
- Decision-making system – consensus; voting majority
- Clearly defined management structure – how will responsibilities be divided, shared; who will be involved; how will the management structure need to change over time
- Clearly defined jurisdiction – current jurisdiction to make and enforce decisions; what changes will need to be made to facilitate the arrangement; how will jurisdictional changes be implemented
- Method to transfer authority – how will changes to management structure and jurisdiction be implemented

The establishment of a successful management arrangement goes beyond negotiating and signing an agreement. To implement the management arrangement responsibilities are fully initialized and tasks are conducted to meet the management objectives. It is in implementing the management arrangement that the potential for conflict is highest. The Central Region Board of Clayoquot Sound in British Columbia had conflict resolution measures developed but the measures did not extend to the case of



deadlock that occurred and the Board's operations were disrupted (RCAP 1996). A familiar issue to management arrangements in the case study review was that of jurisdictional capability to enforce management decisions. In all of the provincial cases a ministerial override capability was in effect. While a minister negating the recommendation of a management arrangement may be unlikely, the morale of the Board could be affected and combined with the completion of management tasks may have resulted in unnecessary conflict (Kendrick 2000). Resolving this issue requires recognition of the agreement within policy and legislation and clear definitions of enforcement mechanisms. Indicators to implementing a management arrangement are more numerous than the following list, however the case study review represented in Table 2 provides a comprehensive summary of considerations.

#### **Implementing the Management Arrangement**

- Formal inclusion of Aboriginal Nations – responsibilities; jurisdiction; secure funding
- Government commitment – responsibilities; jurisdiction; secure funding
- Recognition of the Agreement – within policy and legislation; designate to make required changes and recommendations
- Representation of third party interests – existing interests; potential interests
- Research initiatives – needs; objectives; who will be involved; designate to coordinate research projects
- Community support – methods; communications
- Information management – designate to gather existing information
- Public education and communications – media; communication of research results; responding to requests for information;
- Support services provided – administrative; technical, coordination; administrative equipment
- Language considerations – written translations; verbal interpretations
- Management Plan – broad versus nested community-based plans;
- Ability to enforce decisions – responsibilities to implement management decisions

**Table 2 : Case Study Review of Management Arrangements**

TYPE OF ARRANGEMENT	THE PLAYERS	OBJECTIVES	DISTRIBUTION OF RESPONSIBILITIES	STRENGTHS AND ACCOMPLISHMENTS	CHALLENGES	REFERENCES
<b>Community Control Arrangement</b>						
Archipelago Management Board, Canada-Haida Agreement, Gwaii Haanas Haida Heritage Site and National Park Reserve, British Columbia  (1991 - present)	-Council of the Haida Nation -Government of Canada	"To protect and preserve the archipelago's natural environment and Haida culture for the benefit of future generations" (RCAP 1996: 752)	-Develop a joint management plan, establish Haida harvest regulations, identify and manage cultural sites, develop guidelines for commercial, research and recreational activities, develop economic and employment strategies associated with joint management process	-Parks Canada funds Board participation and other projects -Parallel sovereignty -No ministerial override -Conflict resolution protocol outlined -Consensus decision-making -No ministerial override of Haida decisions	-Parallel sovereignty -Funding not clarified in the agreement	(LRCN 1991) (RCAP 1996) (Weitzner 2000)
Central Region Board, Interim Measures Agreement, Clayoquot Sound, British Columbia  (1994 - present)	-Hawiih of Tla-o-qui-aht, Ahousaht, Hesquiaht, Toquaht, and Ucluelet First Nations -Government of British Columbia	-To conserve resources for future generations within their traditional territories	-Responsible to monitor and coordinate activities of existing panels, agencies, and ministries for land and resource management in the region -Develop and implement forestry audit -Conduct research to the development of ecological zones and parks -Creation of a cooperative forest management area and working economic development working group	-IMA's Central Region Board set to manage lands in advance of treaty negotiations -First Nations veto power -Conflict resolution measures through hereditary chiefs and provincial government ministers -Secretariat provides coordination and administrative support Government funds CRB	-No conflict resolution measures set in case of deadlock -CRB cannot enforce decisions within existing provincial jurisdiction	(RCAP 1996)
<b>Management Board Arrangement</b>						
Beverly - Qamanirjuaq Caribou Management Board  (1982 - present)	-Governments of Manitoba, Saskatchewan, Northwest Territories -Government of Canada	To work collaboratively to conserve caribou populations for future generations	-BQCMB recommends management plans for caribou harvest and conservation to governments and communities -BQCMB provides research directions to integrate caribou knowledge.	-Interjurisdictional forum helps to facilitate coordinated action -Research initiatives -BQCMB Management Plan -BQCMB Fire Management Plan	-Aboriginal and non-Aboriginal communities not included in the Agreement -Ministerial appointment of caribou user representatives based on community/organization recommendation -Jurisdiction issues of accessibility and commercial use -Communication gaps and	(Kendrick 2000) (RCAP 1996)

					language difficulties -Information management -How to integrate knowledge with decision-making -Board doesn't have clear, undisputed management goal -Community support for Board	
Denendeh Conservation Board  (1986-1993)	-Aboriginal representatives from 5 tribal nations -Government of NWT -Chair	-To conserve and protect all renewable resources and habitat to ensure their future availability for use by Dene/Metis in the anticipated settlement area	-Provide advice to governments (NWT, federal, intergovernmental) on renewable resource policy and legislation, including wildlife, habitat, forestry, environmental protection, land-use planning and water	-DCB established in anticipation of Dene/Metis comprehensive land claims settlement	-Lack of communication between DCB and the public -DCB did not establish its own agenda, viewed as an extension of government -Lack of legal decision-making authority -Advisory capacity only -Absence of independent fiscal, research, planning capacity -DCB was dissolved when negotiations for Dene/Metis comprehensive land claim collapsed -During dissolution, lack of government commitment to DCB	(RCAP 1996)
Joint Inuit/Government Park Planning and Management Committee, each of Auyuittuq, Quttinirpaaq, and Sirmilik National Parks (1999 - present)	-Inuit of Nunavut -Government of Canada	Forthcoming	-JPMC provides recommendations on park planning and management, economic opportunities, water licenses, archeological and cultural site protection, and research	-Meetings and work conducted in local language -Government funding contributions -Secretariat provides support services	Forthcoming	(Gertsch et al. 2004) (Parks Canada 1999)
Northern Buffalo Management Board, Wood Buffalo National Park, Alberta (1991 - present)	Representatives from 9 Aboriginal communities -Government of Canada (INAC, Parks, Agriculture Departments) -Government of Alberta and NWT -Canadian Cattle Association -Canadian Bison Association	-To develop a management strategy to prevent the spread of diseases and ensure a healthy free-roaming buffalo population	-Management strategy is to be completed following community-based planning program as each of nine communities uses a particular herd or is concerned of herd reintroduction -Recommend management strategy to governments	-Recognizes the role of indigenous knowledge in research and monitoring of buffalo populations -Each community develops its own management plan which is then to be worked into an overall management plan	-Control of tuberculosis and brucellosis in buffalo population (from spreading to free-roaming buffalo herds, bison and cattle ranches) -Complex Board structure -Advisory capacity	(Notzke 1994)

	-Representatives from environmental organizations					
Barriere Lake Trilateral Agreement, Quebec (1991 - present)	-Algonquin of Barriere Lake -Government of Quebec -Government of Canada	To reconcile forestry operations with environmental concerns and traditional Algonquin ways of life over their traditional territory	-Prepare and integrated management plan for renewable resources and make recommendations to implement the management plan -Agreement establishes Special Representatives entity and Task Force entity -Special Representatives oversee communication, develop work plan and budget for task force, draft plan and recommendations, and make decisions to apply provisions of the agreement -Task Force identify special zones and develops recommendations to protect those zones	-Algonquin strategy not to secure Aboriginal title or rights, but to reduce immediate resource extraction pressures and to engage governments into negotiations -Shared financing -Quebec consented to give Quebec Special Representative full decision-making authority	-Transfer of authority -Jurisdictional clarification	(RCAP 1996)
Wendapan Stewardship Authority, Ontario (1991 - present)	-Teme-Augama Anishnabai appointees -Government of Ontario appointees -Chair	To act as a decision-making body reporting to the Government of Ontario and the Teme-Augama Anishnabai	-Responsible for monitoring, regulating, and planning all land uses and activities including tourism, fish, wildlife, land development and cultural heritage	-None of the government appointees is a public servant -Jointly appointed neutral chairperson -Informal routine for decision-making -1994- 20 year Forest Stewardship Plan	-1993 Ontario government changeover before Treaty of Coexistence ratified; Conservatives withdrew -Lack of stable funding, Ontario controls funding therefore can control agenda through funding availability -Tacit agreement over jurisdiction only	(Berneshawi 1997) (RCAP 1996)
Hunting, Fishing, and Trapping Coordinating Committee, James Bay and Northern Quebec Agreement, (1975 - present)	-James Bay Cree (Cree Regional Authority) -Inuit (Makivik Corporation) -Government of Canada	To review, manage, and in some cases supervise and regulate the hunting, fishing, and trapping regimes of the Agreement	-CC makes recommendations on regulations, management procedures, allocations, wildlife-related research, permit and application reviews, commercial fishing, species protection -CC distributes information -CC participates in EIA processes -Individual community committees established to manage exclusive harvest rights	-Guaranteed minimum income program for full-time hunters -Cooperative Eider research -Co-managing beluga whales -Caribou management -Rights and access defined by land classification - Category I, II, III lands	-CC is advisory, ministerial override in effect -Language barriers affect interpretation of the Agreement -Rigid committee structure -Non-compliance to Agreement -Cross-cultural barriers -Funding issues	(Drolet et al 1987) (RCAP 1996)

			-Individual community committees provide some authority on sport hunting, fishing, outfitting and non-Aboriginal access			
<b>Partnership Arrangement</b>						
Wollaston Fishermen's Cooperative, Saskatchewan (1980's - present)	-Hatchet Lake First Nation -Saskatchewan Environment & Resource Management -Freshwater Fish Marketing Corporation		-Cooperative designs internal membership rules and regulations, allocates lakes among members, and determines harvest practices. -SERM sets biological quotas. -FFMC makes all marketing decisions.	-Establishment of packing plant on Wollaston Lake	-Guidelines and regulations to run cooperative set out by provincial government.	(Government of Canada 1995)
Wapusk Management Board, Wapusk National Park, Manitoba (1996 - present)	-Fox Lake First Nation -York Factory First Nation -Churchill -Government of Canada -Government of Manitoba	To provide recommendations to the Federal Minister on the planning, management and operation of the Park	-Recommendations from the Board are made to the Park Superintendent (in case of disagreement to Parks Canada Regional Executive Director then Federal Minister) -Recommendations made on local use of resources, policy developments, enforcement, training, research, staffing and the protection and management of lands and resources		-No conflict mediation mechanism outlined in Agreement -Difference of communication styles -Set agenda and working process -Agreement on zoning -Sunsetting of hunting by non-Aboriginal peoples -Maintaining Board membership -Need to increase meeting frequency to establish trust -Empowerment of local peoples in Park operations	(Parks Canada 1996) (Weitzner 2000)
Coordinating Committee, Interim Hunting Agreement, Ontario (1990 - present)	-Algonquins of Golden Lake -Government of Ontario	To manage deer and moose hunting based on conservation, wilderness values, and Algonquin harvest rights	-Conduct technical work to implement the agreement including planning, reporting, maintenance of hunting activities -Make recommendations on conservation measures -Submit annual report on biological harvest data	-Recognition of Algonquin law to regulate harvesting activities -Cross-deputized conservation officer who enforces Algonquin law and works closely with provincial conservation officers -Community-based justice system to resolve charges against Algonquin offenders -Significant provincial funding support -Diminishing accusations of overharvesting	-Agreement is renegotiated annually -Ad hoc committee, representing recreational users, tourist operators, anglers, hunters, loggers, formed in defence of Algonquin Park which is against any Algonquin use of the park or involvement in park management -Segregation of officer duties based on cultural background	(RCAP 1996)

Norsask Forestry Co-management Partnership, Saskatchewan (1993 - present)	-Meadow Lake Tribal Council -Saskatchewan Environment & Resource Management	To allow stakeholders to participate in timber harvesting decisions	-MLTC and Norsask are responsible for process and consideration of stakeholders concerns and recommendations	-Norsask contributing 50 cents per cubic meter to fund the co-management boards (contribution per Board based on annual harvest within Fur Conservation Area)	-Boards in place are advisory only -Difficulties in negotiation -Local mistrust of process	(Government of Canada 1995)
Whitedog Area Resources Committee, Ontario (1991 - present)	-Wabaseemoong Independent Nations -Government of Ontario -Chair	-To plan and manage for sustainable development in the TLUA ensuring the benefits reach the Wabaseemoong Nations	-Prepare a comprehensive resource inventory of the TLUA -Identify sustainable economic development opportunities and develop a socio-economic development plan -Lay groundwork to set up a co-management agreement	-Given flooding from 2 hydro-dams of TLUA and mercury contamination of English River, WARC allows local input to developments within their TLUA	-All WARC members appointed by government on advice of parties -Advisory capacity; no delegation of authority -Dissatisfaction over how third party interests are represented	(RCAP 1996)
Elk Lake Community Forest Project, Ontario (1992 - present)	-Township of James -Elk Lake Planing Mill -Elk Lake Planing Mill Employees Assoc. -Timiskaming Board of Education -Other interests -Teme-Augama Anishnabai (non-voting) -Government of Ontario (non-voting) -Central Timiskaming Economic Dev'elopment Corp. (non-voting)	-To secure local decision making authority for the development of sustainable forestry while ensuring the economic viability of communities and secure the permanence of the community forest	-Partnership Committee responsible to establish direction to meet objectives -Develop strategies for resource-use conflict resolution, and to keep existing industry, enhance recreational opportunities and promote economic diversification -Increase public awareness, knowledge and participation -Form external partnerships to become financially self-sufficient	-Provincial and proponent funding input -Technical support available -Partnership is attempting to become a non-profit corporation which would increase its advisory role to include more decision-making authority	-Heavy representation by forestry interests	(RCAP 1996)

The case study review in Table 2 indicated that the variety of management arrangements were formed for different objectives therefore management responsibilities differed as well as the distribution of management responsibilities. A comprehensive list of considerations is below. The considerations which were defined by each arrangement related to the objectives of the management arrangement. Here it becomes clear that the negotiation of the management arrangement must have clear management objectives to successfully share management responsibilities.

#### **Management Responsibilities**

- Harvest regulations
- Protection of cultural sites – archeological; historical; cultural
- Research protocols
- Employment strategies
- Economic development
- Tourism development
- Creation of protected areas
- Renewable resource guidelines and procedures
- Wildlife habitat conservation
- Forestry guidelines and procedures
- Water quality and conservation – licenses;
- Commercial fishing guidelines and procedures
- Sport hunting and outfitting
- Access to the region
- Training to meet management, research, enforcement needs
- Financial and budget reports
- Comprehensive resource inventory

The case study review in Table 2 highlights similarities in the types of challenges faced by management arrangements. Challenges to community control arrangements resulted from problems in implementing management decisions. Management boards were characterized by difficulties in reaching management decisions. These difficulties were influenced by the lack of a clear definition of jurisdictional rights and management responsibilities. Partnerships experienced problems related to relationship building such

as funding, meeting processes, and the decision-making system used. Approaching the resolution of challenges requires their recognition and compromises in making decisions. To recognize and face challenges monitoring the management arrangement is necessary to review and evaluate its effectiveness. This short list of indicators is not comprehensive of necessary monitoring to a management arrangement however it provides insight to what has been done in the past as noted within the Table 2 case study review.

### **Monitoring the Management Arrangement**

- Compliance to Agreement – designate to oversee management arrangement; method for recommending conflict resolution
- Functioning management structure and membership – designate to coordinate management arrangement
- Conflict resolution measures – clearly defined; third party involvement

Management boards are the most widely represented management arrangements in Canada. Arrangements consulted were conservation-based, economic-based, and use-based arrangements. Considering a variety of management arrangements assists in the development of co-stewardship as a separate type of management arrangement. The challenges of past management arrangements alert negotiators of new types of arrangements to potential limitations. Similarly, the successes of past management arrangements allows the sharing of innovation and management initiatives that improve the protected areas planning and management. Precedent cases of community control arrangements involving the devolution of management rights and responsibilities are few in Saskatchewan, however arrangements in other provinces and land claims agreements in the north serve as a guide to establishing a co-stewardship arrangement for Saskatchewan.

Co-stewardship as a management system is a response to the current climate of protected areas in the north. The involvement of Fond du Lac Denesuline Nation in



management is not a new concept, they have been involved in sustainable resource use as a management technique within the Denesuline management system for centuries. Their involvement responds to the present social, economic, political, and ecological needs of the region.

#### **4.8 Role of Indigenous Knowledge in Co-stewardship for Saskatchewan**

The clear and prominent role of indigenous knowledge in co-stewardship is to forge a mutual understanding between conservation scientists and indigenous peoples. There have been international conferences, committees, and conventions held to discuss shared understandings between political organizations to manage the use of lands and resources. There is a need to reiterate international directives in the national, provincial, and local context within Canada. As highlighted in Chapter 2 (Table 1) indigenous knowledge in lands and resources management has been documented for the purpose of land use and protected areas planning, biodiversity, climate change and other resource monitoring, environmental assessments, community development and education, and land and compensation claims negotiations (Chambers 1994; Hoare et al. 1993; St. Denis 1992; Tobias 2000). Aboriginal Nations in Canada have a parallel objective to protect lands for future generations and the goal of conservation science is to maintain lands and resources for the future. These parallel objectives are exemplified through protected areas management systems and indigenous management systems.

An in-depth discussion earlier in this Chapter discussed the mandate and history of protected areas in Canada. The concept of conservation in protected areas management has existed for over 100 years and clearly North American governments are interested in

maintaining resources for the future. Indigenous management systems have existed since the time before the arrival of explorers, traders, colonists and colonialists and the concept of sustainable resource use is demonstrated through the exercise of restraint in harvesting practices and shared territory. The Fond du Lac Denesuline management system is based upon world views that guide traditional land use activities and ideas about resource developments such as mining, forestry and ecotourism. Indigenous management systems are a result of indigenous knowledge accumulated over centuries, which has existed since time immemorial, and is based on sustainable resource use practices.

The involvement of indigenous management systems in the co-stewardship of protected areas requires the involvement of indigenous knowledge holders. Consulting indigenous knowledge through research and written reports is not adequate as the social, religious, political, economic and ecological context can not be communicated with words. For this reason indigenous knowledge affects the management structure of protected areas through the involvement of indigenous peoples and the power relations that exist in formal management structures. Recognition on part of government resource managers, industry, conservation scientists and wildlife biologists, and environmental organizations that indigenous management systems are based on principles of sustainable resource use facilitates collaboration for management decision-making. This recognition also acknowledges the vital role that indigenous knowledge holders have in management.

The involvement of indigenous knowledge holders introduces new manifestations of power relations which are different from historically assimilationist policies and federal land negotiations. With political organization and representation of Aboriginal concerns about land and resources increasing over the last thirty years, there have also

been shifts in the way that concerns are voiced. The increasing involvement of Aboriginal Nations in the colonialist political-legal system has led to a bureaucratic uprising to resist change on part of government organizations. The slow move to change policy and reinvent previously existing management structures has resulted in Aboriginal political structures which are bureaucratically similar to federal and provincial political structures (Nadasdy 2003). The redundancy of two or more sets of bureaucratic procedures provides a rationale to establish new forms of management arrangements which eliminate administrative replication and delegate responsibility to make decisions.

The language used to negotiate land agreements, participate in the conservation of wildlife species, and to share decision-making is alienating to indigenous knowledge holders, government resource managers, and wildlife biologists (Nadasdy 2003). For example, one Fond du Lac Denesuline elder discussed why the Fond du Lac Denesuline people went to ethedustsél túê and described some ecological characteristics of that place (Fond du Lac Denesuline Nation 2004). The Dene place name has been passed on through generations and as the name itself describes certain ecological characteristics the communication of those characteristics is not transferred as resource managers know the place as Lake Athabasca. Communicating the health of wildlife populations within a western scientific framework may involve counting individual animals and using technology to monitor their current movements. In contrast indigenous knowledge accumulates observations and experience over many generations which describe the health of wildlife populations and refers to a description of how the relationship between people and wildlife species has changed over time. Integrating indigenous knowledge

into a western scientific framework minimizes the information that is actually contained there because the context of the knowledge is not passed on.

Indigenous knowledge about the land contains an ecological baseline that has been accumulated over generations about wildlife and the relationships between people and wildlife. Western scientists have historically established ecological baselines through rigorous research quantifying population frequencies and distributions which are useful to management decision-making. Translating indigenous knowledge into compartmentalized data produces a barrier between Aboriginal Nations, government resource managers, and wildlife biologists. It is not only the language used in quantifying wildlife data that creates a communication barrier and affects decision-making, it is also an issue of respecting indigenous knowledge and the context through which it is learned. Nadasdy (1999) reports the benefits of indigenous knowledge in monitoring sheep populations. Initial population counts of Ruby Range sheep populations and the establishment of the 'full curl rule' for harvesting were made based on western science. The management decision met with opposition prompting further investigation and on arrival at the Ruby Range, the size and health of sheep was noted by people of Kluane First Nation and resulted in a change in management to a quota system in an effort to better conserve sheep populations in the Yukon (ibid.). Acknowledgement is needed that there are two very different ways of knowing in which the context of indigenous knowledge and the theoretical assumptions of western science cannot be integrated together to represent an ecological baseline. However, knowledge gathered to form an ecological baseline can be stored in the same place for the purposes of corroboration and collaboration.

Fond du Lac Denesuline and Athabasca Denesuline bands have an objective to establish a database of ecological knowledge which would combine several land use and occupancy studies, past research, and western science by the use of links to different sources of information on the same subject (ALUPIAP 2001a; Fond du Lac Denesuline Nation 2004). Aboriginal Nations and indigenous communities in North America have established ecological baselines through various methods to meet their own objectives. The Nunavik Inuit Land Use and Ecological Knowledge Database in Quebec was developed to record baseline data from indigenous knowledge which is updated on a continual basis (ICC 1996a). In addition, indigenous knowledge was corroborated with western scientific knowledge to assist in protecting endangered species and spaces and to conduct monitoring of wildlife population and habitat health.

An ecological database could be established using the contributions of both western science and indigenous knowledge when the database framework is constructed to store information in a variety of media. The Labrador Inuit Land Use and Ecological Knowledge Database of Labrador was compiled within a large historical and cultural framework and drew on specialized academic information to create a corroborated database of indigenous and western scientific knowledge (ICC 1996b). Possessing the knowledge of wildlife habitat ranges can assist people in making future land purchases as was done by the Winnebago Reservation, U.S.A. (Szymanski et al. 1998). Knowledge about wildlife habitat affects land selection and management decisions for protective measures, zoning plan development, environmental impact assessment, ecotourism development, setting harvesting quotas, and education. The purpose of constructing a database is to store information in a format that can be consulted for management

decision-making and updated to represent the temporal variability of ecosystem characteristics and changes in how people use the land

With indigenous knowledge about the land being cumulative there is a distinct monitoring role that indigenous knowledge holders have in recognizing change. As discussed in Chapter Three, Fond du Lac Denesuline elders had noticed changes in fish populations on Lake Athabasca since the close of the commercial fishery (Fond du Lac Denesuline Nation 2004). Elders also described changes in caribou migration patterns over the last sixty years due to forest fire (ibid.). The potential for indigenous knowledge holders to have a monitoring role indicates the need to facilitate exchanges of knowledge that would assist in the co-stewardship of protected areas in Saskatchewan.

Indigenous knowledge holders in other regions have also reported changes in environmental conditions that propel changes in decision-making and management. Riedlinger (2001) conducted a community-based assessment of change which recorded Inuit knowledge of climate change in Sachs Harbour. Inuit perceptions in the Nunivik area were recorded due to concerns over airborne and waterborne contaminants from the south which were affecting caribou, fish and sea mammal populations (Poirier et al. 2000). The Nisga'a Nation of British Columbia recognized changes in fish populations due to sedimentation covering spawning grounds and alerted authorities to the problem, (Corsiglia et al. 1997). The recognition of change over time records how it used to be and how it is in the present.

Predictions about the future help guide sustainable management decisions and plans for the future. The Hudson Bay Bioregion Project conducted a regional assessment of changes and adaptations in the way of life by documenting traditional knowledge

(McDonald et al. 1997). Indigenous knowledge about the land has a role in monitoring and assessment where cumulative observations of change demonstrate historic and continued use and occupancy and also predict future changes. The Labrador Innu Association and the Innu Nation reported estuarine, marine, and sea ice environmental knowledge and made predictions of the anticipated changes that would result from a Voisey Bay Nickel Company initiative (Usher 2000). Having a record of change held in living memory gives indigenous knowledge holders a voice that is gaining political representation.

Indigenous knowledge takes a lead role in protecting areas of cultural and spiritual significance. Protecting areas from human intrusion and respecting areas of land that have religious, heritage, and healing purposes requires indigenous knowledge holders to keep knowing where those areas are and what is their significance. There should be a mutual understanding that sacred areas and their oral traditions and histories are necessary to maintaining the cultural identity of Fond du Lac Denesuline people. Burial grounds, archeological sites, historic encampments, healing waters, medicinal plants, sandstone/limestone collection areas, and birth sites all contain a people's history and are areas of cultural and spiritual significance. Culturally significant areas described by Fond du Lac Denesuline are also based on traditional land use practices such as hunting, fishing, trapping, social gathering, plant uses and travel networks. The consideration of these traditional land uses as significant to maintaining a way of life and identity would prescribe the involvement of Fond du Lac Denesuline in the co-stewardship of lands within their traditional territory.

## **Chapter 5: Conclusions**

Co-stewardship in Saskatchewan represents changing considerations in how management is implemented for the protection of lands and resources. The need to form alliances resolves conflicts over competing resource interests and improves the working relationship between the Fond du Lac Denesuline and government agencies currently interested in protected areas as a tool for conservation management. The role of traditional land uses as culturally significant demonstrates the need to conserve lands for future generations. Indigenous knowledge holders maintain the Denesuline management system and their involvement in protected areas management systems as separate institutions is a legal, social, political, and ecological imperative.

Legal precedence dating back to the Berger Inquiry of 1977 and conclusions made through the Supreme Court of Canada and provincial court systems such as Marshall (1999), Delgamuuk'w (1997), and Sparrow (1990) prescribe the involvement of Aboriginal peoples in decision-making about resource management and economic development related to lands and resources. Aboriginal and Treaty rights to use the land for subsistence and commercial purposes continues to be a contentious issue and there is a place in co-stewardship to address these issues through management negotiations. Clarification of commercial resource use as an inherent Treaty right and a constitutionally protected Aboriginal right is needed to resolve economic resource development issues. The constitutional definition of Aboriginal peoples affects subsistence resource use for Metis Nations and subsequently potential commercial interests are affected when considering indigenous management systems and overlapping territories. The legal and political rights of Fond du Lac Denesuline to be involved in the management of the



Athabasca sand dunes are supported by international and national directives recommending the involvement of indigenous people in land and resource management.

Further to international and national directives there are definite similarities between Denesuline management systems and the objectives of protected areas management systems. The United Nations Agenda 21, the World Health Organization, and the United Nations Environment, Science, and Culture Organization International Biosphere Reserve Program recognize the traditional practices of sustainable resource use within indigenous management systems. The existence of a previously existing land management system carries with it a responsibility on part of current managing institutions to involve representatives from indigenous management systems. The principles of sustainable resource use as defined by the World Commission on Environment and Development parallel the teachings of Denesuline indigenous knowledge and the importance of maintaining resources for future generations. Protected areas management systems have built policy and legislation structures to plan and implement decisions over how people will be permitted to use the land based on western scientific knowledge systems that recognize problems and attempt to create solutions to delimit the impacts of resource use. Building alliances and establishing cooperative working relationships draws on two different ways of knowing for management decision-making for the future.

The knowledge systems that are associated with protected areas and Denesuline management systems are distinctly different although the objectives of sustainable resource use are mutual. Fond du Lac Denesuline indigenous knowledge contains the history of the Denesuline Nation and defines a collective identity. As land is required for

the practice of traditional land uses, the maintenance of the Denesuline management system is inherently linked to Denesuline indigenous knowledge. Fond du Lac Denesuline describe areas of cultural significance and as these areas are understood through indigenous knowledge, their importance is passed on to future generations. The protection of culturally significant lands facilitates the accumulation of indigenous knowledge about the land and about a way of life thereby maintaining their cultural significance.

Fond du Lac Denesuline traditional territory represents lands used for traditional land use activities such as hunting, fishing, trapping, social gatherings, medicine plant, traditional plant use, egg gathering, and religious or ceremonial purposes. The existence of travel networks and camp sites provides evidence to the practice of traditional land use activities. For this reason there is a definite role for indigenous knowledge in the co-stewardship of lands as indigenous knowledge about the land is a detailed source of history – the history of people, the land, and the relationship between people and the land.

The collaboration of distinct knowledge systems within protected areas and Denesuline management systems presents an opportunity to put together an ecological baseline which draws on Denesuline indigenous knowledge about the land that has accumulated over centuries and on western scientific knowledge which collects small-scale and detailed observations to form complex hypothesis. The compartmentalization of indigenous knowledge about the land ignores the context through which knowledge is learned and generalizing scientific data limits the complexity of the observation. Hence, for adaptive management to work there needs to be indigenous knowledge holders, scientists, and resource managers involved for successful decision-making to occur.

## **5.1 Recommendations for Co-stewardship in Saskatchewan**

Sharing indigenous knowledge and western scientific knowledge through research and practice to open discussion on issues specific to northern environments in Saskatchewan would help to decrease conflicts between resource managers, wildlife biologists, and Fond du Lac Denesuline that result due to power relations. Collaboration between distinctly different knowledge systems in co-stewardship of the same land area or resource results in language and communication challenges. Power relations that are affected by language and communication barriers are present both on the land and in the boardroom. It is difficult to establish a cooperative working relationship in the presence of power relations which result from a provincial administrative body that is based on the British political and justice system. There is a climate of confusion regarding management rights and who has management responsibilities for how the land is used that is entrenched in historic and current legislation and policy. Developing a mutual understanding between Fond du Lac Denesuline, wildlife biologists, and resource managers may be a precondition to successful co-stewardship in Saskatchewan.

Co-stewardship negotiations in Saskatchewan face the challenge of multiple systems of bureaucratic procedures. The redefinition of how Fond du Lac Denesuline Nation and the Government of Saskatchewan relate to each other through simplified procedure delimits redundancy and duplication in administration. Given the history of negotiations over the sand dunes region and the number of times negotiations have halted because of a lack of political or economic support, there is a primary concern to improve the working relationship between the two parties for successful implementation of a co-stewardship arrangement.

Co-stewardship involves the negotiation of an agreement, implementing the agreement and subsequent decision-making, and monitoring the agreement to ensure the management system meets the needs of the land and people involved in managing how the land is used. The involvement of a third party to chair the co-stewardship arrangement who is respected by Fond du Lac Denesuline Nation, wildlife biologists, and provincial government representatives would facilitate the negotiation process. A clear management arrangement would address the division of responsibilities directly rather than recommend a plan in the future to decide the division of management responsibilities. Where a gradual or immediate devolution of administrative, technical, or professional responsibilities is negotiated there would need to be a clear method to transfer ownership of responsibilities. A significant factor to successful co-stewardship would require recognition of the agreement within policy and legislation.

The unique opportunity to establish a co-stewardship arrangement which takes into account Fond du Lac Denesuline has created potential to establish a new management framework based on the success of co-stewardship arrangement. There is also potential to establish a nested co-stewardship arrangement involving site designation and management guidelines from protected area strategies outside of Saskatchewan. A prominent caution to a nested co-stewardship arrangement is the potential for bureaucratic over-burden where bureaucratic procedures overlap and administrative responsibilities are duplicated. Possible solutions would be to create a co-stewardship arrangement with a clear definition of management responsibility before planning and management implementation occur and to use only one bureaucratic procedure and protocol to approve management decisions.

## 5.2 Recommended Legislation and Policy Changes

As co-stewardship is not addressed as a management system within existing provincial policy or legislation structures, a diversity of policy changes could affect the ability of Fond du Lac Denesuline to have a larger role in management and the protection of lands and resources. Indigenous knowledge that teaches the Denesuline management system forms a knowledge base from which to make decisions and establishes the Denesuline management system as management through the practice of traditional land use. The acknowledgement of variations in decision-making methods, the structure of the co-stewardship arrangement, and a bureaucratic procedure that reduces redundancy in legislation and policy are elements of successful co-stewardship for Saskatchewan. Acknowledgement of these elements in legislation and policy would have an impact on the future knowledge base about how people and the land relate.

There is a gap in cooperative management theory regarding the evaluation of existing management arrangements, particularly with reference to the protection of cultural resources. International programs such as UNESCO's World Heritage Sites designation, the International Union for the Conservation of Nature protected areas definitions and guidelines, the Canadian Heritage Rivers designation, and cultural resource protection principles and policies contained within the *Canada National Parks Act*, *Canada National Historic Sites Act*, and *Canada Marine Conservation Areas Act* all contain guidelines that provide direction to the management of lands as a cultural resource. In Canada, the national government began discussing the protection of cultural resources in the 1990's. While some legislative and policy initiatives are in place, there is a lack of awareness to apply policy and there is a need for training to build expertise in

the protection of cultural resources (Thomas 2004). The involvement of Fond du Lac Denesuline in the protection of cultural resources in Saskatchewan is a primary aspect of co-stewardship and the development of co-stewardship arrangement would benefit significantly from an in-depth review of existing management regimes.

Amendments to the *Government of Saskatchewan Heritage Property Act* to outline how northern lands can be designated through independent proposals submitted by First Nations organizations would provide a mechanism to protect lands that cannot be clearly designated through an existing piece of provincial legislation. It would also allow for First Nations to independently manage a heritage property and with changes to the *Act*, decisions could be implemented without ministerial authority to approve or override a management decision about the types of activities that could occur there. An independent proposal would be researched, prepared and submitted by the First Nation or by a third party hired by the First Nation and would not be negotiated through a government lead process.

Recommended amendments to the *Government of Saskatchewan Parks Act* would include an expansion of the historic site protection measures to consider the intrinsic values of land. This would include lands used for the practice of traditional resource use which may not be evidenced through physical structures or remains. For example, medicinal plant gathering sites are part of a sacred relationship between people and the land and are necessary for the maintenance of biological diversity and for potential healing of medical problems experienced by Fond du Lac Denesuline. An amendment to the *Parks Act* for a clause relating intrinsic values with historic site classification would

also address co-stewardship as a potential management arrangement to administer and manage historic sites.

### **5.3 International Recognition of Co-stewardship in Saskatchewan**

International recognition of a co-stewardship arrangement in Saskatchewan through the designation of the sand dunes region as a 'protected indigenous territory' could facilitate the evolution of protected areas management in Saskatchewan. Existing programs and guidelines throughout the world have taken different approaches to management decision-making and the involvement of local peoples in management. It is not the type of site designation that is the concern, rather it is the division of administrative and management responsibilities and how those responsibilities are implemented that provides direction to future management initiatives. The evaluation of protected areas management systems through theoretical research and case study reviews would prevent a reinvention of the same management tools and techniques under new names and bureaucratic procedures. Developing a set of indicators or a checklist of factors to consider measured by specific criteria found in previous management arrangements fosters the growth of protected areas management thinking.

Co-stewardship in Saskatchewan is in the development and negotiation stage and the vision of Fond du Lac Denesuline to have a larger role in management is supported through the Denesuline management system and indigenous knowledge about the land that is associated with people, the land and their relationship to the land. International directives to involve indigenous peoples in land and resource management and the planning and management of protected areas coincides with recommendations to



acknowledge indigenous knowledge about the land and to improve the relationship between indigenous peoples, scientists, government agencies, industry and non-government agencies. In Canada, recommendations calling for cooperative management from the Report of the Royal Commission on Aboriginal Peoples indicate the need to involve Fond du Lac Denesuline Nation in the co-stewardship of the sand dunes region. Co-stewardship in Saskatchewan is an opportunity to share knowledge about the land, acknowledge shared objectives, and recognize differences within a management framework guided by the principle of sustainable resource use.



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**Appendix A: Memorandum of Agreement (Reproduced with permission of Fond du Lac Denesuline Nation 2002)**

**MEMORANDUM OF AGREEMENT**

BETWEEN:

FOND DU LAC DENESULINE NATION,  
GENERAL DELIVERY  
FOND DU LAC, SASKATCHEWAN, SOJ OWO  
(Hereafter called "Fond du Lac")

OF THE FIRST PART

AND:

JENNIFER YANTZ,  
  
SASKATOON, SASKATCHEWAN,  
(Hereafter called "Jennifer")

OF THE SECOND PART

WHEREAS Fond du Lac wishes to collect, organize and present use & occupancy data and traditional ecological knowledge pertaining to the Sand Dunes with the objective of using the final research product for purpose of co-management of the Sand Dunes; and *stewardship*

WHEREAS Fond du Lac wishes to collaborate with Jennifer in designing and conducting the Sand Dunes Use & Occupancy Study (hereafter called the "Study"); and

WHEREAS Jennifer recognizes the sensitive nature of use and occupancy data and that Fond du Lac has the need to retain full control of all raw data produced by the Study in any form whatsoever, including any processed or semi-processed data.

WHEREAS Fond du Lac recognizes that Jennifer has the need to use some of the results and findings of the Study to satisfy certain academic and professional requirements.

WHEREAS Both Parties acknowledge the mutually beneficial nature of collaborating on the Study and agree to endeavour their best to collaborate in a spirit of mutual respect, openness and support.

THEREFORE IN CONSIDERATION OF the mutual covenants and agreements herein contained and subject to the terms and conditions hereinafter set-out, the Parties hereto agree as follows:

1. Jennifer agrees to provide services in accordance with the Terms of Reference in Schedule A hereto. Fond du Lac agrees to support Jennifer in her endeavours to provide said services in accordance with the Terms in Schedule B.
2. The Study will be conducted by a research team under the auspices of the Sand Dunes Committee. The Sand Dunes Committee will be selected by Fond du Lac and will consist of Fond du Lac community members, Prince Albert Grand Council. Jennifer will be the Study's Research Coordinator.
3. Jennifer is participating in the Study under the authority and direction of Fond du Lac and will work with Louis R. Mercredi and Kevin Mercredi, and they will be accountable to same for the services provided by Jennifer under this Agreement.
4. Jennifer's involvement in the Study has been approved by the University of Manitoba Joint Faculty Research Ethics Board and should Fond du Lac have concerns or complaints about Jennifer's professional conduct it may contact the Human Ethics Secretariat at (204) 474-7122.
5. If either Party wishes to terminate this Agreement, the parties agree to undertake the following:
  - (1) conduct meetings to try and resolve the issue in person
  - (2) if an understanding cannot be reached through these meetings, the parties agree to engage a third party mediator to assist in resolving the issue
  - (3) if at this stage an understanding cannot be reached, a written letter of termination must be sent to the other party. Upon cancellation, Jennifer will immediately return all originals and copies of all raw data, and all originals and copies of all processed or semi-processed data, in whatsoever forms they exist, including but not limited to audiocassettes, videocassettes, field notes, maps, overlays, transcripts, preliminary composite maps, interim reports, digital files, and data summaries.
6. Fond du Lac will retain full ownership of all raw data produced by the Study, in any form; whatsoever including but not limited to audiocassettes, videocassettes, field notes, maps, and overlays. Fond du Lac will retain full ownership of all processed or semi-processed data in any form whatsoever including but not limited to transcripts, preliminary composite maps, interim reports, digital files, and data summaries. Fond du Lac will retain full copyright and ownership of all research product, including but not limited to final composite maps, databases, and final reports.

7. Fond du Lac acknowledges that Jennifer has acquired funding and other forms of support for her participation in the Study from the Northern Scientific Training Program, Beverly Qamanirjuaq Caribou Scholarship, and the Social Sciences and Humanities Research Council. Fond du Lac also acknowledges that the funding agencies have imposed the following reporting responsibilities on Jennifer: To meet her obligation to the Northern Scientific Training Program Jennifer must make a poster presentation at a national conference in October 2003. She must submit a research report form upon completion of the Study. To meet her obligations to the Beverly Qamanirjuaq Caribou Scholarship, Jennifer must submit a research report in December 2003.
8. Fond du Lac acknowledges that for academic and professional development purposes Jennifer needs permission to analyze and report about the process concerning how the Study is conducted and its contribution and role in co-management, and that Jennifer will be producing a published Master's thesis to this end, as well as various published or unpublished articles, reports, interviews and lectures. Fond du Lac hereby grants said permission.
9. Fond du Lac also acknowledges that for academic and professional purposes Jennifer will need permission to present some of the **findings & results** of the Study, including summaries of traditional ecological knowledge and composite use & occupancy maps. Fond du Lac will grant said permission on a case-by-case basis. Jennifer acknowledges that Fond du Lac, through the authority of its Sand Dunes Committee or Chief and Council, will review drafts of each and every Study-related document or presentation (cf. Clause 7,8 and 9) she intends for public domain purposes, with special attention to documents that report on findings and results (Clause 9).  
Fond du Lac retains sole authority to amend presentations of findings and results in a manner that satisfies its requirements vis-à-vis the protection of sensitive data and the honouring of confidentiality commitments it makes to its members (cf. Clause 13). Methods for protecting mapped data include but are not limited to the use of buffer zones around certain categories of sites, and the merging of interview guide categories.
10. Both parties agree that all of Jennifer's requests for permission to release materials to the public domain (cf. Clause 7,8, and 9) and all of Fond du Lac's approvals will be made in written form.
11. Jennifer agrees that all her use of materials generated by the Study will give due credit to the final Study report and to Fond du Lac as holder of the copyright.
12. Jennifer agrees that she will not use any of the material produced by the Study for purposes of direct personal monetary gain.

13. Both Parties agree to the following confidentiality measures:

- (1) no person may look at a participant's (or a group of participants') individual (or group) overlays, or listen to an interview audiocassette, videocassette, or disc without the participant's (participants') written permission. The same applies to all processed and semi-processed data. The only exceptions pertain to those individuals who have been charged by Fond du Lac to conduct the Study and process the data;
- (2) the set of maps that will appear in the report(s) and presented at meetings will not display participants' names;
- (3) the final report(s) will have participants' names in them, but access to the report(s) will be strictly controlled by Fond du Lac and will be used only for advancing the interests of the community in its efforts to manage and protect the Sand Dunes.

14. Jennifer agrees that she will consider all information, communications and materials obtained pursuant to this Agreement to be privileged and the property of the Fond du Lac and fully confidential. As such, she shall not disclose same to any party whatsoever, including not limited to the funding agencies, during the term of this Agreement or any time thereafter, without the prior consent of Fond du Lac.

15. All communications relating to the Study to any third party (including funders) will be approved by Fond du Lac prior to release.

16. Time shall be of the essence of this Agreement.

17. This Agreement will be governed by the Laws of Saskatchewan.

18. This Agreement will be effective from September 1, 2002, until December 31, 2003.

19. This Agreement shall ensure to the benefit of and be binding upon all successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the Parties do sign this Agreement in the presence of the witness of this 15<sup>th</sup> day of December 2002.

**FOND DU LAC DENESULINE NATION**

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Chief Edward Martin

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Jennifer Yantz

### SCHEDULE: A

Jennifer will, in close consultation with Fond du Lac, design a Study methodology and research instrument(s) in a manner ensuring that the Study's primary objective is successfully met.

Jennifer will act as Study's project manager and coordinate the research and research team to ensure the goals and objectives set out in the research proposal are met.

Jennifer will provide information and advice pertaining to all aspects attendant to the Study.

Jennifer will provide interim and final Study reports as requested by Fond du Lac.

Jennifer will help organize a community meeting for purposes of presenting and verifying the Study's preliminary findings, as well as a community meeting for purpose of presenting the final report and findings.

### SCHEDULE: B

Fond du Lac will take all reasonable steps within its means to support Jennifer in undertaking her responsibilities as research coordinator.

Fond du Lac will organize and actively participate in meetings and workshops deemed necessary by Jennifer, and will organize and support field excursions to the study area on an as needed basis. Fond du Lac will endeavour to do its utmost in garnering community support for the data collection phase of the Study through the use of group meetings, individual interviews and field trips to the study area.

Fond du Lac will give Jennifer reasonable advance notice when making requests for information and advice and when setting deadlines for deliverables such as interim and final reports.

Fond du Lac will replicate all raw data for security purposes, and will arrange for long-term archiving of originals and copies in secure, separate locations.

Fond du Lac will take lead role in organizing the necessary meetings in Fond du Lac.

**ADDENDUM TO AGREEMENT**

BETWEEN:

FOND DU LAC DENESULINE NATION  
GENERAL DELIVERY  
FOND DU LAC, SASKATCHEWAN      S0J 0W0  
(Hereinafter called 'Fond du Lac')

OF THE FIRST PART

AND:

JENNIFER YANTZ  
SASKATOON, SASKATCHEWAN  
(Hereinafter called 'Jennifer')

OF THE SECOND PART

WHEREAS Fond du Lac and Jennifer drafted and signed a formal Memorandum of Agreement to her participation and responsibilities in the Sand Dunes Use & Occupancy Study; and

WHEREAS the original Memorandum of Agreement spanned a timeframe of September 1, 2002 to December 31, 2003 (clause 18);

THEREFORE IN CONSIDERATION OF the mutual covenants and agreements herein contained and subject to the terms and conditions hereinafter set-out, the Parties hereto agree as follows:

**20. To extend the terms and conditions listed in the Memorandum of Agreement and Schedule A and Schedule B, to April 30, 2004.**

IN WITNESS WHEREOF, the Parties do sign this Agreement in the presence of the witness of this 15<sup>th</sup> day of November 2003.

FOND DU LAC DENESULINE NATION

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Chief Edward Martin

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Jennifer Yantz

## **Appendix B: Interview Guide (Source: Yantz 2003)**

### **Interview Guide: Part I**

#### **1. Participant Information**

- 1.A. What is your first and last name?
- 1.B. What year were you born? Where?
- 1.C. Are you married? If yes, what is your spouse's first and last name?
- 1.D. What year was your spouse born? Where?
- 1.E. What are your parent's first/last names?
- 1.F. What are your grandparent's first/last names?
- 1.G. Do you take your family out on the land with you?
- 2.A. How much time did you spend on the land this year?
  - Day trips
  - Mostly for a week or more at a time
  - More than half your time on the land and the other half in town
- 2.B. How much time have you spent in the sand dunes this year?
  - Day Trips
  - More than one day trips
  - Mostly for a week or more at a time
- 2.C.1. Have you ever spent time in the sand dunes some other time than this year? If yes, show me places where? Was it in a log cabin, tent frame, pillow house or teepee?  
(Mark CB for cabin, TE for tent, PH for pillowhouse, TP for teepee, X for other overnight site)
- 2.C.2. How old were you?
- 2.C.3. Who was with you?
- 2.C.4. What did you do when you were there?
- 2.C.5. How long did you stay there during that time?
- 2.C.6. Have you or anyone you know ever built log cabins, tent frames, pillow houses or teepees in the sand dunes? Where? When? How?

### **Interview Guide: Part II**

#### **Large Game Animals**

##### **3. Barren Ground Caribou & Woodland Caribou**

BGC / WLC

(Go through all questions separately for both barren ground caribou and woodland caribou)

- 3.1. Have you ever killed barren ground caribou / woodland caribou in the sand dunes? If yes, show me places where you killed barren ground caribou / woodland caribou? How do you hunt for barren ground caribou / woodland caribou? What time of the season did you go hunting? Why?  
(Label BGC for barren-ground caribou or WLC woodland caribou)
- 3.2. Do you know of other people that killed barren ground caribou / woodland caribou in the sand dunes? If yes, show me the places where?

- 3.3. Mark the area and/or the routes where you have traveled on the land to hunt barren ground caribou / woodland caribou (Label TR for travel)
- 3.4. What do people use the different parts of the barren ground caribou / woodland caribou for? How do you prepare it? (Like antlers, caribou skull, blood, bone marrow, hide, hooves, sinew, bones, meat)
- 3.5. Is there a time when you could not hunt barren ground caribou / woodland caribou? Why? Where? When?
- 3.6. Are there feeding grounds for barren ground caribou / woodland caribou in the sand dunes? Where? What time of year was it when you saw the area being used? (Label BGC\$ / WLC\$ for barren ground caribou / woodland caribou feeding grounds)
- 3.7. What kinds of foods do the barren ground caribou / woodland caribou eat? (Plants, leaves, branches, moss)
- 3.8. Are there barren ground caribou / woodland caribou breeding grounds in the sand dunes? Where? What time of year was it when you saw the area being used? (Label BGC\* / WLC\* for barren ground / woodland caribou breeding grounds)
- 3.9. Are there places used by barren ground caribou / woodland caribou for ice crossings in the sand dunes? Where? What time of year was it when you saw the area being used? (Label BGC+/ WLC+ for barren ground / woodland caribou ice crossing)
- 3.10. How do the barren ground caribou / woodland caribou share the same space with other animals?
- 3.11. What kind of things do the barren ground caribou / woodland caribou stay away from? (Developments) Why? Why do barren ground caribou / woodland caribou avoid roads?

#### 4. *Moose*

MO

- 4.1. Have you ever killed moose in the sand dunes? If yes, show me places where you killed moose? How do you hunt for moose? What time of the year did you go hunting? Why? (Mark MO for moose beside each point)
- 4.2. Do you know of other people that have killed moose in the sand dunes? If yes, show me the places where?
- 4.3. Mark the area and/or the routes where you have traveled on the land to hunt moose (Label TR for travel)
- 4.4. What do people use the different parts of the moose for? How do you prepare it? (antlers, caribou skull, blood, bone marrow, hide, hooves, bones, meat)
- 4.5. Is there a time when you could not hunt moose? Why? Where? When?
- 4.6. Have you seen moose feeding in the sand dunes? Where? What time of year was it when you saw the area being used? (Label MO\$ for moose feeding ground)
- 4.7. What kinds of foods do the moose feed on? (Plants, leaves, branches, moss)
- 4.8. How do the moose share the same space with other animals?
- 4.9. What kind of things do moose stay away from? (developments) Why?

#### 5. *Whitetail Deer & Mule Deer*

WD / MD

(Go through all questions separately for both whitetail deer and mule deer)

- 5.1. Have you ever killed whitetail deer / mule deer in the sand dunes? If yes, show me the places where you killed whitetail deer / mule deer? How do you hunt whitetail deer / mule deer? What time of the season did you go hunting? Why?



(Mark WD for whitetail deer and MD for mule deer beside each point)

5.2. Do you know of other people that killed whitetail deer / mule deer in the sand dunes? If yes, show me the places where?

5.3. Mark the area and/or the routes where you have traveled on the land to hunt whitetail deer / mule deer (Label TR for travel)

5.4. What do people use the different parts of the whitetail deer / mule deer for? How do you prepare it? (antlers, skull, blood, bone marrow, hide, hooves, bones, meat)

5.5. Is there a time when they could not hunt whitetail deer / mule deer? Why? Where? When?

5.6. Have you seen whitetail deer / mule deer feeding in the sand dunes? Where? What time of year was it when you saw the area being used?

(Label WD\$ / MD\$ for whitetail deer / mule deer feeding ground)

5.7. What kinds of foods do the whitetail deer / mule deer feed on?

(Plants, leaves, branches, moss)

5.8. How do deer share the same space with other animals?

5.9. What kinds of things do whitetail deer / mule deer stay away from? (Developments) Why?

## **6. Black Bear**

BB

6.1. Have you ever killed black bear in the sand dunes? If yes, show me the places where you killed black bear? How do you hunt bear? What time of the season did you go hunting? Why?

(Mark BB for black bear beside each point)

6.2. Do you know of other people that killed black bear in the sand dunes? If yes, show me the places where?

6.3. Mark the area and/or the routes where you have traveled on the land to hunt black bear (Label TR for travel)

6.4. What do people use the different parts of the bear for? How do you prepare it? (skull, blood, bone marrow, organs, hide, bones, fat, meat)

6.5. Why is the black bear important to you?

6.6. Is there a time when you could not kill any bear? Why? Where? When?

6.7. Do you know of any places where there are bear dens in the sand dunes?

If yes, show me where? (Label BD for bear den)

6.8. Have you seen the black bear feeding in the sand dunes? Where? What time of year was it when you saw the bear feeding? (Label BB\$ for black bear feeding ground)

6.9. What kinds of foods does the black bear eat? (berries, carrion, fish, small game animals)

6.10. How does the bear share the same spaces with other animals?

6.11. What kinds of things do black bears stay away from? (developments) Why?

## **Small Game Animals**

### **7. Porcupine**

PR

7.1. Have you ever killed porcupine in the sand dunes? If yes, show me the places where? How do you hunt porcupine? What time of year did you go hunting? Why?

(Label PR for porcupine beside each point)

- 7.2. Mark the area and/or the routes where you have traveled on the land to hunt porcupine (Label TR for travel)
- 7.3. What do people use the different parts of the porcupine for? How do you prepare it? (quills, bones, meat)
- 7.4. Is there a time when they could not hunt porcupine? Why? Where? When?
- 7.5. Have you seen areas where the porcupine feed in the sand dunes? Where? What time of year was it when you saw the area being used?  
(Label PR\$ for porcupine feeding area)
- 7.6. What kinds of foods do porcupine feed on?
- 7.7. How does the porcupine share the same space with other animals?
- 7.8. What kinds of things does the porcupine stay away from? (developments) Why?

## **Furbearers**

### **8. Beavers**

BV

- 8.1. Have you ever killed beaver in the sand dunes? If yes, show me the places where? How do you trap beaver? (shot, coney-bear, leg hold, snare) What time of the year did you go trapping? Why?  
(Label BV for beaver beside each point)
- 8.2. Mark the area and/or the routes where you have traveled on the land to hunt beaver (Label TR for travel)
- 8.3. What do people use the different parts of the beaver for? How do you prepare it? (skull, hide, meat, fat, bones, tail)
- 8.4. Is there a time when you could not kill any beaver? Why? Where? When?
- 8.5. What kinds of foods does the beaver eat?
- 8.6. Are there any beaver lodges and dams in the sand dunes? If yes, show me the places where? (Mark BVL for beaver lodge and BVA for beaver dam)
- 8.7. How does the beaver share the same spaces with other animals? (muskrat, otter)
- 8.8. What kinds of things does the beaver stay away from? Why?

### **9. Muskrat**

MU

- 9.1. Have you ever killed muskrat in the sand dunes? If yes, show me the places where? How do you trap muskrat? (coney-bear, leg hold, snare) What time of year did you go trapping? Why?  
(Label MU for muskrat beside each point)
- 9.2. Mark the area and/or the routes where you have traveled on the land to hunt muskrat (Label TR for travel)
- 9.3. What do people use the different parts of the muskrat for? How do you prepare it? (skull, hide, bones, meat)
- 9.4. Is there a time when you could not kill any muskrat? Why? Where? When?
- 9.5. What kinds of foods does the muskrat eat?
- 9.6. How does the muskrat share the same spaces with other animals?
- 9.7. What kinds of things does the muskrat stay away from? Why?

## **10. Wolf**

WO

**10.1.** Have you ever killed wolf in the sand dunes? If yes, show me the places where? How do you hunt wolf? What time of the year did you go hunting? Why?

(Label WO for wolf beside each point)

**10.2.** Mark the area and/or the routes where you have traveled on the land to hunt wolf (Label TR for travel)

**10.3.** What do people use the different parts of the wolf for? How do you prepare it? (skull, paws, blood, bone marrow, bones, hide, meat)

**10.4.** Is there a time when you could not kill any wolf? Why? Where? When?

**10.5.** Why is the wolf important to you?

**10.6.** Have you ever seen wolves feeding in the sand dunes? Where? What time of year when you saw the area being used?

(Label WO\$ for wolf feeding area)

**10.7.** What kinds of foods does the wolf eat? (carrion, small game, mice)

**10.8.** How does the wolf share the same spaces with other animals? (caribou)

**10.9.** What kinds of things do the wolves stay away from? (developments, humans) Why?

## **11. Otter**

OT

**11.1.** Have you ever killed otter in the sand dunes? If yes, show me the places where? How do you trap otter? What time of year did you trap otter? Why?

(Label OT for otter beside each point)

**11.2.** Mark the area and/or the routes where you have traveled on the land to hunt otter (Label TR for travel)

**11.3.** What do people use the different parts of the otter for? How do you prepare it? (hide, bones, meat)

**11.4.** Is there a time when you could not kill any otter? Why? Where? When?

**11.5.** What kinds of foods does the otter eat?

**11.6.** How does the otter share the same spaces with other animals? (beaver, muskrat)

**11.7.** What kinds of things does the otter stay away from? (developments, boats) Why?

## **12. Lynx**

LX

**12.1.** Have you ever killed lynx in the sand dunes? If yes, show me the places where? How do you hunt lynx? (shot, coney-bear, leg-hold, snare) What time of the year did you go hunting? Why?

(Label LX for lynx beside each point)

**12.2.** Mark the area and/or the routes where you have traveled on the land to hunt lynx (Label TR for travel)

**12.3.** What do people use the different parts of the lynx for? How do you prepare it? (skull, fur, hide, bones, bone marrow, blood, meat, paws)

**12.4.** Is there a time when you could not kill any lynx? Why? Where? When?

**12.5.** What kinds of foods does the lynx eat? (mice, squirrel, fish)

**12.6.** How does the lynx share the same spaces with other animals?

**12.7.** What kinds of things does the lynx stay away from? (developments, roads) Why?

### **13. Marten**

MA

**13.1.** Have you ever killed marten in the sand dunes? If yes, show me the places where? How do you hunt marten? What time of year did you go hunting? Why?

(Label MA for marten beside each point)

**13.2.** Mark the area and/or the routes where you have traveled on the land to hunt marten (Label TR for travel)

**13.3.** Is there a time when you could not kill any marten? Why? Where? When?

**13.4.** What do people use the different parts of the marten for? How do you prepare it? (fur, hide, meat, bones)

**13.5.** What kinds of foods does the marten eat?

**13.6.** How does the marten share the same spaces with other animals? (fisher, mink)

**13.7.** What kinds of things does the marten stay away from? (developments, bear dens)

### **14. Mink**

MN

**14.1.** Have you ever killed mink in the sand dunes? If yes, show me the places where? How do you trap mink? What time of year did you go trapping? Why?

(Label MN for mink beside each point)

**14.2.** Mark the area and/or the routes where you have traveled on the land to mink (Label TR for travel)

**14.3.** Is there a time when you could not kill any mink? Why? Where? When?

**14.4.** What do people use the different parts of mink for? How do you prepare it? (fur, hide, meat, bones)

**14.5.** What kinds of foods does the mink eat?

**14.6.** How does the mink share the same spaces with other animals? (marten, fisher, weasel)

**14.7.** What kinds of things does mink stay away from? (developments, wolf trails)

### **15A. Fisher**

FS

**15A.1.** Have you ever killed fisher in the sand dunes? If yes, show me the places where? How do you trap fisher? What time of year did you go trapping? Why?

(Label FS for fisher beside each point)

**15A.2.** Mark the area and/or the routes where you have traveled on the land to hunt fisher (Label TR for travel)

**15A.3.** Is there a time when you could not kill any fisher? Why? Where? When?

**15A.4.** What do people use the different parts of fisher for? (fur, hide, bones, meat)

**15A.5.** What kinds of foods does the fisher eat?

**15A.6.** How does the fisher share the same spaces with other animals?

**15A.7.** What kinds of things does fisher stay away from? Why?

### **15B. Rabbit**

RB

**15B.1.** Have you ever killed rabbit in the sand dunes? If yes, show me the places where? How do you hunt rabbit? What time of year did you go trapping? Why?

(Label RB for rabbit beside each point)

**15B.2.** Mark the area and/or the routes where you have traveled on the land to hunt rabbit (Label TR for travel)

**15B.3.** Is there a time when you could not kill any rabbit? Why? Where? When?

**15.4.** What do people use the different parts of rabbit for? How do you prepare it?  
(fur, hide, bones, meat)

**15.5.** What kinds of foods does the rabbit eat?

**15.6.** How does the rabbit share the same spaces with other animals?

**15.7.** What kinds of things does rabbit stay away from? Why?

**16. Weasel**

WE

**16.1.** Have you ever killed weasel in the sand dunes? If yes, show me the places where?  
How do you trap weasel? What time of year did you go trapping? Why?  
(Label WE for weasel beside each point)

**16.2.** Mark the area and/or the routes where you have traveled on the land to hunt weasel  
(Label TR for travel)

**16.3.** Is there a time when you could not kill any weasel? Why? Where? When?

**16.4.** What do people use the different parts of weasel for? How do you prepare it?  
(hide, bones, meat)

**16.5.** What kinds of foods does the weasel eat?

**16.6.** What kinds of things does weasel stay away from? Why?

**17. Squirrel**

SQ

**17.1.** Have you ever killed squirrel in the sand dunes? If yes, show me the places where?  
How do you trap squirrel? What time of year was it when you went trapping? Why?  
(Label SQ for squirrel beside each point)

**17.2.** Mark the area and/or the routes where you have traveled on the land to hunt squirrel  
(Label TR for travel)

**17.3.** Is there a time when you could not kill any squirrel? Why? Where? When?

**17.4.** What do people use different parts of the squirrel for? How do you prepare it?  
(fur, hide, tail, bones, meat)

**17.5.** What kinds of foods does the squirrel eat?

**17.6.** How does the squirrel share the same spaces with other animals?

**17.7.** What kinds of things does the squirrel stay away from? Why?

**18. Birds**

GE / DU / BD

**18.1.** Are there any kinds of birds that are very important to you? Why?

**18.2.** Have you ever killed geese, ducks, or other birds in the sand dunes? If yes, show me the places where? How did you learn to hunt them? What time of year did you go hunting? Why?

(Label GE for geese, DU for ducks, and BI for other birds beside each point)

**18.3.** What do people use the different parts of geese, ducks, or other birds for?  
(feathers, bones, fat, meat)

**18.4.** Have you ever gathered geese, duck or other bird eggs in the sand dunes? If yes, show me where? What time of year do people gather eggs? Why?  
(Label O for egg gathering sites)

**18.5.** Is there a time when they could not hunt geese, ducks or other birds? Why? Where? When?

**18.6.** What time of year do the geese and ducks arrive in the sand dunes? When do they leave?

18.7. Are there nesting areas for geese, ducks, and other birds in the sand dunes? If yes, show me the places where?  
(Label NE for nesting areas)

### 19. Fish

FISH

19.1. Have you ever fished in the sand dunes? If yes, show me the places where? What kinds of fish did you kill? How did you learn to fish? What time of the season did you go fishing? Why?

(Label FISH for all species; WF for whitefish; LT for lake trout; NP for northern pike (jack fish); WL for walleye (pickerel); BU for burbot; SU for suckers; MR for mariah)

19.2. Mark the area and/or the routes where you have traveled on the water to fish

(Label TR for travel)

19.3. Is there a time where you could not kill any fish? Why? Where? When?

19.4. Why are fish important to you?

19.5. When you used the fish for food how did you prepare it?

19.6. Do you know of any fish spawning areas in the sand dunes? If yes, show me where?

(Label FS for fish spawning areas)

19.7. Have you ever used fish weirs? If yes, show me where? When? How do you build a fish weir?

(Label FW for fishing weir)

19.8. Have you seen changes in the fish in the last 20 years? What changes? Why did the changes happen?

## Interview Guide: Part III

### 20. Plants

20.1. Have you ever gathered plants used for food, making things, medicine, or ceremonial use in the sand dunes? If yes, show me the places where? How did you learn to gather plants? What time of year was it when you gathered plants? Why? How are they prepared?

(Mark FD for food; TECH for technology; M for medicine; CT for cultural or ceremonial)

20.5. Do you know of other people that gathered plants in the sand dunes? If yes, show me the places where?

20.6. Mark the area and/or the routes where you have traveled on the land to gather plants  
(Label TR for travel)

20.7. Are there any plants in the sand dunes that are very important to you? Why?

### 21. Special Sites

21.1. Have you gathered berries in the sand dunes?

BE

If yes, show me the places where? How did you learn to gather berries? What kinds of berries did you gather? What time of year was it when you gathered berries? Why? How are they prepared?

(Label BE for berries)

21.2. Are there sacred areas in the sand dunes?

SS

If yes, show me the places where? (healing grounds, waters, religious retreats)

(Label SS for sacred site beside the point)

**21.3.** Do you know of any birth sites of people from your community in the sand dunes? If yes, show me the places where? Who was born there? BS

(Label BS for birth site beside the point)

**21.4.** Do you know of any burial sites where people from your community passed away in the sand dunes? If yes, show me the places where? Who passed there? DS

(Label DS for death site beside the point)

**21.5.** Have you ever gathered clay, soils, rocks in the sand dunes? CRS  
If yes, show me the places where? What did you use them for?

(Label CRS for clay, rock or soil beside the point)

**21.6.** Should any of these sites be protected? Why?

## **22. Conclusion**

**22.1.** Do you think it would be good to share this research project with youth? Why? How?

**22.2.** Would it be good for the community to remember Denesuline names of places? (lakes, rocks, other features) Why? How can we remember Denesuline names?

**22.3.** What would you like to see happen to the sand dunes for the people of Fond du Lac?

**22.4.** Before we complete the interview, do you have any questions about this project or anything you would like to say about the interview?

**Appendix C: Participant Permission Form** (Source: Fond du Lac Denesuline Nation  
2004 : 69).

**ATHABASCA USE & OCCUPANCY MAPPING PROJECT**

**Permission Form**

The Athabasca Sand Dunes Use & Occupancy Mapping Project is an understanding of Fond-du-Lac Denesuline Nation Band Council. The purpose of the Project is to map areas that members of Fond-du-Lac Denesuline Nations', use of the land for trapping, hunting, fishing, gathering and other activities within their lifetime. The information from everybody's individual maps will be combined by the Fond-du-Lac Project staff into one set of maps that speaks for our community as a whole. The information is to be used by the Fond-du-Lac Sand Dunes Committee as a tool for planning for the Athabasca Sand Dunes.

I \_\_\_\_\_, (print participants name)  
agree to participate in the Athabasca Sand Dunes Use and Occupancy Project, and I agree that the Sand Dunes Committee and leadership of Fond-du-Lac Band, may use the information for the promotion and advancement of the education, interests, jurisdiction, rights and title of our Athabasca community. I understand that I may withdraw from the study at any time and/or refrain from answering any questions without prejudice or consequence. In the case of my death, my immediate family member will receive my personal mapping information.

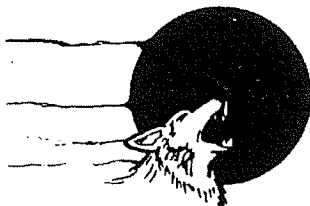
Date: \_\_\_\_\_ Participant's PIN # \_\_\_\_\_

Participant's Signature: \_\_\_\_\_

Interviewer's Signature: \_\_\_\_\_



Appendix D: Partnership Study: Project Report Approval (Source: Fond du Lac  
Denesuline Nation 2004: 88)



Fond Du Lac First Nations

ADMINISTRATION OFFICE  
BOX 211  
FOND DU LAC, SASKATCHEWAN  
S0J 0W0  
Phone: (306) 686-2102 Fax: 686-2040

May 17, 2004

Dear Ms. Yantz,

This letter signifies that Fond du Lac Denesuline Nation Band Council approves of the document entitled: "Respecting and Preserving Fond du Lac Denesuline Indigenous Knowledge: THAI GAYE, Ethedustsél tûé". The document was completed through the Sand Dunes Use & Occupancy Mapping Project conducted at Fond du Lac Denesuline Nation, Saskatchewan. Fond du Lac Denesuline Nation retains full copyright ownership of this report.

This letter also affirms that Ms. Yantz, Research Coordinator, acted according to the terms and conditions of the Memorandum of Agreement signed by Fond du Lac Denesuline Nation and Jennifer Yantz for the period of September 1, 2002 to April 30, 2004.

If you have any questions, please do not hesitate to contact Chief Ed Martin, or Louie R. Mercredi, Lands and Resources Project Coordinator at (306) 686-2102.

Sincerely,

\_\_\_\_\_  
Chief Ed Martin, Chief-in-Council

\_\_\_\_\_  
Louie R. Mercredi, Project Coordinator

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Justin Mercredi, Councillor

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Georgie McDonald, Councillor

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Willie John Laurent, Councillor

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Caroline Isadore, Councillor

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Napoleon Paquette, Councillor

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Clifford Lidgrette, Councillor

## Appendix E: Partnership Study: Thesis Dissertation Approval



### Fond Du Lac First Nations

ADMINISTRATION OFFICE  
BOX 211  
FOND DU LAC, SASKATCHEWAN  
S0J 0W0  
Phone: (306) 686-2102 Fax: 686-2040

January 1, 2005

Dear Ms. Yantz,

This letter signifies that Fond du Lac Denesuline Nation Band Council approves of the Practicum Thesis entitled *"Indigenous Knowledge of the Land and Protected Areas: Fond du Lac Denesuline Nation and the Athabasca Sand Dunes, Saskatchewan"*. The Thesis Dissertation is based on the Sand Dunes Use & Occupancy Mapping Project conducted at Fond du Lac Denesuline Nation, Saskatchewan. This letter of approval also states permissions to use composite maps representing overnight sites, travel routes, large game hunting grounds, fishing grounds, trapping areas waterfowl and gathering areas. As part of the Memorandum of Understanding, copies of the Practicum Thesis will be sent to designates of Fond du Lac Denesuline Nation.

This letter also affirms that Ms. Yantz, Research Coordinator, acted according to the terms and conditions of the Memorandum of Agreement signed by Fond du Lac Denesuline Nation and Jennifer Yantz for the period of September 1, 2002 to April 30, 2004.

If you have any questions, please do not hesitate to contact Louie R. Mercredi, Lands and Resources Project Coordinator at (306) 686-2102.

Sincerely,

\_\_\_\_\_  
Allan Adam, Chief-in-Council

\_\_\_\_\_  
Justin Mercredi, Councillor

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Wine John Laurent, Councillor

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Napoleon Paquette, Councillor

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Georgie McDonald, Councillor

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Caroline Isadore, Councillor

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Clifford Lidguerre, Councillor

SERVING FOND DU LAC FIRST NATIONS