UNIVERSITY OF CALGARY

Past, Present, and Future Land Use of Swan River First Nation

by

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ABSTRACT

This dissertation examines past, present, and future land use of Swan River First Nation whose reserves are on the south central shore of Lesser Slake Lake, Alberta, Canada. In this dissertation the theoretical perspective of Indigenous archaeology is utilized as is an interdisciplinary approach whereby western science and traditional knowledge as well as social science and natural science are used. This dissertation presents how and where Swan River First Nation exercised their Treaty Rights to hunt, fish, trap, and gather in the past and documents baseline conditions regarding current infringements to Swan River First Nation's ability to practise these rights. It discusses the present context and issues associated with Aboriginal consultation in Alberta with regards to both infringements to Treaty Rights and archaeology. It also applies Swan River First Nation traditional knowledge to subarctic ethnoarchaeology. Finally, it creates a Treaty Rights based land use plan to ensure that Swan River First Nation can practise their rights into the future as well as a methodology for modeling high archaeological potential based on traditional land use and vegetation communities to be used in future archaeological research.

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The success of this project relied on the support of my supervisors Dr. B. Kooyman and Dr. E. Yeung and well as Chief L. Chalifoux of Swan River First Nation. In addition Darryel R. Sowan, Swan River First Nation's Consultation Unit, Swan River First Nation Council members as well as SpatialQ were essential to the completion of this project. Ultimately this project would not have been possible without the contributions from Swan River First Nation members.

DEDICATION

This dissertation is dedicated to Darryel R. Sowan as well as Swan River First Nation's Elders, community members, and youth.

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> Indigenous peoples have the right to practice and revitalize their cultural traditions and customs. This includes the right to maintain, protect and develop the past, present and future manifestation of their cultures, such as archaeological and historical sites, artifacts, designs, ceremonies, technologies and visual and performing arts. (United Nations General Assembly 2007, United Nations Declaration of the Rights of Indigenous Peoples)

CHAPTER 1. INTRODUCTION

The framework of this dissertation can best be described graphically in the form of a circle with a number of spokes radiating through it. On each end of each spoke is a different way of knowing, a different way of understanding and a different priority. These include:

- Western Science/ Traditional Knowledge
- Natural Sciences (botany, zoology, ecology)/ Social Sciences (archaeology, anthropology)

Woven through these spokes in a circular pattern is the temporal dimension of the past, present, and future. It is at the center of where the spokes overlap, and through a concurrent influence by the past, present, and future, that I am attempting to frame this dissertation. It is in this place that my dissertation benefits from the synergy of multi-vocality and interdisciplinary research. My methodological objectives were to present research that:

- contained multi-vocality;
- was interdisciplinary in nature; and
- covered diverse temporal dimensions.

Below the specific objectives of the dissertation will be outlined followed by why and to whom these objectives are relevant. Next is a discussion on why Swan River First Nation was selected/why they selected me for this research project and comments on the temporal sequence of the research. Finally a detailed outline and overview of the dissertation will be presented as will some of the broader contributions this research has to offer.

The specific objectives of this dissertation are as follows:

1. To document how and where Swan River First Nation exercised their Treaty Rights to hunt, fish, trap, and gather in the *past*
2. To document *present* or baseline conditions regarding infringements to Swan River First Nation's ability to practise their Treaty Rights to hunt, fish, trap, and gather
3. To discuss the *present* context and issues associated with Aboriginal consultation in Alberta with regards to both infringements to Treaty Rights and archaeology

4. To apply Swan River First Nation traditional knowledge to subarctic ethnoarchaeology to enhance current or *present* archaeological interpretation
5. To create a Treaty Rights based land use plan to ensure that Swan River First Nation can practise their rights into the *future*
6. To create a methodology for modeling high archaeological potential based on traditional land use and vegetation communities to be used in future archaeological research

Relevance

This research is very important to Swan River First Nation and the Province of Alberta (the Province) as Swan River First Nation is currently facing major infringements to practising their Treaty Rights in their traditional territory. As these rights are entrenched in section 35 of the Constitution, the honour of the Crown is at stake. More importantly, First Nations' cultural wellbeing is jeopardized when they are not able to practise their Treaty Rights to hunt, fish, trap, and gather. Through a documentation of past land use, current infringements to Treaty Rights, and issues with Aboriginal consultation in Alberta (designed to ensure that rights are not impacted), a Treaty Rights based land use plan is designed. This plan is designed to ensure continued ability to practise Treaty Rights. This plan is significant because it is the first of its kind in Alberta. This plan is timely as the Province is currently struggling with the inadequacies of its current Aboriginal Consultation Guidelines and Policy in the form of a review (the last two versions were rejected by the Treaty Chiefs of Alberta due to insufficient consultation). The Province also is currently wrestling with the formation of regional land use plans in Alberta. Swan River First Nation's Treaty Rights based land use plan will be submitted to the regional planners for consideration in the Province's regional land use plan.

This research is relevant to academia as an ethnoarchaeological research project has never before been completed in northern Alberta and also because archaeology is so poorly understood in this region of Canada. In addition, Aboriginal consultation with regards to archaeology is becoming an emergent issue in the province. Many First Nations would like to become more involved but, according to them, the Province is not making adequate

attempts at inclusion. Through ethnoarchaeological research a methodology is created whereby traditional knowledge and vegetation communities are utilized to map archaeological potential. This not only allows for improved archaeological survey but also provides an avenue for First Nations involvement in archaeological research in the province.

Why Swan River First Nation?

I undertook this research with Swan River First Nation largely because they selected me. Swan River First Nation leadership trusted me and respected my education and experience. As a result they were willing to engage in a relationship with me whereby I would conduct research to suite my academic goals while at the same time completing research of high priority to the nation. This nation was ideal to work with because of their chief's uncompromising vision to protect Treaty Rights. They also had a strong consultation department with excellent GIS capabilities and an archaeology component in their consultation policy.

In addition to this dissertation, I will provide Swan River First Nation with three additional documents:

1. a Swan River First Nation land use plan map with associated guidelines and policies;
2. addendums to Swan River First Nation's existing consultation guidelines and policy; and
3. a Swan River First Nation traditional land use study.

One of the most important areas where Swan River First Nation practises their Treaty Rights is in the Swan Hills. This is also home to the third largest oil deposit in Canada and receives additional impacts from forestry, agriculture, transmission and transportation corridors and tourism. This area was also impacted by a toxic release by the Alberta Special Waste Treatment Centre. Thus infringements on Swan River First Nation's ability to practise their Treaty Rights to hunt, fish, trap, and gather in the Swan Hills has reached a critical point.

The timing to work with Swan River First Nation was impeccable. Alberta's regional land use plans began in the 'lower Athabasca' and 'south Saskatchewan' regions and are not scheduled to begin in the 'upper Athabasca' area for quite some time. This has given Swan River First Nation the opportunity to create a comprehensive land use plan before the Province begins creating a plan for them. This is a unique opportunity for a nation to be prepared ahead of time where generally, due to a lack of time, funds, and capacity, they lag behind government deadlines sometimes resulting in the exclusion of their input.

Dissertation Outline

This dissertation examines past, present, and future land use of Swan River First Nation. It begins with a cultural, ecological, and industrial overview of Swan River First Nation's traditional territory in chapter 2 designed to provide some context. This is followed by a discussion of Indigenous archaeology and the emergence of traditional land use studies within the discipline of archaeology as well as an exploration of the concept of traditional knowledge, in chapter 3. Next is a methods section in chapter 4 that outlines the techniques used to collect traditional knowledge with Swan River First Nation members. The results section, chapter 5, documents how and where Swan River First Nation exercised their Treaty Rights to hunt, fish, trap, and gather in the past and is comprised mostly of quotes.

The discussion section is divided into four chapters. In chapter 6, present or baseline conditions regarding infringements to Swan River First Nation's ability to practise their Treaty Rights to hunt, fish, trap, and gather are documented. In addition the present context and issues associated with Aboriginal consultation in Alberta with regards to infringements to Treaty Rights are presented. In chapter 7 a Treaty Rights based land use plan is presented that is designed to ensure that Swan River First Nation can practise their rights into the future. In chapter 8 some archaeological signatures of subarctic land use are discussed and the effects of culture change on these signatures are explored. In addition the context of Aboriginal consultation with regards to archaeology is outlined. Finally in chapter 9 a methodology for modeling high archaeological potential based on traditional knowledge

and vegetation communities to be used in future archaeological research is presented. Conclusions are drawn in chapter 10.

Temporal Sequence

The results section of this dissertation represents the past as it documents how and where Treaty Rights were practised. This serves as the foundation for two separate streams through the present to the future that composes the discussion section of this dissertation. The first stream is relevant to Swan River First Nation and the Province and the second is relevant to academic archaeology.

The present section of the first stream (that is relevant to Swan River First Nation and the Province) documents current infringements to Treaty Rights as well as the current status of Aboriginal consultation in Alberta with regards to infringements to rights. The future section outlines a Treaty Rights based land use plan designed to ensure continued ability to practise rights. The past section influences the future land use plan by demonstrating important patterns, resources, and areas in Swan River First Nation land use. The present section influences the future land use plan by scoping the factors that have led to infringements to rights. Only after these issues have been identified can the future land use plan be designed in such a manner as to address these issues.

The present section of the second stream (that is relevant to academic archaeology) explores the application of Swan River First Nation traditional knowledge to subarctic ethnoarchaeology as well as the current context of Aboriginal consultation in Alberta as it pertains to archaeology. The future section outlines a methodology where traditional land use and plant communities are used in modelling high archaeological potential. The past section influences this model for future archaeological survey by illuminating what areas and what resources were used on the landscape and why. The present section also influenced the model for future archaeological survey through ethnoarchaeological research indicating relevance of traditional knowledge for future archaeological research and by demonstrating the current lack of First Nations' involvement in archaeology in the Province.

Broader Contributions

In addition to a number of specific contributions, this research also makes some broader contributions in the discipline of archaeology as outlined below. This research:

- demonstrates the application of the theoretical framework of Indigenous archaeology in northern Alberta;
- can serve as a model for the various contexts that traditional knowledge can be applied to including archaeology and land use planning; and
- provides a positive example of a research agenda that meets both the academic interests and requirements of the researcher and the vision and needs of a First Nation and could serve as a framework for future cooperation and research.

CHAPTER 2. ECOLOGICAL, INDUSTRIAL, AND CULTURAL CONTEXT

The following chapter provides a context for the rest of the dissertation by outlining the ecological, industrial, and cultural setting of Swan River First Nation's area of intense use within their traditional territory.

Ecological Context

Vegetation

The Lesser Slave Lake area is comprised of both the foothills natural region (upper and lower) and the boreal forest natural region (central mixedwood and dry mixedwood). (Latin plant names not listed below can be found in Table 2.1.) The lower foothills are composed of mixed forests of lodgepole pine, aspen, and white spruce, including balsam poplar in moist to wet sites and black spruce and tamarack in wet sites. Shrubs characteristically include low bush cranberry, prickly rose, green alder, and Canadian buffaloberry (*Shepherdia canadensis*). Forbs and grasses include wild sarsaparilla (*Aralia nudicaulis*), dewberry, marsh reed grass (*Calamagrostis Canadensis*), and hairy wild rye (*Elymus innovatus*) (Natural Regions Committee 2006). The upper foothills occur mostly along the Rocky Mountains with the Swan Hills as an outlier. It is dominated by closed canopied coniferous forests with lodgepole pine being the most prevalent tree species. White spruce is common and forms pure stands or mixed stands with lodgepole pine. Black spruce is common in wetlands and mixed with lodegpole pine on upland sites. The undestorey consists of ericaceous shrubs like Labrador tea, tall bilberry, and bog cranberry. Green alder is a common shrub and the forb and grass layer is not as diverse as the lower foothills (Natural Regions Committee 2006).

The central mixedwood is a mix of aspen-dominated deciduous stands, aspen-white spruce forests, and white spruce and jack pine stands on upland terrain. Wet, poorly drained fens and bogs overlie almost half the area and grasslands are very rare. Common community types include aspen and aspen–white spruce stands with understories of low bush

cranberry, prickly rose, green alder, Canada buffaloberry, hairy wild rye, bunchberry, wild sarsaparilla, and dewberry (Natural Regions Committee 2006). The dry mixedwood is characterized by aspen forests and cultivated landscapes, with fens commonly occurring in low-lying areas. Common community types include aspen with understories of beaked hazelnut, prickly rose, wild sarsaparilla, cream coloured vetchling (*Lathyrus ochroleucus*), purple peavine (*Lathyrus venosus*), and marsh reed grass (Natural Regions Committee 2006). See Figure 2.1.

Table 2.1 below outlines some important plant resources used by Swan River First Nation.

Table 2.1 Selected Plant Resources of the Lesser Slave Lake Region

Common Name	**Latin Name** (Johnson et al 1995 and Marles et al 2000)	**Cree Name** (Anderson 1982)	**Translation** (Anderson 1982)
TREES			
White spruce	*Picea glauca*	*minahik*	
Black spruce	*Picea mariana*	*minahik*	
Jack pine	*Pinus banksiana*		
Lodgepole pine	*Pinus contorta*		
Balsam fir	*Abies balsamea*	*pikew-ahtik*	
Tamarack	*Larix laricina*	*wakinakun*	
Balsam poplar	*Populus balsamifera*	*mayi metos*	
Aspen poplar, Trembling aspen, or Aspen	*Populus tremuloides*	*into metos wayakesk*	
White birch	*Betula papyrifera*	*wuskwiy-ahtik*	
SHRUBS			
Green alder	*Alnus crispa*	*atospe*	
Beaked hazelnut	*Corylus cornuta*	*pakanak*	
Willow	*Salix* spp.		

Diamond willow or Bebb willow	*Salix bebbiana*		
Red osier dogwood	*Cornus stolonifera*	*Mehwa pemakwa*	Red bent stems plant
Saskatoons	*Amelanchier alnifolia*	*saskawatoomina*	
Pincherry	*Prunus pensylvanica*	*pusawemina*	Tart berries
Chokecherry	*Prunus virginiana*	*takwahiminana*	Berries that are crushed
Prickly rose	*Rosa acicularis*	*kaminakuse*	Thorn plant
Western mountain ash	*Sorbus scopulina*		
Wild red raspberry	*Rubus idaeus*	*ayooskunak*	
Gooseberry	*Ribes oxyacanthoides*	*sapoominak*	Transparent berry
Wild black currant Wild red currant Skunk currant	*Ribes hudsonianum* *Ribes triste* *Ribes glandulosum*	*Muntominak* *Sikakominak* *Mehkominak*	Gods berries Skunk berries Red skunk berries
Low bush cranberry, High bush cranberry, or Mooseberry	*Viburnum edule*	*moosonina*	Moose berries
High bush cranberry or Pembina	*Viburnum opulus*	*nepiminana*	Summer berries
Common blueberry	*Vaccinium myrtilloides*	*enimina*	Healing berries
Tall bilberry	*Vaccinium membranaceum*		
Common Labrador tea	*Ledum/Rhododendron groenlandicum*	*muskekopukwa*	muskeg tea
Bog cranberry, Low bush cranberry, or Lingonberry	*Vaccinium vitis-idaea*	*weskemina*	Bitter berry
Common bearberry	*Arctostaphylos uva-*	*kin nikinin/*	Bear berry

	ursi	*muskomina*	
Common juniper	*Juniperus communis*	*kkewahtik*	Raven wood or shrub
Devil's club	*Oplopanax horridus*		
Round-leaved hawthorn	*Crataegus chrysocarpa*	*Misi kaminakuskose*	Large thorn plant
HERBACEOUS PLANTS			
Wild chives	*Allium schoenoprasum*	*wechekukose*	Stinking grass
Dewberry or Dwarf raspberry	*Rubus pubescens* and *Rubus arcticus*	*ayooskunak*	Soft berries
Wild strawberry and Woodland strawberry	*Fragaria virginiana* and *Fragaria vesca*	*otehiminipukos*	Heart berry
Cow parsnip	*Heracleum lanatum*	*pukwanahtik*	Tent like lead wood
Wild mint	*Mentha arvensis*	*amiskowehkuskwa*	Good tasting beaver plant
Common dandelion	*Taraxacum officinale*	*meyoskamewuskos*	Spring plant
Common yarrow	*Achillea millefolium*	*wapunewusk*	Single stem white flower
Wild aster	*Aster* sp.	*mistasakewusk*	Big love plant
Arrow-leaved coltsfoot	*Petasites sagittatus*	*piskete pukwa*	Individual leaf plant
Common nettle	*Urtica dioica*	*masan*	Stings and prickles
Wild sarsaparilla	*Aralia nudicaulis*		
Bunchberry	*Cornus canadensis*	*pihew mina*	Grouse berries
Northern valerian	*Valeriana dioica*		
Pitcher plant	*Sarracenia purpurea*	*ayekitas*	

Great bulrush	*Schoenoplectus acutus*	*wechahkamewuskwa*	
Rat root or Sweet flag	*Acorus americanus*	*wachuskomechiwin/ wehkes*	Rat food
Common sweet grass	*Hierochloe hirta* ssp. *arctica*	*wehkuskwa*	
Hare Bell or Blue Bell	*Campanula rotundifolia*	*kuskwasonapiskos*	Thimble plant
Seneca	*Polygala senega*	*menisehkes*	Seed plant
Winter green	*Pyrola asarifolia*	*amiskowehtawakewu skos*	Beaver ear plant
Sage	*Artemisia* sp.	*mostosowehkuskwa*	Good tasting cow plant
Yellow lady's slipper	*Cypripedium parviflorum* var. *pubescens*	*osawuskisinis*	Little yellow shoe
Early blue violet	*Viola adunca*	*mehkwakunuskos*	Little face plant
Honeysuckle	*Lonicera* sp.	*Payipahtik*	Hollow stem wood
Western dock	*Rumex occidentalis*	*Osaw ochepihk*	Yellow root
Cat tails	*Typha latifolia*	*otawuska*	Into the water plant
Ostrich fern	*Matteuccia struthiopteris*		
MOSSES			
Sphagnum moss	*Sphagnum* spp.		
FUNGI			
Diamond willow fungus	*Trametes suaveolens*	*wehkimasikun/posah kan*	To burn sweet smelling incense
Puff balls	*Lycoperdon perlatum*	*Mache-manitow o cha cha mosi kun*	Fungus devils snuff

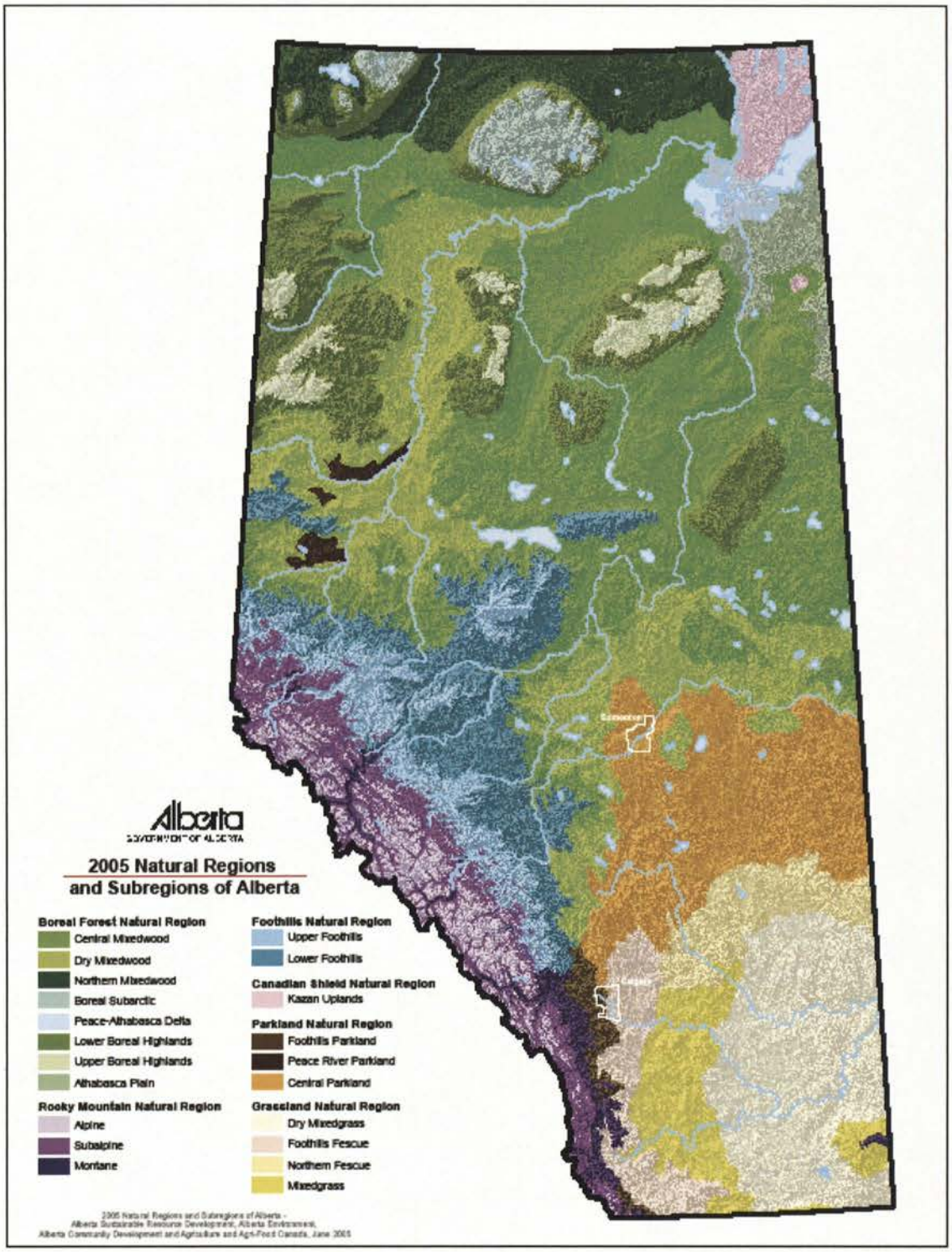

Figure 2.1 Natural Subregions of Alberta

Wildlife

The Lesser Slave Lake area is home to a diverse number of wildlife species as outlined in Table 2.2. Common, Latin and Cree names are only provided for species of particular significance to Swan River First Nation.

Table 2.2 Some Wildlife of the Lesser Slave Lake Region (Golder 2000)

Category	**Approximate Number of Species**	**Selected Species of Cultural Significance: Common and Latin Names**	**Selected Species: Cree Names** (AINA 1999)
Amphibians and Reptile	6		
Shrews	5		
Bats	5		
Rabbits and Rodents	14	Snowshoe hare (*Lepus americanus*) Red squirrel (*Tamiasciurus hudsonicus*) Beaver (*Castor canadensis*) Muskrat (*Ondatra zibethicus*) Porcupine (*Erethizon dorsatum*)	*Wapoose* *Ang wa chas* *Amisk* *Wa chusk* *Kakwa*
Carnivores	6	Coyote (*Canis latrans*) Grey wolf (*Canis lupus*) Red fox (*Vulpes vulpes*) Black bear (*Ursus americanus*) Grizzly bear (*Ursus horribilis*) Lynx (*Lynx canadensis*)	*Meeschagans* *Ma he kun* *Makisees* *Kus kit ew muskwa* *Mistahia* *Pis oo*
Mustelids	9	Marten (*Martes americana*) Ermine (*Mustela ermine*) Least weasel (*Mustela nivalis*) Long-tailed weasel (*Mustela frenata*) Mink (*Mustela vision*)	*Wapis chance* *Sih oose* *Sih oose* *Sih oose* *Sakwees*

		Striped skunk (*Mephitis mephitis*)	*Sig ack*
Ungulates	4	Mule deer (*Odocoiles hemionus*) White-tailed deer (*Odocoiles virginianus*) Moose (*Alces alces*) Woodland caribou (*Rangifer tarandus*)	*Psa moosey* *Psa moosey* *moosey* *atik*
Water birds	33		
Hawks and Eagles	16	Bald Eagle *(Haliaeetus leucocephalus)*	
Grouse, Rails and Coots	7	Ruffed grouse (*Bonasa umbellus*) Spruce grouse (*Dendragapus canadensis*)	*Pe hew*
Peeps and Gulls	87		

Wildlife of note in the area includes the Swan Hills grizzly, until recently ranked as 'may be at risk' by Alberta's Wildlife Act and now upgraded to a 'threatened species' due to recommendations from the Alberta Government's Endangered Species Conservation Committee, 2002. In a report by the provincial government entitled *Status of Grizzly Bear in Alberta* (Government of Alberta 2010a) populations are estimated at 23 individuals in the Swan Hills.

Other mammal species at risk in the area include wolverine (*Gulo gulo)*, woodland caribou (*Rangifer tarandus*), and northern long-eared bat (*Myotis septentrionalis*). The area is also home to a large number of bird species at risk including the barred owl (*Strix varia*), bay-breasted warbler (*Dendrioca castanea*), brown creeper (*Certhia Americana*), cape may warbler (*Dendroica tigrina*), northern pygmy owl (*Glaucidium gnoma californicum*), peregrine falcon (*Falco peregrines anatum*), piping plover (*Charadrius melodus*), short-eared owl (*Asio flammeus*), sprague's pipit (*Anthus spragueii*), trumpeter swan (*Cygnus buccinators*), western grebe (*Aechmophorus occidentalis*), and white-winged scoter (*Melanitta fusca deglandi*). The Canadian toad (*Bufo hemiophrys*) and northern leopard

frog (*Rana pipiens*) represent amphibian species at risk in the area (Government of Alberta 2007a).

Fish

Fish are also abundant in the Lesser Slave Lake area's lakes, rivers, and streams. Arctic grayling (*Thymallus arcticus*) is a species at risk in the area (Government of Alberta 2007a).

Table 2.3 Common Fish of the Lesser Slave Lake Region (Joynt, Sheldon, Sullivan 2003)

Category	**Approximate Number of Species**	**Selected Species of Cultural Significance: Common and Latin Names**	**Selected Species: Cree Names** (AINA 1999)
Mooneyes	1		
Minnows	9		
Suckers	2	White Sucker (*Catostomus commersoni*)	*Na me pee*
Pikes	1	Northern Pike (*Esox lucius*)	*En kin o sehw*
Trout	6	Lake Whitefish (*Coregonus clupeaformis*) Lake Trout (*Salvelinus namaycush*)	*Atikameg* *Na me goos*
Trout-Perch	1		
Cods	1	Burbot (*Lota lota*)	*Me yi*
Stickleback	1		
Sculpin	1		
Perches	3	Walleye (*Stizostedion vitreum*) Yellow Perch (*Perca flavescens*)	*Oh gow* *Ah sow ees*

Industrial Context

Today Swan River First Nation's traditional territory is dominated by the following land uses: forestry, oil and gas developments, the Alberta Special Waste Treatment Centre,

agriculture, transportation and transmission corridors, and tourism. Below, some of the land users that are having the greatest impacts on Swan River First Nation's traditional territory are discussed as outlined in Geertsema (2008).

Forestry

The forestry industry has been a major player in the Lesser Slave Lake area for a number of years. The approximate area of harvest in the Swan Hills since the early 1980's has been 1,940 hectares. Of that roughly 56% was harvested between 1985 and 1989, 34% between 1993 and 1998, and 10% in 2002 (TAFS 2006). The following forestry organizations operate in Swan River First Nation's intensive land use areas:

- Millar Western
- Buchanan Lumber
- Slave Lake Pulp Corporation
- Alberta Plywood Ltd.
- Tolko Industries Ltd.
- ANC Timber Ltd.
- Blueridge Lumber
- Vanderwell
- Weyerhauser
- Spruceland Millworks
- West Fraser

Oil and Gas Development

The Swan Hills area is the third largest oil deposit in Canada and is covered by oil and gas infrastructure including roads, pipelines, powerlines, well sites, risers, compressors, and seismic lines, some of which date back to the late 1950s (TAFS 2006). In 1957 Home Oil (later purchased by Devon Canada Corporation) was the first company to begin drilling oil in the area and since then has produced over 530 million barrels of oil and 37 million cubic feet of natural gas from the field. Major oil and gas industry players in the area include:

- Devon Canada Corporation
- Apache Canada Ltd.
- Conoco Canada Resources Ltd.
- Pengrowth Gas Corporation
- Pembina Pipeline Corporation
- Penn West Petroleum

Penn West is the largest land holder in the Swan Hills area and leases 45% of the oil and gas field which they are currently developing (Town of Swan Hills 2008).

Alberta Special Waste Treatment Centre

The Alberta Special Waste Treatment Centre (ASWTC) was developed in 1987 to provide hazardous and special waste treatment services for Alberta. Initial development included a variety of waste treatment processes including incineration for organic waste, chemical treatment for liquid inorganic wastes, stabilization for treatment of inorganic solids, a landfill for solid treatment residues, and a disposal well for treated liquids. The treatment centre was then expanded in 1990 and then again in 1991/92 to increase incineration capacity, and to add a furnace for treatment of Polychlorinated biphenyls (PCBs) of which manufacture was banned in 1977 in the United States. In 1994 an application was made to accept waste from all Canadian jurisdictions, and following a public review, the facility was authorized (Bovar 1997). The ASWTC is the only stationary incinerator licensed to dispose of PCBs wastes in Canada (Blais et al. 2003).

A mechanical failure of a transformer furnace occurred on October 16, 1996 and resulted in the release of an unknown quantity of PCBs, dioxins, and furans into the airshed. Following the release Alberta Health issued a health advisory that recommended limiting human consumption of fish (6 oz./week) and game (13 oz./month) harvested within a 30 kilometre radius of the ASWTC (Alberta Health and Wellness 1997). A long term environmental and human exposure monitoring program has been ongoing since 1998 to continue to monitor PCBs, dioxins and furans in human blood, and fish and wildlife tissue samples. In June 2004 the Alberta Special Waste Treatment Centre: Long Term Follow-Up Health Assessment Program 1997-2002 report was released stating that human and deer blood contaminant concentrations were similar in 2001 to those of 1997 (right after the release of toxins). Recommendations from the report included that the wild game food advisory should continue after 2004 (Alberta Health and Wellness 2004)

Cultural Context

Western Woods Cree

Woodland Cree communities[1] within Treaty 8 Alberta include:

[1] Not all of these communities are exclusively Woodland Cree.

- Bigstone Cree Nation
- Driftpile First Nation
- Duncan's First Nation
- Fort McKay First Nation
- Fort McMurray First Nation
- Kapawe'no First Nation
- Little Red River Cree Nation
- Loon River Cree Nation
- Lubicon Lake Indian Nation
- Mikisew Cree Nation
- Sawridge Band
- Sturgeon Lake Cree Nation
- Sucker Creek First Nation
- Swan River First Nation
- Tallcree First Nation
- Whitefish Lake First Nation
- Woodland Cree First Nation

The Woodland Cree language is a mixture of Cree dialects (woodland, plains, and swampy) and they refer to themselves as *Nehiyawak*, meaning 'the Cree People'.

According to anthropologists, the smallest unit of Woodland Cree social organization was the nuclear family that stayed together during fall, winter, and spring. The next largest group was the local band made up of several related families totalling 10-30 people. The regional band was composed of several local bands. Membership was flexible and size of groups was variable. They practiced a bilateral kinship system and cross cousin marriage was preferred (Smith 1981: 260).

In the summer the regional band congregated on a lake shore. This was time for socializing, reinforcing family ties, alignment of families, and planning for winter dispersal. In the fall people departed for their winter hunting grounds. They hunted moose and elk in September to October as well as woodland caribou on their migration route. Trapping occurred from November to December and limited activities, including storytelling, happened during January and February. In the spring, woodland caribou were again hunted on their migration route and once open water returned people traveled to the pre-arranged summer local (Smith 1981: 260).

Important resources to the Woodland Cree included: moose, woodland caribou, elk, woodland bison, whitetail deer, bear, hare, beaver, woodchuck, muskrat, porcupine, squirrel as well as whitefish, lake trout, pickerel, and pike. They trapped beaver, mink, marten, otter, lynx, fox, muskrat, squirrel, woodchuck, grey wolf, wolverine, and fisher (Smith 1981:257).

Early Inhabitants of the Lesser Slave Lake Area

Swan River First Nation is located on the south, central shore of Lesser Slave Lake (see Figure 2.2). Much debate surrounds the claim that the name of the lake suggests that the early inhabitants were the Slavey people. However, the Cree word for Slave, *hya-tche-nu*, has a number of different meanings. First, it may in fact refer to the Dene (Slavey) today living elsewhere in Alberta. Second, the word may refer to any people feared or looked down upon by the Cree. Finally, the Cree word for Slave, *hya-tche-nu*, may actually be a misunderstanding of the word *hua-tsai-see-nu* meaning stranger or any unknown people who may be Beaver, Slavey, Blackfoot, or an unfamiliar Cree group (Gillespie 1981:164-165, TARR 1978:2-3).

Fur Trade Era in the Lesser Slave Lake Area

The start of the fur trade in the Lesser Slave Lake area was marked by the construction of a NorthWest (NW) Company post at the mouth of the Slave (Indian) River in 1799. This post was followed in 1802 with another NW Company post at Grouard and yet another built on the shore of Lesser Slave Lake south of Dog Island. Following the construction of the NW Company's first post in the region, the Hudson's Bay Company (HBC) built Fort Waterloo on the east end of Lesser Slave Lake. In 1817 the HBC built a post at the junction of the Athabasca River and Lesser Slave River. After being destroyed in a fire, the Hudson's Bay Company rebuilt Fort Waterloo on the west end of Lesser Slave Lake on the east shore of Buffalo Bay. The fur trade period from 1790-1821 brought intrusions of Métis, Assiniboine, Iroquois, Ojibwa, and Cree people into the Lesser Slave Lake area (Gillespie 1981:165).

Figure 2.2 Location of Swan River Reserves

Swan River First Nation

Legend

Swan River First Nation Reserve

SpatialQ

www.spatialq.com

After a period of fierce competition, these two companies amalgamated in 1821 (Baergen 1967:25-45). Although still dominant in the area, the HBC lost its monopoly in 1870 and by 1899 had many competitors from 'fur pedlars'. This scenario increased pressure on fur animals as hunting intensified and equipment improved (TARR 1978:7-8). Catholic Mission visits began first with Father Tache in 1846 followed by Father Bourassa in 1845 and Father Lacombe in 1855. The St. Bernard Mission was built at Grouard in 1871. Anglican Mission visits included Archdeacon Hunter in 1858, R.W. Kirkby in 1859, and Rev. Bompas in 1865. St. Peter's Mission was built at Buffalo Bay in 1885. Missionaries influenced some Aboriginal people to settle and farm, or to send their children to board in school while the parents were away in their hunting camps (Phillips 1973).

By the 1880s the federal government had started to encourage white settlement of the last 'frontier' of Canada's fertile farmlands (TARR 1978:7-8). This and the famine of 1887-1888 prompted Aboriginal leaders in the area to consider taking Treaty. However, there was mixed feelings about the entry of whites into the area. On one hand, fur traders brought prosperity and farms produced some food to soften impacts of game scarcities. Alternatively, itinerant white trappers depleted fur stocks rapidly and prospectors travelling to the Klondike caused environmental disturbance. On January 1, 1890 the Cree of Lesser Slave Lake gathered and the majority of them were in favour of Treaty. By 1897 the RCMP first came to the area and by 1899 Treaty 8 was signed on the shore of Lesser Slave Lake by Kinosayo (Andrew Willier), Moostoos, the Captain, Weecheewaysis, Charles Nesootasis, and Felix Giroux (Upschinese) (Kinuso 1979: 8; TARR 1978:10).

By 1899 settlements at Lesser Slave Lake were along the south shore of the lake and along an old trail from Athabasca Landing via Sawridge to Peace River Crossing. Before the establishment of permanent farming communities, these settlements were used by most families as summer residences, while their trapping and hunting camps were located inland, south of the lake. The main communities were located around:

- Sawridge: Lesser Slave Lake and Lesser Slave River
- Swan River: with small settlements at Wahpah and Assineau River
- Driftpile River: with summer fish camps on Giroux Bay

- Sucker Creek: at various places between the creek and Buffalo Bay
- North side of Buffalo Bay: in the group of settlements now known as Grouard (TARR 1978:7)

Leadership after Treaty 8 in the Lesser Slave Lake area

Unlike southern bands, Aboriginal communities around Lesser Slave Lake did not have chiefs. Out of necessity for Treaty negotiations, Kinosayo of Driftpile was selected as the chief of the Lesser Slave Lake Bands for an indefinite term of office by a meeting of people from all five bands. Each community also had an elected headman responsible to the chief. Kinosayo (Andrew Willier) served as chief from 1899-1918 at which time he died in the flu epidemic[2]. He was replaced by his brother Astatchikun (Felix Willer) who served as chief until his death in 1936. During this time period the following individuals served as headmen for Swan River First Nation: Felix Giroux (Upschinese) 1899-1927, Edward Nesootasis (Twin) 1927-1928, August Chalifoux 1928-1935, and August Sowan 1935-1936 (Kinuso 1979:5).

For administrative convenience the pay list of 'Kinosayo's Band' was divided into different groups in 1910 but they were still all recognized as one band. Then, in 1929 the Department of Indian Affairs decided to recognize the four groups as separate bands and in 1936 the four major bands each elected a separate chief and council to replace the overall council formerly headed by Chief Astatchikun (TARR 1978:14-15,26,44). Swan River First Nation's first chief was previous headman August Sowan. His leadership was followed by Gene Giroux (Davis), August (Ah yeah stow) Chalifoux, Victor Twin, Paul Sound, Gordon Courtoreille, Charlie Chalifoux, Richard Davis, and Leon Chalifoux (present chief) (Kinuso 1979:5). In the following excerpts, Swan River First Nation Elders discuss leadership during the era of 'Kinosayo's Band'.

"There was only one chief for the whole area...there were about three brothers...Kinusayoo, the other is Mustus and Astachukun...All of these brothers became chiefs. At that time we had chiefs for a lifetime ...The hereditary Chieftainship was done away with upon the death of the last brother. It was a custom followed that upon the death

[2] In 1918 half of Cree population died from a flu epidemic (Kinuso 1979:2).

of a brother, the next brother in line takes the role of a Chief for a life term. The last hereditary chief was Astachukun who in 1930's approximately was no longer considered a life-time Chief, decided by the local people. The local bands in the 1930's had begun electing their own Chief and Council" (#24T)[3].

"Since the death of Astachukun, we adopted a different system, an elective system. The bands elect their own Chief and Council now....The Chief had authority over all the other bands. Since the people were reluctant to control or manage their bands, the Chief was responsible for those bands" (#29T).

Swan River First Nation Reserves

The story of the formation of Swan River First Nation reserves 150E and 150F is a long and complicated one that culminated in the official survey of these reserves by McLean in 1912. Band population around this time was approximately 59 people or 14 families (TARR 1978:30). Finally order in council no. 508 was passed on April 4, 1925 taking Swan River 150E from the operation of the Dominion Lands Act and setting it aside 'for the Indians'. The same happened to Swan River 150F on December 18, 1922 (TARR 1978:14-15, 27, 41).

Soon after the boundaries of Swan River First Nation reserves were defined, the surrounding areas steadily filled up. By the late 1920s, reserves around Lesser Slave were the last large pieces of undeveloped farmland in the region. These areas soon became targets to land developers like the Soldier Settlement Board who attempted to have the Swan River First Nation reserve sold to white settlers. Then in 1927 the Province attempted to seize the lands for white settlement, but this was rejected by Swan River First Nation in a unanimous vote against the surrender. This surrender was proposed again in 1930 and defeated (TARR 1978:42).

Reserve 150E included land at Wahpah point (the narrows) as during initial survey attempts (1901) Alexander Giroux and others at Wahpah expressed a desire to stay where they were, nearer to their fishing grounds. Such was also the case with Felix Giroux who wanted to remain at Assineau River (Assinaw or Stone) and did not want to move to the large reserve planned further west (TARR 1978:17,27). His wish was granted when reserve 150F was

[3] For a description of the participant coding system please see chapter 4.

created. Today Assineau River 150F is comprised of 71.6 hectares and has no residents. Swan River 150E (4271.1 hectares) is home to 365 registered band members with 747 band members living off reserve (INAC 2009).

Swan River First Nation members continue to actively practise their Treaty Rights to hunt, fish, trap, and gather. Swan River First Nation considers all Treaty 8 lands to be their 'traditional territory' or the geographic area that they use to exercise their Treaty Rights to hunt, fish, trap, and gather (see Figure 2.3). In Canada, Indian Reserves are too small to sustain traditional livelihoods. Thus when signing Treaty 8, Kinosayo ensured that his people could continue to utilize their traditional territory to survive. Within the larger area of their traditional territory is what Swan River First Nation refers to as their 'area of intense use'. This zone includes the Lesser Slave Lake and Swan Hills regions. Discussions regarding past, present and future land use of Swan River First Nation are focused on their area of intense use (see Figure 2.4).

Archaeology of the Lesser Slave Lake Area

Little is known archaeologically about the Lesser Slave Lake and Swan Hills region. This is in part due to the subarctic environment that places limitations on archaeological research as well as the specific lifeways of the people who lived in the region. In addition there has been less interest in boreal forest peoples by archaeologists then, for example, peoples of the northwest coast or American southwest. Restrictions to archaeological research include the following:

- forest fires that conflate layers and contaminate radiocarbon samples;
- acidic soils resulting in little to no organic preservation leading to the invisibility of material cultural such as bone, antler, sinew, hide, and plant materials;
- the thin veneer of mixed remains making it hard to isolate components, compounded by continuous reoccupation;
- bioturbation and cryoturbation;
- challenges to survey such as difficult terrain (i.e., muskeg) and poor visibility (i.e., dense bush cover);
- small , dispersed, highly mobile populations;

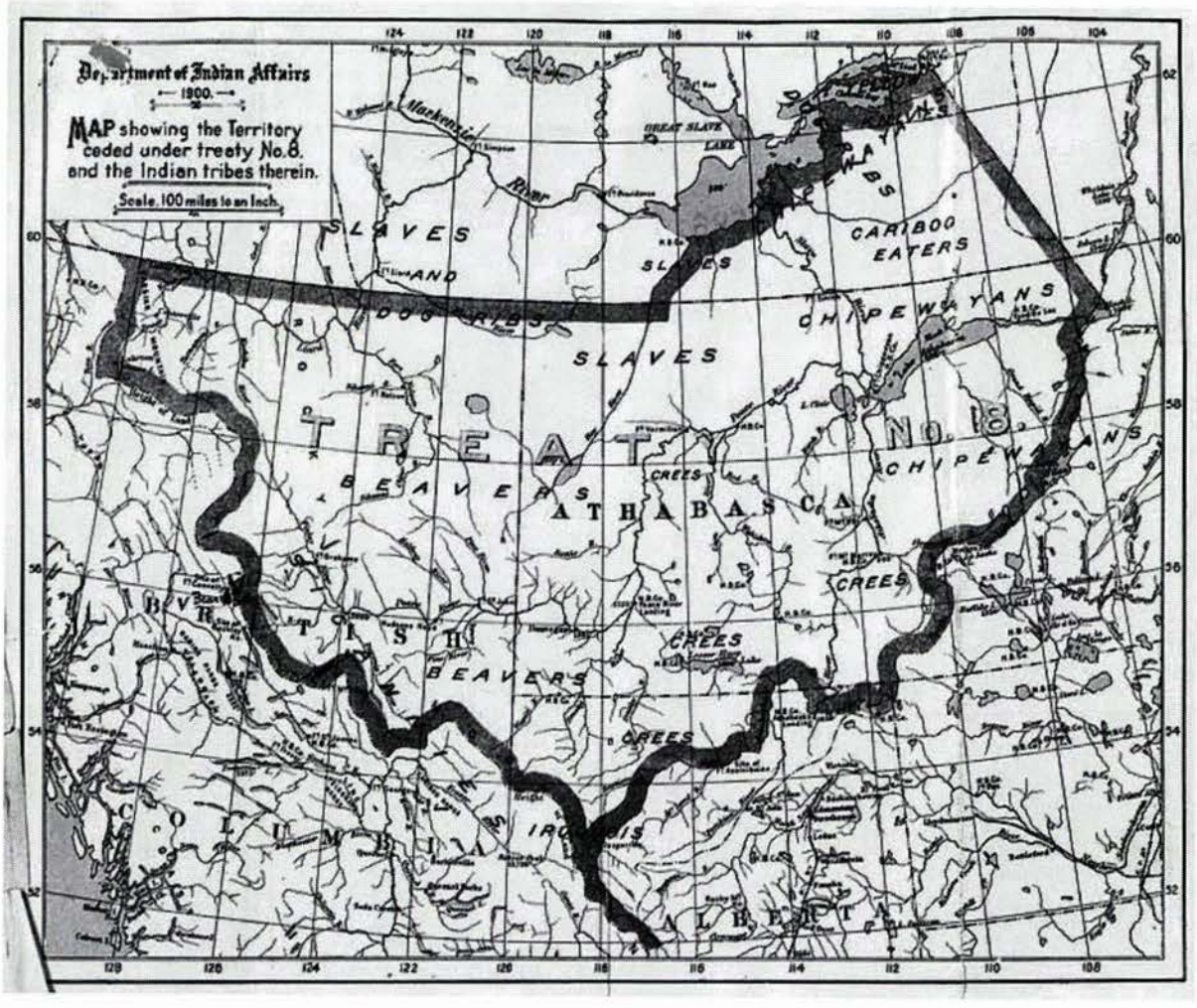

Figure 2.3 Swan River First Nation Traditional Territory
(Source: http://www.collectionscanada.ca/05/05130)

Confidential Figure

Contact Swan River First Nation Chief and Council for Figure 2.4

- the simple nature of the stone tool kit and conservative persistence over time; and
- few diagnostic artifacts (Wright 1995).

Period I (10,000-8,000 B.C.) is not well represented in the Lesser Slave Lake area. The best evidence for this period is in the form of two macroblades from the Burley Site (GiQf-4), 30 km west of High Prairie. These macroblades resemble Clovis blades (Le Blanc 2003:136-137).

Period II (8,000-4,000 B.C.) or 'Early Northwest Interior' (Wright 1995) is also poorly represented. A possible Plano period is evidenced by two finely made lanceoloate bifaces found at the Burley Site that resemble Eden (Plano) Points. Lanceolate points from the Zuelke site, north of Grouard Mission, also resemble Plano points but are also similar in form to points from the much later middle Taltheilei tradition (Le Blanc 2003:138).

Period III (4,000-1,000 B.C.) or 'Middle Northwest Interior' (Wright 1995) is again, poorly evidenced in the Lesser Slave Lake region. No early side notched points have been found and there is only limited evidence of later period III occupation. This evidence is in the form of two notched points that may resemble Oxbow found west of Buffalo Bay and at Pelican Lake on the east side of Lesser Slave Lake. Evidence of side notched points in the boreal forest may be the result of incursions of plains hunters or movement of point styles but not people as a result of contact and trade (Le Blanc 2003:139,142)

Period IV (1,000 B.C.-A.D. 500) to period V (A.D. 500-present) is represented by more substantial archaeological evidence. The late pre-contact history of Lesser Slave Lake region was dominated by two themes. First, a continued influence from the Plains as represented by a variety of small notched points. Second, much stronger indications of connections to the northeast as indicated by projectile points related to the Taltheilei tradition that spanned from 2,600 before the present to contact. Taltheilei evidence in the form of stemmed projectile points from GjQc-5 and GiQa-3 that are comparable to examples from early (500 B.C.-A.D. 150) and Late Taltheilei (A.D. 800-contact). Taltheilei originated in northern British Columbia and moved rapidly to the east following the Peace

River and likely the southwestern tributaries of the Mackenzie River (Gordon 1996, Wright 1995). Taltheilei represents the development of Athabascan culture (Gordon 1977) and the presence of these points suggests continued long-term contact with the centre of Taltheilei development east of Great Slave Lake (LeBlanc 2003:142). Taltheilei lifeways focused on following the barrenground caribou north above the treeline in summer and south into the full boreal forest in winter. Historic Athabascan peoples shared the same livelihood pattern and herd ranges as Taltheilei peoples and are thus considered the descendents of Taltheilei culture (Gordon 1996).

Period V shows a complete lack of pottery in the Lesser Slave Lake area including areas to the west and northwest of the lake. The nearest pottery found is to the east at Lac La Biche with a few tiny fragments discovered at Calling Lake. Eastern Alberta boreal forest pottery is thought to belong to the westernmost extension of the Selkirk-Composite that originated in the central boreal forest of Manitoba and spread west (Meyer and Russell 1987). This pottery is considered to be evidence of northern Algonquians, the direct ancestors of those people who became the Cree (Le Blanc 2003: 143-144). According to Wright (1995), cultural continuities between the Shield Archaic and subsequent development in the boreal forest-Canadian shield permit the speculation that the Shield Archaic people probably spoke an Algonquian language.

During the late pre-contact era there appears to be a complex history on the Lesser Slave Lake region involving the Cree and Dene (Beaver/Dene-za and Slavey/Dene tha'). An archaeological lack of pottery may suggest that Athabascans, who did not use pottery, were replaced by Algonquians who, by the time they had moved into the area, had replaced ceramic pots with copper and iron (Le Blanc 2003: 144).

Now that the ecological, industrial, and cultural context has been presented, the following chapter will discuss Indigenous archaeology, trace the development of traditional land use studies within archaeology in Canada, and discuss the concept of traditional knowledge.

CHAPTER 3. TRADITIONAL KNOWLEDGE & ARCHAEOLOGY

In the introductory chapter, I outlined how this dissertation relates to research relevant to Swan River First Nation's needs as well as to academic archaeology. In the present chapter I begin by presenting a historical perspective on the emergence of anthropology and archaeology in Canada. This is followed by a discussion of archaeology as cultural anthropology including the advent of traditional knowledge studies in impact assessments, how archaeologists came to fill the role of traditional land use study facilitators, and how the involvement of archaeologists in these studies has come to impact the discipline of archaeology. I then discuss Indigenous archaeology and how my research can be defined as such.

Next the concept of traditional knowledge is explored including a comparison between traditional knowledge and western science. The validity of the traditional knowledge used as the foundation for this dissertation is then briefly discussed. It is shown how the argument of traditional knowledge being tainted by modernity is not a relevant critique of my results based on how traditional knowledge was applied in this dissertation. Finally traditional knowledge used in the service of ethnoarchaeology is explored.

Development of Anthropology and Archaeology in Canada

Anthropology

Dyck (2006) describes how since its inception Canadian anthropology has been venturing into contexts shaped directly or indirectly by complex and evolving regimes of Aboriginal-state relations. This began with the appointment of Boas' leading student, Edward Sapir, as director of the anthropology division of the Geological Survey of Canada where he served from 1910-1925 and worked alongside Marius Barbeau as the first professional anthropologists in Canada. Sapir conducted salvage anthropology in Canada with the aim of preserving the vanishing cultural remnants of supposedly moribund First Nations. According to Nurse (2006) this approach shifted the basis of cultural authority from communities to experts whose conclusions seemed predicated on a rigorous method and

extensive research. In this way salvage ethnography became part of a process of cultural disempowerment that allocated to white intellectuals the authority to determine what was and was not an authentic part of Aboriginal culture (Nurse 2006).

After Sapir returned to the United States, Diamond Jenness held the position as head of the National Museum of Man starting in 1925. This same year, Thomas McIlwraith was hired to teach anthropology at the University of Toronto and by 1936 a department of anthropology was established (Hancock 2006). The next academics hired to teach anthropology in Canada did not occur until Harry Hawthorn was hired at the University of British Columbia in 1947 and Fred Voget at McGill in 1948 (Harrison and Darnell 2006).

By the 1940s anthropology began to step outside of salvage anthropology to write commentaries on the future prospects and needs of an Aboriginal population that could no longer be presumed to be under threat of demographic extinction (Dyck 2006). The work of Jenness, Bailey, and McIlwraith represented a self-conscious attempt to assess the 'Indian problem' and evaluate how to best incorporate First Nations peoples into Canadian society (Buchanan 2006). Such research revealed a steering away from simply documenting First Nations culture before they went extinct to highly charged issues of citizenship, racism, welfare, and democratic rights and responsibilities (Dyck 2006).

In the 1960s the gulf between anthropologists and Aboriginal state relations began to close when Indian Affairs commissioned the Hawthorn Tremblay report with results intended to serve the needs of policy developers rather than academics at a time when doubts had been expressed concerning the direction of federal Indian administration (Dyck 2006). The report made recommendations on the political, educational, and economic needs of Canadian Aboriginal peoples and was seminal in the emergence of a Canadian Aboriginal policy attuned to the needs of Aboriginal peoples in Canada. However the recommendations in the Hawthorn Tremblay report were ignored by the authors of the 1969 White Paper (Harrison and Darnell 2006).

According to Dyck (2006), in the decade following the white paper it was not uncommon for anthropologists to be hired by bands and tribal councils who required assistance preparing reports, proposals, position papers or in conducting research needed to counter or capture operational control of government programs. Harrison and Darnell (2006) describe how during this period anthropology began to play a constructive role in mediating and interpreting events in recent Canadian political history working as expert witnesses, researchers, advocates, commentators, and consultants in major legal cases, boycotts, agreements, and referenda such as the: 1969 White Paper, 1973 Calder case, 1976 James Bay Agreement, 1977 Mackenzie Valley pipeline debate and Berger Inquiry, Lubichon Lake Cree boycott of 1988 Olympics exhibition "The Spirit Sings: Artistic Traditions of Canada's First People", 1991 Delgamuukw v. British Columbia, 1996 Royal Commission on Aboriginal Peoples, and 2002 referendum on Aboriginal treaties in British Columbia.

Dyck (2006) described how, despite the growing body of ethnographic work on Aboriginal state relations in Canada in the 1970s and 1980s, anthropology in this field was increasingly vulnerable to criticism from a variety of sources. According to Dyck (2006) ethnography within anthropology was critiqued by a generation of postmodernists who wanted to show their theoretical and ethical sophistication no matter what the cost for their discipline. At this same time work previously completed with anthropologists was being taken over by other disciplines like political science, history, public administration, communication studies, and law (Dyck 2006). Further to this, the development of Native Studies departments raised the question of the appropriateness of ethnographic research being conducted into Aboriginal issues by non-Indigenous researchers (Dyck 2006). At this same time the federal government introduced compulsorily research ethics regulations that "envisioned intellectual inquiry with human subjects almost solely in terms of biomedical models [that] served to further discourage the practise of ethnography in general, and of ethnographic research into Aboriginal-state relations in particular" (Dyck 2006:86-87).

Anthropologists responded to this criticism in a number of ways. Some ethnographers turned their research to legal, theoretical and historical questions about Aboriginal peoples that could safely be studied textually. Others began working for bands and tribal councils

but published little of their ethnographic work. Some developed applied anthropology research programs in partnership with Aboriginal organization and others withdrew to different ethnographic pursuits (Dyck 2006). By the end of the 20th century ethnographically based studies in Canada had been considerably reduced and anthropological research on Aboriginal state relations had changed yet again (Dyck 2006).

As a result of the past criticisms launched at ethnography, Dyck (2006) feels that today anthropologists have been created who are practically oriented professionals rather than intellectuals. These anthropologists want to proclaim their sympathies and solidarity with, and place their services at the disposal of, First Nations. Dyck (2006) describes how a troubling feature of these developments is the division between anthropologists working in Aboriginal-state relations and those who have nothing to do with 'Native Studies'. He feels that the self-deprecation and self-censorship adopted by anthropologists working with First Nations strongly contrasts with the determinedly independent and critical stances exhibited by the other camp of ethnographers (Dyck 2006).

The perspective of Scheper-Hughes (1995) and D'Andrade (1995) is that there need not be two approaches to ethnography (ethical and objective) as Dyck (2006) has suggested has emerged in Canada. They examine the role of cultural relativism in anthropology today and feel that, in addition to the traditional anthropological perspective, ethical stances can also be taken. D'Andrade (1995) asserts that you can have both moral and objective models in anthropology as long as they are kept separate (e.g., like church and state). Scheper-Hughes (1995) states that an anthropologist as a spectator is accountable to science and that an anthropologist as witness is accountable to history. According to this approach, anthropologists working with First Nations in Canada can complement their cultural relativist approach to a given culture with an ethical perspective on the poverty, abuse, and marginalization associated with First Nations cultures.

Kassam and Tettley (2003) take this a step further and argue that universities should not be afraid to forego their objective stance in favour of the ethical. They believe that universities are implicated in the politics of communities in which they exist or work. They believe that

there is the need for universities to become responsible institutional citizens and that this requires that they commit to enhancing the lot of the peripheralized peoples of society and demonstrate concrete action in that regard. They feel that this is necessary even if it means rupturing the pretence of objectivity that the 'ivory tower' confers (Kassam and Tettley 2003).

Archaeology

From 1852 to 1896 the Canadian Institute transformed antiquarian archaeology into a more scientific endeavour. This began with Daniel Wilson who developed a scientific rationale for archaeology and who turned the Canadian Journal into the first publication in Canada to discuss archaeology regularly. David Boyle built on Wilson's accomplishments and was curator/archaeologist of the Canadian Institute Museum from 1884-1896 and created a program that laid a foundation for archaeology as a systematic and scientific discipline (Killan 1998). The appointment of Phileo Nash to the University of Toronto's anthropology department in 1938 marked the first time archaeology was professionally taught in Canada and when John Norman Emerson joined the department in 1946 it was then capable of training archaeologists. However it was not until the 1950s and 1960s that departments formed elsewhere in Canada. In fact in 1961 Dick Forbis at the University of Calgary was the only professionally trained archaeologist teaching Canadian archaeology between Vancouver and Toronto (Kelley and Williamson 1996).

In the mid 1950s there were fewer than ten archaeologists active in Canadian archaeology and, outside of Ontario and Quebec, archaeological research programs in most provinces and territories were not sustained (Kelley and Williamson 1996). Jenness' attempts to expand archaeology to all parts of Canada during his years as director of the National Museum of Man (1925-1948) were unsuccessful for various reasons including Sapir's idea that archaeological sites would always be there and that the priority was to document vanishing Aboriginal groups (McNeish 1998). This began to change when Richard McNeish became chief archaeologist at the National Museum of Canada (1953) and successfully implemented Jenness' vision of the National Museum of Canada initiating archaeology in other parts of Canada, each region then assuming control (McNeish 1998). Following this era, increased threats to archaeological sites as a result of heightened levels

of industrial development in Canada led to the creation of legislation and the establishment of provincial bureaucracies surrounding archaeology (Kelley and Williamson 1996).

Indigenous Archaeology in Canada

Some argue that the relationship between archaeology and First Nations in Canada has until recently been one where the first excludes and alienates the latter. As described by Loring, "[archaeology] assumes a dominant materialist bias while eschewing indigenous knowledge, oral traditions, and mythology...In subverting and appropriating the past of indigenous peoples, archaeology world-wide served as a handmaiden to colonial interests" (1998:261). Loring (1998) goes on to explain how in being impartial and rigorous in its search of the truth about the past, archaeology has alienated First Nations peoples from their land by denying them the opportunity to participate in the production of their history.

However today due to self-government, the duty to consult, and traditional land use studies archaeologists are coming in contact with First Nations and completing projects directed either by First Nations peoples themselves or in collaboration with First Nations peoples. The socio-economic and political conditions are such that archaeologists are now conducting applied or politically correct archaeology that reflects the shifting relations between archaeologists and First Nations peoples (Kelley and Williamson 1996).

This type of archaeology may be defined as Indigenous archaeology, referring to archaeology with, for, and by Indigenous people (Nicholas 1997). Nicholas (2008) has defined Indigenous archaeology as follows:

> "Indigenous archaeology is an expression of archaeological theory and practise in which the discipline intersects with Indigenous values, knowledge, practices, ethics, and sensibilities, and through collaborative and community-originated or –directed projects, and related critical perspectives. Indigenous archaeology seeks to make archaeology more representative of, relevant for, and responsible to Indigenous communities. It is also about redressing real and perceived inequalities in the practice of archaeology and improving our understanding and interpretation of the archaeological record through the incorporation of new and different perspectives" (Nicholas 2008:1660).

Atalay (2006) defines Indigenous archaeology as research that critiques and deconstructs western science archaeological practise as well as research that works toward recovering and investigating Indigenous experiences, practices, and traditional knowledge systems. Atalay (2006) argues that Indigenous archaeology offers the potential of bringing to archaeology a more ethical, engaged, inclusive and rich practise without sacrificing the rigor and knowledge production capacity that makes it such a powerful tool for understanding and creating knowledge of the past. Atalay (2006) advocates for a collaborative approach that blends the strengths of western science with the knowledge and epistemologies of Indigenous peoples to create a set of theories and practices for an ethically informed study of the past, history, and heritage. (See also Smith and Wobst (2005) and Peck et al (2003) as sources on Indigenous archaeology.)

In a 2008 article, McGhee vehemently criticizes Indigenous archaeology and raises a number of controversial questions: "What is the place of Native peoples in archaeology? What is the basis for indigenous archaeology? Does it emanate from a troubling, yet pervasive stereotype of "Nativeness"? Are ethnic identities and formal training equivalent qualifications? Are scientific practices and indigenous perspectives on the past wholly incompatible? Should archaeology be partitioned into separate, yet equal systems of knowledge, interpretation, and meaning?" (Wilcox 2010).

McGhee (2008) argues that the incorporation of Aboriginal models of explanation into archaeology perpetuate Aboriginal notions of differences (Aboriginalism) at the expense of rational scientific models. McGhee defines 'Aboriginalism' as the concept that Indigenous societies or cultures possess qualities that are fundamentally different from those of non-Aboriginal peoples. This approach allows Aboriginals to assume rights over their history not available to non-Indigenous peoples (Lyons et al 2010).

McGee is critical of how some archaeologists have conducted politically correct archaeology by "incorporating non-Western values and perspectives as sources and methods of investigation, or by explicitly aligning their efforts with the historical interests of specific communities or groups" (2008:581). McGee (2008) argues that such efforts are

theoretically unsound and detrimental to both archaeologists and First Nations peoples and communities. McGhee states that "sharing theoretical authority" strips archaeology of "the scientific attributes that make it a particularly powerful narrative of the past" and therefore relegates it to "at most equal weight relative to indigenous oral tradition and religious discourse" (2008:591). In general McGhee is afraid that the voice and perspective of the western science trained archaeologists is being lost.

McGhee's (2008) criticism was followed by a number of responses that will be outlined below including Croes (2010), Colwell-Chanthaphonh et al (2010), Silliman (2010), and Wilcox (2010).

In Croes' (2010) response to McGhee, he explains how McGhee cites a problem of Indigenous archaeology as deriving from a misguided trend that considers native people as having a special, unique, and controlling role over science in owning their past ('Aboriginalism'). Croes feels that this is an over simplified view and promotes a 50/50 partnership between archaeologists and First Nations as the best approach for Indigenous archaeology. Colwell-Chanthaphonh et al (2010) respond to McGhee's arguments about Indigenous archaeology's goals and definition and state the importance of including Indigenous viewpoints and acknowledging Indigenous rights. They disagree with McGhee's (2008) assertion that Indigenous archaeology be positioned within the discipline of native studies rather than archaeology.

In Silliman's (2010) response he explains how McGhee (2008) argues against the validity and viability of Indigenous archaeology based on claims that untenable 'Aboriginalism' supports the entire enterprise and in doing so mischaracterizes the field of Indigenous archaeology. He argues against McGhee's (2008) insufficient sampling of relevant literature, his caricature of Indigenous archaeology, and his questionable treatment of colonialism and notions of 'Aboriginalism'. Silliman (2010) feels that Indigenous archaeology "attempts to tell useful, respectful, and peoples histories that resonate with communities' sense of themselves, their pasts and futures, and their particular needs. This need not undermine archaeology's commitment to studying parts of the past in rigorous and

scientific ways, nor must it produce "proprietary histories", particularly when done collaboratively" (2010:218).

Wilcox (2010) describes how McGhee (2008) questions the intellectual viability of Indigenous archaeology, characterizes Indigenous and scientific perspectives as mutually incompatible, and attempts to reclaim the objectivity of archaeology. Wilcox argues that the separation of prehistory and history is not necessary and states that if the scientific study of the past leads to an archaeology that refuses to acknowledge the presence of contemporary Indigenous peoples then we must question the objectivity of that field (is it a science or an ideology?) (2010:224-225). McGhee's argument against 'Aboriginalism' ignores the fact that colonialism not essentialism is the basis for any kind of collective Indigenous identity (2010:225).

Lyons et al state, "our experience suggests that Indigenous peoples both acknowledge the need for internal or emic processes of vetting and evaluating oral traditions and related forms of knowledge, and have long standing and culturally appropriate models for this practise" (2010:3). This has also been my experience while working with and for Swan River First Nation and I thus agree with Lyons et al when they state that they profoundly disagree with McGhee's assessment of the soundness and utility of Aboriginal modes of explanation to archaeology (2010:3). I employ a truly collaborative approach with Swan River First Nation where traditional knowledge and western science receive equal weight and are not placed in adversarial contexts. Traditional knowledge and western science need not have convergent conclusions. What is the value of presenting diverse perspectives if, when conclusions do not match, one is constantly evaluating which perspective is the right one.

Indigenous archaeology is a relatively new field and will surely be the subject of much debate in the years to come. Indigenous archaeology will likely become an important topic of discussion in Alberta where the Government is currently struggling with how best to reconcile the issue of Aboriginal consultation and archaeology and where, due to large amounts of oil and gas activity, traditional land use studies abound (see chapter 8).

Archaeology as Ethnography

Today many consulting archaeologists are working with First Nations completing traditional land use studies as requirements of impact assessments. This section will first discuss the advent of the necessity of traditional land use studies in Alberta and the legislation that guides them. This is followed by an outline of how archaeologists came to fill the role of traditional land use study facilitators in Alberta, a role possibly better suited to those trained in cultural anthropology. Finally, this section will explore how the experiences gained by archaeologists working with First Nations communities on traditional land use studies have impacted the discipline of archaeology.

The Advent of the Necessity of Traditional Land Use Studies in Impact Assessments and Associated Legislation

According to Usher (2000), the requirement for traditional knowledge in impact assessment was the outcome of several developments throughout the 1980s and 1990s (and spawned by the Berger Inquiry of the 1970s). These included "a growing recognition that Aboriginal people have knowledge that can usefully contribute to these processes; advocacy from many quarters, including the Royal Commission on Aboriginal Peoples, that aboriginal knowledge be so utilized; the negotiation of comprehensive land claims across the North; and evolution of formal environmental assessment and review processes" (2000:184).

As described by KAVIK-AXYS Inc. (2005), by the mid-1990s Aboriginal issues were starting to be included in the public consultation section of impact assessments or dealt with after the fact at hearings. By the mid to late 1990s appendices containing traditional land use studies started to be included as part of the larger impact assessment applications. In the late 1990s traditional land use studies moved into the main body of the assessment as a separate section of the larger volume. Today traditional land use studies follow much the same format as other assessment components including baseline and impact assessments findings, spatial measurements and analyses of impacts, project-specific vs. cumulative effects, and qualitative statements of impact (KAVIK-AXYS Inc. 2005).

Unlike in northern Canada, the Canadian Environmental Assessment Act (CEAA) is the primary legislation regarding the use of traditional knowledge in impact Assessments in Alberta. However, prior to the CEAA five-year review, this federal impact assessment legislation did not specifically address the inclusion of traditional knowledge. As a result of the five-year review an additional clause was added: "Aboriginal traditional knowledge may be considered in conducting an environmental assessment". More recently, CEAA (2006) produced 'Interim Principles' for how traditional knowledge should be considered for impact assessments. Despite these 'Interim Principles', CEAA remains vague and provides virtually no guidance for implementation.

How Archaeologists Came to Fill the Role of Traditional Land Use Study Facilitators

Impact assessments are completed in order to assess the impacts of a proposed project (e.g., road, pipeline, mine) on the environment and the people. Impact assessments are reviewed by provincial and federal regulators (e.g., the National Energy Board) who, if the impacts of a proposed project are not deemed significant (or if impacts have appropriate mitigation measures in place), will issue clearance for a project to proceed. Impact assessments have traditionally included sections such as wildlife, vegetation, air, surface water, archaeology and socio-economics and are generally completed by consulting companies (such as Stantec, Golder, AMEC and others) for proponents. In Alberta not all developments require impact assessments. For example, projects that cross provincial borders and oil sands mining activities trigger thorough impact assessments.

When traditional land use studies became required in impact assessments in the 1990s there was a sudden need for consulting companies to find professionals to facilitate this work. Most impact assessment practitioners had received technical training in the biophysical disciplines and were not suited to working with people. Archaeologists seemed to be the best fit because they often had some level of understanding of past Aboriginal lifeways and were well trained to map archaeological sites and could transfer these skills to recording traditional land use sites. Furthermore, unlike anthropologists, there was already a pool of consulting archaeologists that existed in Alberta because of the requirement for Heritage Resource Impact Assessments. As a result, in the early to mid 21st century any

archaeologists with an interest in traditional knowledge and with the 'right type of personality' began working with Aboriginal peoples to complete these studies. The work load was such that seldom were they able to also complete archaeological projects. They often had to choose between archaeology and traditional knowledge departments within consulting companies.

The following outlines a standard Alberta Environment "terms of reference" for a traditional land use study which presents the type of information that archaeologists collect and record with First Nations while completing a traditional land use study.

"Provide detail on the consultation undertaken with Aboriginal communities with respect to traditional ecological knowledge and traditional land use:

a) provide results of consultation with Aboriginal stakeholders to determine the extent of traditional land use in the Local Study Area. Discuss the vegetation and wildlife used for traditional, food, ceremonial, medicinal and other purposes, and any potential effects the Project may have;
b) identify traditional land use including fishing, hunting, plant harvesting (nutritional or medicinal), and cultural use with specific regard given to local Aboriginal peoples. Identify cabin sites, spiritual sites and graves. Determine the Project and cumulative impact of development on these uses and identify possible mitigation strategies" (AENV 2005).

How involvement in Traditional Land Use Studies has impacted the Discipline of Archaeology

Kelley and Williamson (1996) describe how, through its involvement in traditional land use studies, archaeology has moved into the vacant core left by anthropologists. In addition to this, Dawson (2010) argues that Indigenous archaeology in Canada is a product of young archaeologists' work experience conducting traditional land use studies with First Nations and thus recognizing the economic and social challenges they face. Dawson suggests that when these young archaeologists return to academia, that they choose Indigenous archaeology not as a response to the debate of post colonialism and scientific imperialism

but rather based on community experience (Dawson 2010). This echoes Trigger's (1998) sentiment that the Canadian social science tradition has refused to separate scholarship from social and moral concerns.

My career exemplifies Dawson's (2010) viewpoint as my perspective on archaeology was forever changed by my experiences conducting traditional land use studies with First Nations peoples in Alberta. For social and moral reasons I have chosen to conduct Indigenous archaeology.

Nicholas (2008) has outlined Indigenous archaeology as follows:

> "(1) The active participation or consultation of Indigenous peoples in archaeology...; (2) a political statement concerned with issues of Aboriginal self-government, sovereignty, land rights, identity, and heritage; (3) a post colonial enterprise designed to decolonize the discipline, (4) a manifestation of Indigenous epistemologies; (5) the basis for alternative models of cultural heritage management or stewardship; (6) the product of choices and actions made by individual archaeologists; (7) a means of empowerment and cultural revitalization or political resistance; and (8) an extension, evaluation, critique, or application of current archaeological theory" (Nicholas 2008:1660).

This dissertation touches on many of the features of Indigenous archaeology outlined above. This research:

- included Swan River First Nation as an equal partner;
- focused on Aboriginal and Treaty Rights;
- looked for ways to include Swan River First Nation in the archaeological process;
- included Swan River First Nation traditional knowledge; and
- evaluated and criticized current approaches in Aboriginal consultation and archaeology.

Traditional Knowledge

One of the most salient features of this dissertation was the use of Swan River First Nation traditional knowledge. Traditional knowledge is defined by Canada's Royal Commission on Aboriginal Peoples as: "oral culture in the form of stories and myths...coded and

organized by knowledge systems for interpreting information and guiding action ...a dual purpose to manage lands and resources and to affirm and reinforce one's relationship to the earth and its inhabitants" (Paci et al. 2002:119). Stevenson (1996:281) considers traditional knowledge to include the "shared experiences, values, traditions, subsistence lifestyles, social interactions, ideological orientations, and spiritual beliefs unique to Aboriginal communities". Erica-Irene Daes (chairperson on the UN Working Group on Indigenous Peoples) describes Indigenous knowledge as "a complete knowledge system with its own concepts of epistemology, philosophy, and scientific and logical validity" (Daes, 1994:41 in Battiste and Youngblood Henderson 2000).

Traditional Knowledge and Western Science

In Canada traditional knowledge is poorly understood by mainstream society. An effective way for non-Aboriginal peoples to begin to understand the concept of traditional knowledge is through a comparison and contrast of traditional knowledge and western science. Although they differ in many ways they do share some characteristics as illustrated below.

1-Traditional knowledge is context specific as it is related to people living in a specific or constrained geographic locale (i.e. traditional territory) (Kassam 2007). Traditional knowledge holders have an intimate understanding of their homelands and have their own names for geographic and cultural features on the landscape. They are familiar with the quality and quantity of the waters, plants, animals, and fish in their territory and changes that have occurred in the recent and more distant past. They know the location of all cultural areas on the landscape (e.g., cabins, graves, ceremonial sites) and areas important to the waters, plants, animals, and fish (e.g., natural springs, rare plant locations, bear dens, eagle nests, fish spawning habitat). Because traditional knowledge is localized the holders are reluctant to generalize outside of their field of experience. This is contrast to western science that speculates and then tests global generalizations (Battiste and Youngblood Henderson 2000).

2-Traditional knowledge often has an empirical tendency as it is observational, analytical, practical, and effective (Kassam 2007). Battiste and Youngblood Henderson (2000) describe how traditional knowledge is similar to western science in that it is empirical, experimental, systematic, and cumulative. In each generation individuals make observations, compare their experiences with what they have been told by their teachers, conduct experiments to test the reliability of their knowledge, and exchange findings with others. Everyone must be a scientist to subsist by direct personal efforts as a hunter, fisher, or forager with minimal mechanical technology. However where western science strives to be objective in its empiricism, traditional knowledge does not and is strongly routed in belief.

3-Traditional knowledge, like western science, is cumulative in nature as it is based on past tradition but is also dynamic and adaptive (Kassam 2007). There is more to traditional knowledge than repetition from generation to generation of a relatively fixed body of data. As described by Battiste and Youngblood Henderson using the term traditional does not mean the knowledge is old and static, "what is traditional about traditional ecological knowledge is not its antiquity, but the way it is acquired and used" (2000:46). What makes it traditional is the social process of learning and sharing knowledge (Battiste and Youngblood Henderson 2000). This is an important characteristic that mainstream Canadians often to dot realize.

4-Traditional knowledge transmission is intimate and oral and not distant and literate (Battiste and Youngblood Henderson 2000). Whereas western science can be accessed via scholarly journals, traditional knowledge must be sought through face to face discussions with traditional knowledge holders and experiences on the land.

For an example of the complementary nature of traditional knowledge and western science see articles by Lertzman (2010) and Garabaldi (2010) who discuss this with regards to resource management systems.

Types of Traditional Knowledge

Traditional knowledge is a broad concept that can sometimes be better understood through specific examples. Two common types of traditional knowledge include: traditional ecological knowledge and traditional land use. Traditional ecological knowledge includes information about the environment and may include knowledge about "resource distribution and patterns, schedules for resource harvesting, and species-specific habitat and behaviour, as well as the corresponding community harvesting patterns...weather patterns, flood and fire cycles, effects of snowfall on travel, hunting, and other activities; information about landmarks, navigability of trails, rivers, and ice-packed ocean waters; as well as general environmental conditions" (KAVIK-AXYS Inc. 2005:5). Traditional ecological knowledge has also been defined by Berkes (1993) "as a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment".

Traditional ecological knowledge has been defined as:

> "a body of knowledge and beliefs transmitted through oral tradition and first-hand observations. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use. Ecological aspects are closely tied to social and spiritual aspects of the knowledge system. The quantity and quality of traditional ecological knowledge varies among community members, depending on gender, age, social status, intellectual capability, and profession. With its roots firmly in the past, traditional ecological knowledge is both cumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socioeconomic changes of the present" (Emery 1997:5-6 in Battiste and Youngblood Henderson 2000).

Traditional land use information refers to knowledge about how the people of a particular culture use the land and its resources and may include a study of: "trails, place names, subsistence resource use, sacred and cultural sites, burials, settlements and camps, and other places, uses or knowledge relevant to life on the land" (KAVIK-AXYS Inc. 2005:5). Traditional land use sites cover a temporal spectrum ranging from the present and the recent past (historic) to the more distant past involving ancestral (archaeological) sites. Other 'types' of traditional knowledge may also exist (e.g., traditional socio-cultural

knowledge). However, these 'types' of traditional knowledge are western constructs designed to help understand, research and utilize traditional knowledge. It is important to emphasize that these 'types' are in fact deeply interwoven and not discrete categories at all.

Traditional Knowledge and Culture Change

One of the ways that assimilation of First Nations people in Canada has impacted traditional knowledge is through language loss. Battiste and Youngblood Henderson (2000) explain how language is the link to Indigenous knowledge and that without Indigenous languages, lessons and knowledge embodied in the language are lost. Indigenous language has been eroded via residential schooling and cognitive-imperialistic public schooling.

However the impacts of assimilation on traditional knowledge become less of an issue when you understand traditional knowledge as dynamic. As outlined above, traditional knowledge is not static and changes with time. Thus a criticism of the traditional knowledge in my dissertation being tainted by modernity is an unreasonable accusation (because of course it is). The more relevant question is 'does it matter that the traditional knowledge utilized in my dissertation has been influenced by modernity'? To answer this question we must first look at how I am applying traditional knowledge. The traditional knowledge in my dissertation is applied with the purpose of documenting current infringements to land use (chapter 6) and how the knowledge of land use and infringements can be used to create a plan for continued land use (chapter 7). This section actually relies on the fact that the traditional knowledge is current and referring to recent observations as we are dealing with the issue of how land use has been impacted by industry and how strategies can be devised for land use to effectively co-exist with development in the future.

Traditional knowledge in my dissertation is also applied in an ethnoarchaeological sense to provide analogies to help current archaeologists better interpret the diversity and complexity of subarctic land use (chapter 8) and to create more effective models for predicting areas of archaeological potential (chapter 9). The only viable critique of how traditional knowledge is used in chapters 8 and 9 is the same general critique levied at ethnoarchaeology regarding the fact that present observations cannot be blindly applied to

the past without accounting for change. Approaches to dealing with this fundamental flaw of ethnoarchaeology are discussed in the next section.

Ethnoarchaeology

Ethnoarchaeology is best thought of not as a theory but as a research strategy (David and Kramer 2001). The emergence of this strategy began with the surfacing of cautionary tales (Heider 1961) that alerted archaeologists to how poorly prepared they were to conceptualize the rich variety of life lived in very different cultures because of their ethnocentric bias. Ethnoarchaeological fieldwork was thus suggested as a way of improving the stock of analogies accessible to archaeologists (Kleindeinst and Watson 1956).

Whereas in deductive inference the truth of premises guarantees truth of conclusions, analogy is a type of inductive inference whereby all premises can be true but conclusions can be false (Kelley and Hanen 1988). Thus analogical inferences are ampliative, meaning that they claim the existence of more extensive similarities in their conclusions than could be established in their premises and thus are liable to error (Wylie 1985). It was this susceptibility to error that prompted a variety of approaches to increase the validity of analogical inference utilized in ethnoarchaeology.

Clark (1954) attempted to place analogy on a firmer foundation by warning ethnoarchaeologists against presuming genetic relationships between source (modern) and subject (archaeological) populations as Sollas (1924) had done when he argued the 'Bushmen' as descendants of the Aurignacions and the Eskimo relatives of the Magdelenians. Clark argued for use of the direct historical approach if direct ancestors were present. If unavailable, he stated that source populations should be selected who share similar technology, economics, and environment. Ascher (1961) followed by providing strategies for a more systematic means for assessing relative strengths and cogency of analogical arguments. Binford's perspective of the issue was that "analogies should serve as the foundation of a series of deductively drawn hypotheses that can be tested to refute or confirm the postulate...analogy should not be used for interpretation but rather to provoke new types of investigation" (1967:33).

Despite attempts to improve the use of analogy, there were critics that were fundamentally against the use of analogy in archaeology regardless of how it was applied. In the article entitled 'Beyond Analogy in Ethnoarchaeology' (1978), Gould argued that the use of analogies would deny archaeologists the possibility of discovering new things in the past. He felt that even when multiple analogies are used it cannot provide a way for us to know more about the past than we already do about the present since we are still bound by the present as a source of these alternatives (Gould 1980). Likewise, Wobst (1978) argued that if archaeologists consume ethnographically derived theory without prior testing, there is a great danger that they merely reproduce the form and structure of ethnographically perceived reality in the archaeological record. He felt that archaeologists needed to liberate their theories from the biases imposed on them by the ethnographic record.

Wylie (1985) furthered the work on analogy when she distinguished between two types of analogies. In *enumerating* analogies the subject has attributes A, B, D, and F and the source had A, B, C, D, and E. In *relational* analogies the absence of C and E in the source and presence of F in the subject are explained. Where the first type of analogy assumes but does not demonstrate relationships, the later is stronger because it tries to explain the presence and absence of attributes (Wylie 1985).

For a hypothetical example, an archaeologist is comparing an excavated floor of an older tipi (subject) and a modern tipi (source). Excavators find a number of similarities (number of poles, direction of door, central hearth) and differences (diameter, hearth materials, tent pegs). In an enumerating analogy it is assumed that the two structures are related based on the similarities. However, in a relational analogy the researcher attempts to understand why there are differences in order to create a stronger analogy. For example the researcher may discover that tipi size is related to the wealth or size of a family and is better considered a neutral rather than negative component of the analogy. Further research may explain that dung remains in the subject hearth versus aspen poplar remains in the source tipi is related to availability in fuel sources that has both a temporal and geographic element to it. Research also may show that metal tent pegs replaced bone pegs as a result of the

decimation of bison populations. Through the relational approach the negative components of the analogy are explained and can no longer be viewed as weaknesses of the analogy.

Stahl (1993) sought to improve the use of analogy in ethnoarchaeology by arguing that analogies should be grounded in specific time-space contexts. She felt that ethnoarchaeologists should not assume the pristine and static nature of ethnographic groups but should consider only that information that is traditional. She felt that too little attention is paid to cultural discontinuities from European expansion and their theoretical and methodological implications.

David and Kramer (2001) cite the following general principles regarding analogical arguments in archaeology:

1. "The subject and source cultures should be similar in regard to variables likely to have affected or influenced the materials, behaviours, states, or processes being compared.
2. Since cultures are generally conservative, if the source culture is the historic descendent of the subject culture, there is...a greater intrinsic likelihood that similarities between the two will exist than if there is no such antecedent-descendent relationship.
3. The range of potential source models for comparison with subject data should be expanded by ethnoarchaeological and other means in order to obtain as representative a range as practically possible.
4. Not merely one but several possible analogs for the subject data should be sought among the sources.
5. Hypotheses developed from these analog models should be tested by various means that may well include archaeological excavation" (David and Kramer 2001: 47-48).
6. "Source- and subject-side strategies for establishing relevance should be employed by expanding the bases of interpretation and elaborating the fit between source and subject" (Wylie 1985:100-101).

This chapter demonstrated how archaeologists came to fill the 'vacant core' left by anthropologist in Canada when they began to facilitate traditional land use studies with First Nations. It was through these experiences conducting traditional land use studies that many archaeologists turned to Indigenous archaeology. Such was my experience in archaeology that led me to complete my dissertation using an Indigenous archaeological approach. In order to avoid the pitfalls of Indigenous archaeology outlined by McGhee (2008), I employ a truly collaborative approach with Swan River First Nation. In this approach traditional knowledge and western science receive equal weight and are not placed in adversarial contexts.

One of the most salient features of my Indigenous archaeological approach is the inclusion of traditional knowledge. In the creation of land use plans (chapter 7), western science and traditional knowledge are given equal voices whereby they are able to enhance the research and provide a richer understanding. In chapters 8 and 9, traditional knowledge is utilized to enhance subarctic archaeological interpretation and modelling. I argue that the field of ethnoarchaeology can be looked to for methods to avoid the pitfalls of the blind projection of traditional knowledge from the present onto the archaeological past.

CHAPTER 4. METHODS

The following chapter outlines the methods used to collect traditional knowledge for use in this dissertation. The section below discusses the agreements and ethics, literature review, collection settings, information processing and storage, and limitations on traditional knowledge collection associated with this dissertation.

Traditional Knowledge Collection

Agreements and Ethics

After a number of discussions over the course of a year with Swan River First Nation chief and council it was agreed that traditional knowledge research for the purpose of my dissertation could be conducted with Swan River First Nation in exchange for compiling a Traditional Land Use Study for the Nation. This led to me taking on the role of Swan River First Nation's Traditional Use Study manager. The agreement (see data sharing agreement below) for this arrangement was signed by Swan River First Nation's Chief Leon Chalifoux and myself. Ethics clearance was also granted by the University of Calgary (see Appendix 4.1). Throughout the project I stayed in weekly email contact with the Chief who provided over-all guidance for the study and monthly email updates were provided to council. Updates were provided to Swan River First Nation Elders whenever community meetings were held (approximately four times a year).

Data Sharing Agreement between Swan River First Nation and Ave Dersch

This confirms that information collected during Ave Dersch's research with Swan River First Nation on their Traditional Land Use Study can also be used in her Ph.D. dissertation at the University of Calgary in the Department of Archaeology, dependent on the following criteria being met:

- All research remains the intellectual property of Swan River First Nation
- All research is done in partnership with Swan River First Nation
- All research aims to have a positive impact and benefit to Swan River First Nation
- Research results are verified by participants prior to project completion
- Sensitive information is removed at the request of participants

- All raw material including notes, photos, and GPS waypoints are the property of Swan River First Nation and are returned to them
- Completed research will be presented to the youth via school presentations, to Elders via Elders meetings, and to the rest of the community during community meetings

This agreement was created based on the concept of Participatory Action Research that was used to guide all of the research conducted with Swan River First Nation. Themes in this methodology include: "empowerment of participants; collaboration through participation; acquisition of knowledge; and social change" (Bell and Napoleon 2008:9). Critical questions addressed when using this methodology include: "Whose research is it? Who owns it? Whose intentions does it serve? Who will benefit from it? Who has designed its questions and framed its scope? Who will carry it out? Who will write it up? How will the results be disseminated?" (Bell and Napoleon 2008:10).

Outlined below are guiding principles that were followed while conducting traditional knowledge research with Swan River First Nation (KAVIK-AXYS Inc. 2005: 5):

1. traditional knowledge protocols are required
2. Aboriginal people own and control their traditional knowledge
3. Aboriginal groups and participants require informed consent to participate in traditional knowledge research
4. provide enough information about the proposed project so that participants are able to form an opinion about potential impacts
5. explain why traditional knowledge is being collected
6. explain how and where their traditional knowledge will be used, and where and how the original interview material will be archived
7. note that you understand that they have the right to:
    a. not participate
    b. set conditions of use for their traditional knowledge
    c. protect their intellectual property rights
    d. assert confidentiality over certain aspects of traditional knowledge; and

8. explain how and when payment would be made for their participation
9. provide information on who can be contacted if they have additional questions or concerns
10. explain how they will be given credit for their contribution
11. describe the proposed follow up and data verification process
12. Aboriginal peoples must be active participants in the design and conduct of traditional knowledge work
13. respect for traditional channels of authority, and level(s) of approval that may be required by Aboriginal group(s)
14. community selection of traditional knowledge participants
15. researchers shall work with Aboriginal group and/or traditional knowledge participants to establish a traditional knowledge program that reflects their perspective, needs, capacity, and schedule
16. the conduct of researchers and others working with Aboriginal peoples must be professionally responsible and culturally responsible at all times.

Methodological Approach

The approach used to collect traditional knowledge was based mainly on my experience from my Master's research (Dersch 2005) and as a consultant conducting a variety of traditional land use studies specific to resource development projects. In addition, I reviewed a number of traditional land use studies completed by Athabasca Chipewyan, Fort McKay, Fort McMurray, Chipewyan Prairie Dene, and Bigstone Cree First Nations. Other methodological considerations came from reviewing the following sources:

- *Traditional Knowledge Manual, Volume 2: Using Traditional Knowledge in Impact Assessments* (KAVIK-AXYS Inc. 2005)
- *Chief Kerry's Moose: A Guidebook to Land Use and Occupancy Mapping, Research Design* (Tobias 2000)
- *Living Proof: The Essential Data-Collection Guide for Indigenous Use-and-Occupancy Map Surveys* (Tobias 2009)

My methodological approach focused on multi-vocality, was interdisciplinary in nature, covered a diverse temporal spectrum and is best described as Indigenous archaeology. This

research contains Swan River First Nation's voice (in the form of direct quotes) and is not written like a 'traditional' ethnography. This research includes an Indigenous perspective and, as the research was directed by the community, is based on what the community of Swan River First Nation believed to be most important.

Literature Review

Traditional knowledge was collected in a variety of ways. First a literature review was conducted of all traditional knowledge previously collected with Swan River First Nation. Once collected all documents were made into a digital library housed at the Swan River First Nation band hall. The following sources provided traditional knowledge utilized in this project:

- 'Treaty and Aboriginal Rights Research' (TARR) transcripts held in archive in the TARR Slave Lake office (1970s,1990s, 2000)
- interview transcripts and extensive mapping completed as part of a Traditional Land Use Study facilitated by Barry Hochstein with Swan River First Nation (1999-2002)
- transcripts from interviews with Swan River First Nation members by Karen Geertzema as part of her Master's thesis completed at the University of Alberta (2008)
- research done with Swan River First Nation for the traditional knowledge components of two pipelines (Northern Gateway and Pembina Nipisi and Mitsue) (2007-2009) (the research for Northern Gateway was completed by myself while a consultant for FMA Heritage Resources Inc. and the research for Pembina was completed as a consultant for Swan River First Nation)
- interviews and traditional land use mapping completed by Swan River First Nation Traditional Use Study staff member Duff Twin in 2009

Traditional Knowledge Collection Settings

Traditional knowledge collection was carried out from the fall of 2008 to the spring of 2010 with Swan River First Nation members and generally took place in participants' homes, the researcher's cabin, the band hall, or other quiet areas. A variety of maps (e.g., National Topographic System, air photo) were used during sessions to help discuss and identify

areas within Swan River First Nation's traditional territory. A notebook and, when permitted, a digital voice recorder was used during interviews. Most interviews lasted approximately one hour and varied in length based on participant fatigue and schedule. Cree translators were not used in any interviews as all individuals were fluent in English. Informed consent of how traditional knowledge would be used was obtained orally at the beginning of each interview and participants were notified that they could stop the interview at anytime. Each participant was given a confidential participant code to protect their identity.

During all traditional knowledge collection a cash honorarium of between $100-$300 as well as tobacco was provided to participants as per community protocols. Swan River First Nation covered all honoraria and tobacco costs. A number of different strategies were used to collect traditional knowledge including one on one interviews, large group sessions, and focus groups.

One-on-One Interviews

Twenty-three one-on-one, semi-directed interviews were completed with Swan River First Nation Elders. Swan River First Nation consultation staff identified the individuals to be interviewed by providing a list of Elders with their contact information. When possible, individuals on the list were interviewed from eldest to youngest and individuals interviewed by Duff Twin in 2009 were not re-interviewed. In circumstances where participants agreed to be audio recorded, transcripts were made of interviews. All notes and transcripts from individual interviews were given to the Elder to review for errors and sensitive information that they wanted removed. Information from transcripts is denoted with double quotations throughout this dissertation (e.g., "xxx"). The interview guide used for the one-on-one, semi-directed interviews can be found in Appendix 4.B.

Large Group Session

A large group session was completed with all community Elders in the Swan River First Nation band hall with a specific focus on water quality and quantity. Results from this session could not be transcribed. Instead notes were taken and when possible Elders' comments were paraphrased. This was also the type of format used to collect traditional

knowledge for both pipeline projects mentioned in the literature review. Information from paraphrasing is denoted with single quotations (e.g., 'xxx'). The interview guide for the large group session can be found in Appendix 4.C.

Small Group Sessions

A series of five small group sessions with approximately four individuals per group were completed with Swan River First Nation youth (18-30 years of age). Youth selected for involvement were active traditional harvesters and were chosen by the Swan River First Nation consultation staff. The Swan River First Nation consultation field director assisted in the facilitation of these small group sessions. The interview guide for the small group sessions can be found in Appendix 4.D.

Verification of Results

The traditional knowledge collected was reviewed by Chief Leon Chalifoux and consultation manager Darryel R. Sowan before being permitted to be included in this dissertation. Some of the figures utilized in this dissertation are considered sensitive and confidential and I was asked that these not be made public. Those people interested in access to confidential materials are asked to make a request to the chief and council of Swan River First Nation.

Information Processing and Storage

The transcripts and notes from the one-on-one interviews, the large group meeting, and the small group sessions were compiled into one document under general headings (i.e., berry picking, big game hunting, grave sites). This extensive task was done manually and not with the use of software to ensure that subtle meanings and relationships were not misunderstood and mis-categorized. In many cases information was included under more than one category, and categories were kept broad enough to avoid over-compartmentalizing the traditional knowledge. Once in categories, the duplicate information was condensed by listing numerous participants behind pieces of traditional knowledge shared by multiple people (e.g., #47N,#48N,#7N). When possible, exact Elders' quotes were kept in favour of statements only captured via paraphrasing in notes. To avoid de-contextualization, the traditional knowledge is presented in the results chapter in a very raw and un-modified manner through the use of lengthy quotations. All quotes from Swan

River First Nation members are italicized in an attempt to differentiate Swan River First Nation members' voices from that of my own.

The following coding system is used throughout the dissertation to delineate both the participant (a number) and the source of the information (a letter):

- Treaty and Aboriginal Rights Research (TARR) Interviews: e.g., #1-T
- Barry Hochstein Interviews: e.g., #2-B
- Northern Gateway Pipeline Project: e.g., #3-N
- Duff Twin Interviews: e.g., #4-S
- Ave Dersch Interviews: e.g., #5-D

All traditional knowledge (transcripts, photos, maps, shapefiles) is stored on Swan River First Nation's GIS system database SpatialQ in cloud format and is considered confidential information. This database is password protected and only accessible by myself and the consultation manager. Care will be taken to ensure that files are updated as required to current media and formats.

Limitations of Traditional Knowledge Collection Methods

Most of the traditional knowledge contained in this dissertation was collected in a desktop manner (inside) rather than in the field (outside) where Elders often feel more comfortable sharing knowledge and where their memories are triggered by their surroundings. In addition every interview was conducted in English rather than in Cree and was recorded in written format which is likely responsible for the loss of an immeasurable depth of understanding. However, when possible, field observations supplemented understanding (e.g., observing the production of dry meat).

It generally can be acknowledged that assimilation has had an impact on traditional knowledge but no attempt has been made in this dissertation to tease apart more 'traditional' information from that impacted by colonization. I have no frame of reference to evaluate if traditional knowledge is legitimate or not. As outlined by Battiste and Youngblood Henderson (2000), Eurocentric thought must allow Indigenous knowledge to

remain outside itself, outside its representation, and outside its disciplines. Eurocentric contexts cannot do justice to the exteriority of Indigenous Knowledge.

A sample size of over 50 transcripts from one-on-one interviews (approximately half completed by myself and the other half being archival transcripts that I reviewed) allowed me to reach a level of saturation where similar answers were being given. However the concept of sample size utilized by social scientists may not be a legitimate approach to traditional knowledge. It should also be mentioned that traditional knowledge is largely learned through experiential learning and that the Elders whom I interviewed were generally only comfortable sharing information with me regarding what they had personally done and observed themselves rather than what they had heard. They were always careful to differentiate between traditional knowledge that they knew and traditional knowledge that they had heard.

Much of the traditional land use research I completed may have benefited from the involvement of individuals trained in law, cultural anthropology, ecology, native studies, and political science. As outlined by Downum and Price (1999), applied anthropologists would benefit from training in policy analysis, techniques of collaboration and mediation, and ethnographic methods such as oral history. However, traditional land use research often lacks the luxury of time, money, and human resources. Trust is often the most important credential a researcher can have when completing traditional land use studies.

CHAPTER 5. PAST LAND USE

The objective of the following chapter is to document how and where Swan River First Nation exercised their Treaty Rights to hunt, fish, trap, and gather in the past. A discussion of historic environmental conditions and the early inhabitants of the area is followed by sections on past land use pertaining to traditional resources, traditional land use, lifeways, and worldviews of Swan River First Nation. Figure 5.1 illustrates most of the geographic locales discussed in this chapter.

Historic Environmental Conditions

At the time of 'contact' Lesser Slave Lake was described by early explorers as a land rich in resources including fish, game, waterfowl, and fur. David Thompson, the first documented European in the Lesser Slave Lake area in 1799, had this to say:

> "The Slave Lake has a very bold appearance. Its banks are high hills covered with seeming small pines and about two thirds up them are ridges of snow. Their height may be estimated at 800 ft perpendicular above the level of the lake and behind these appear hills of greater magnitude and height. The shore of the lake is a tolerable fine sand and gently deepening. The head of the river is barred with this sand and has not above 10 or 12 inches of water" (Babcock n.d.: 46, citing David Thompson's Journals 1799-1804, Vol. 6, No.12).

Other Europeans who first observed the Lesser Slave Lake area had the following to say about the region's fish, game, waterfowl, and fur resources.

Fish and Game

> "The SW side is more level and the Country in general is more dry and freer from Rocks- about the lake in several places, particularly on the N and NW borders of it Buffalo is said to be pretty plentiful- and quite thro the Lake plenty of large Trout and Tickameg is to be caught" (Babcock n.d.: 46, from Peter Fidler's Journal 1799-1800).

> "The water of this lake teem with white fish, game in myriads frequent its shores, and can be easily got at in the numerous little nooks and bays" (Horetzsky 1874:20-21).

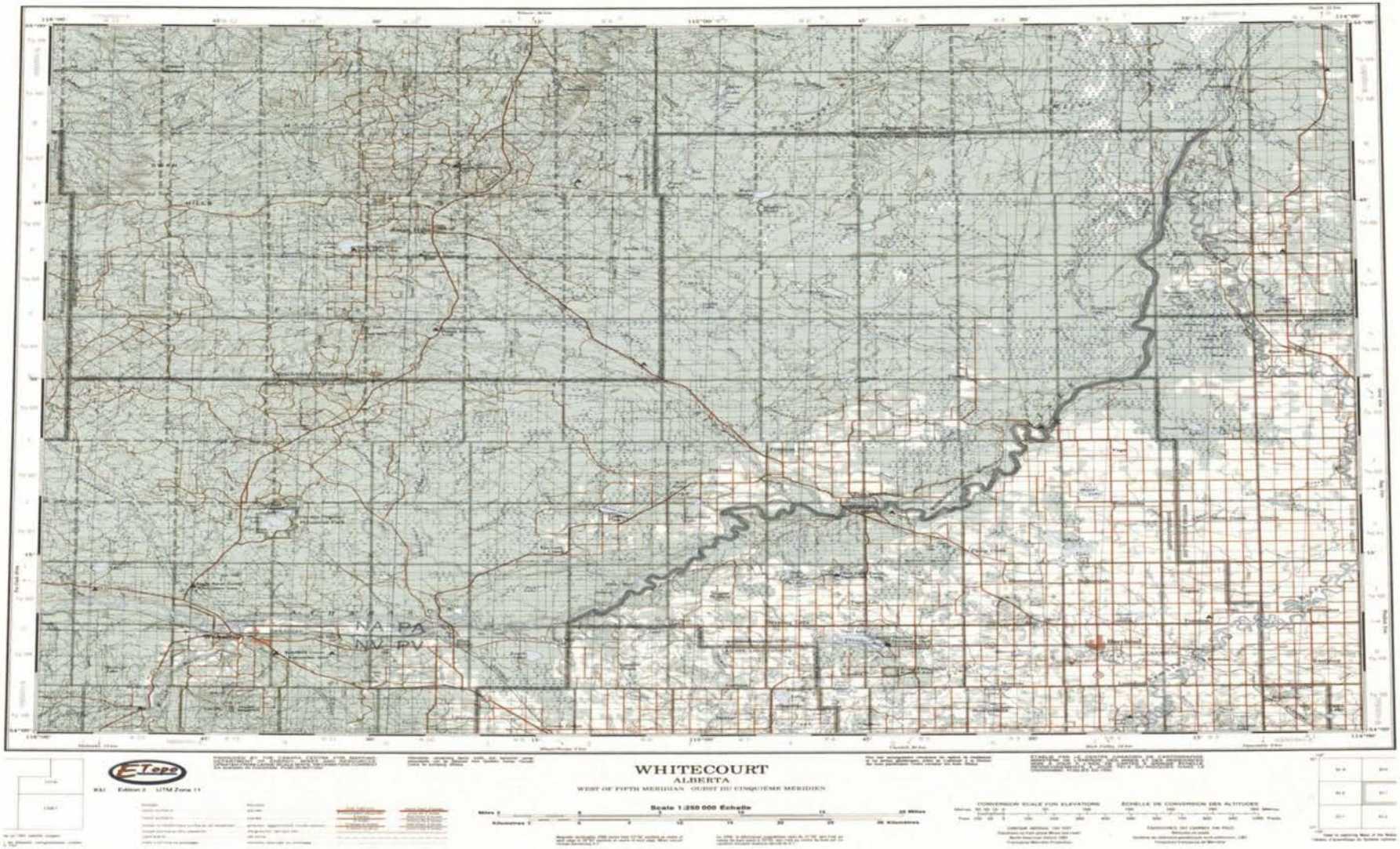

Figure 5.1 Areas Utilized by Swan River First Nation

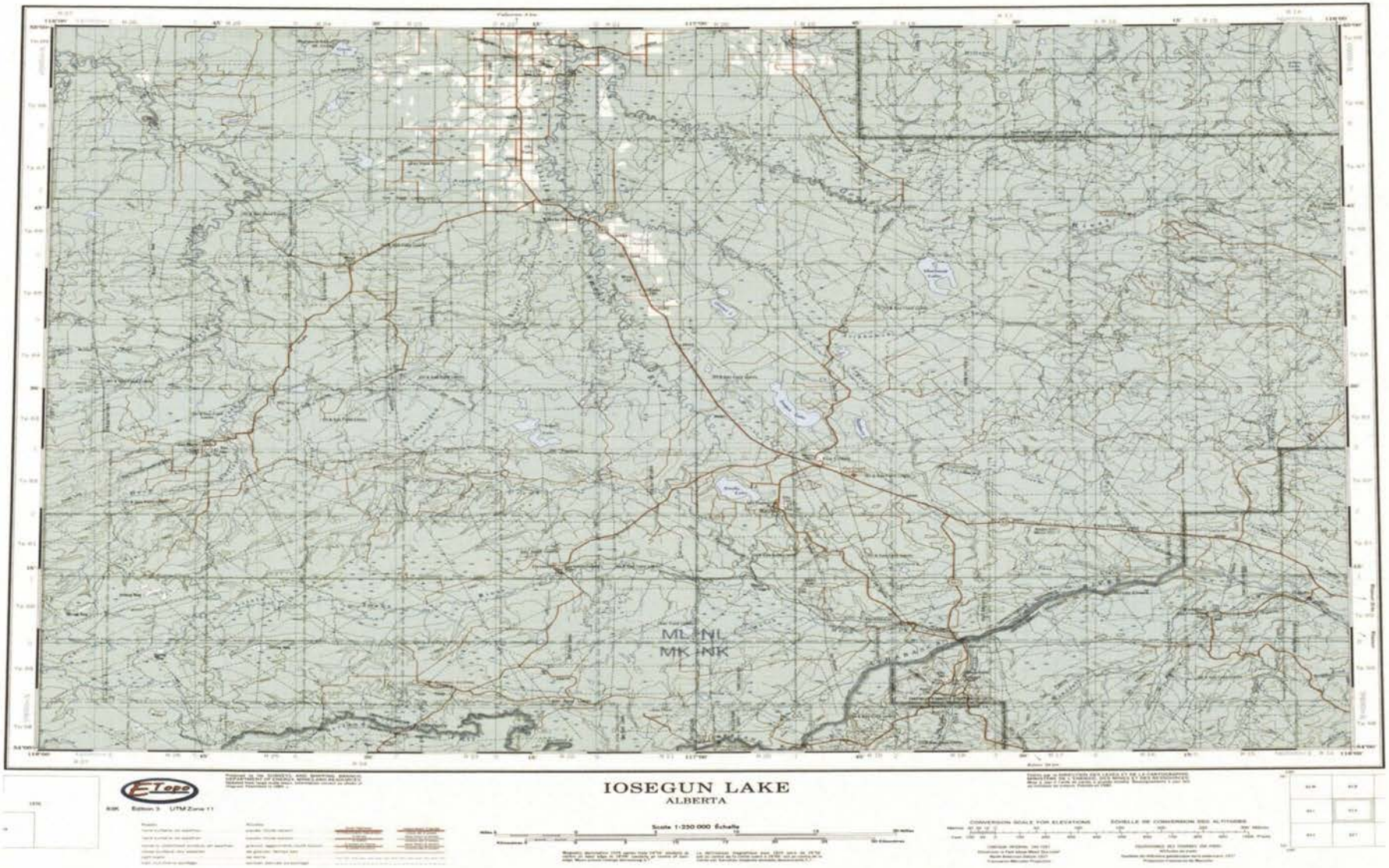

Figure 5.1 Areas Utilized by Swan River First Nation

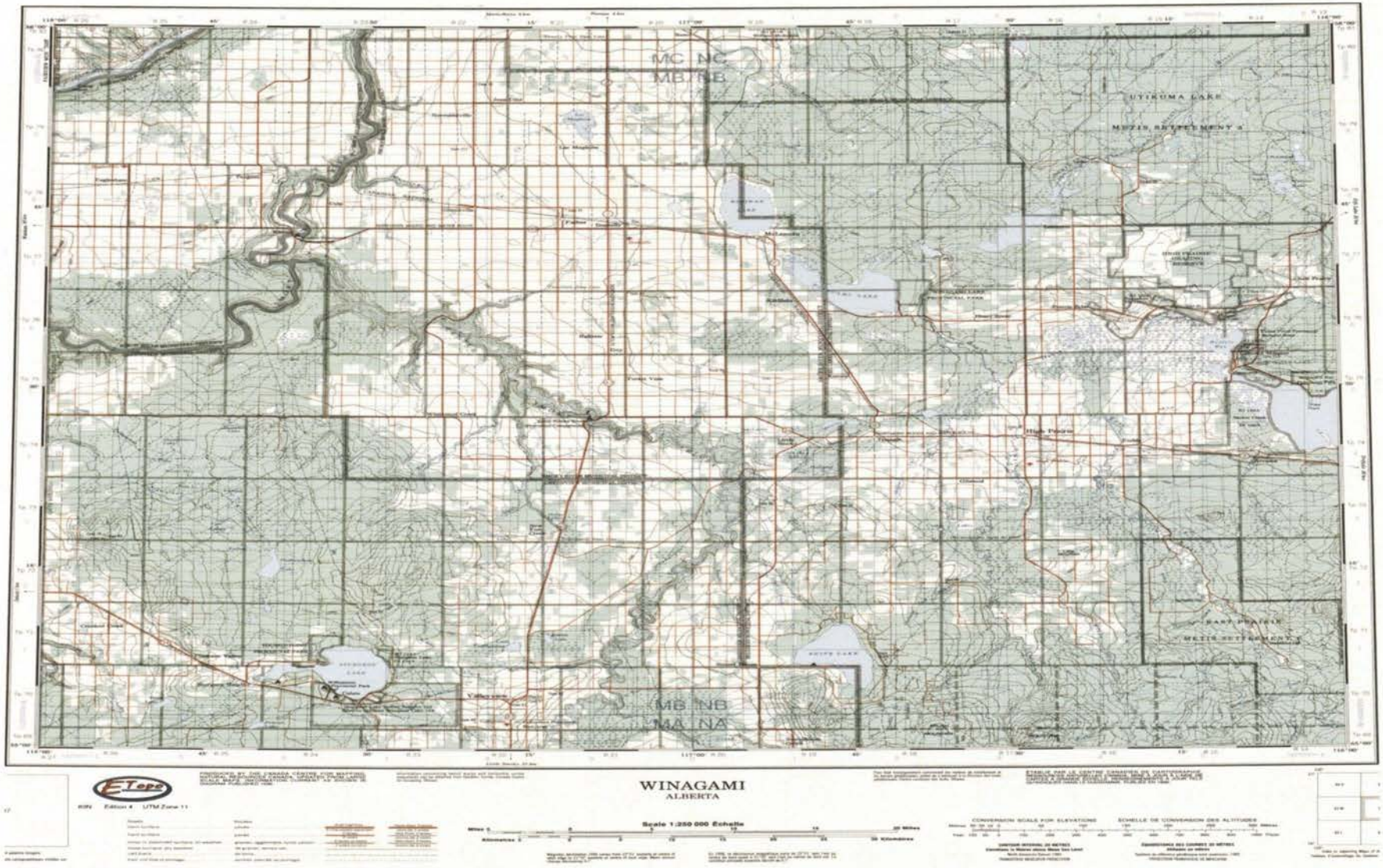

Figure 5.1 Areas Utilized by Swan River First Nation

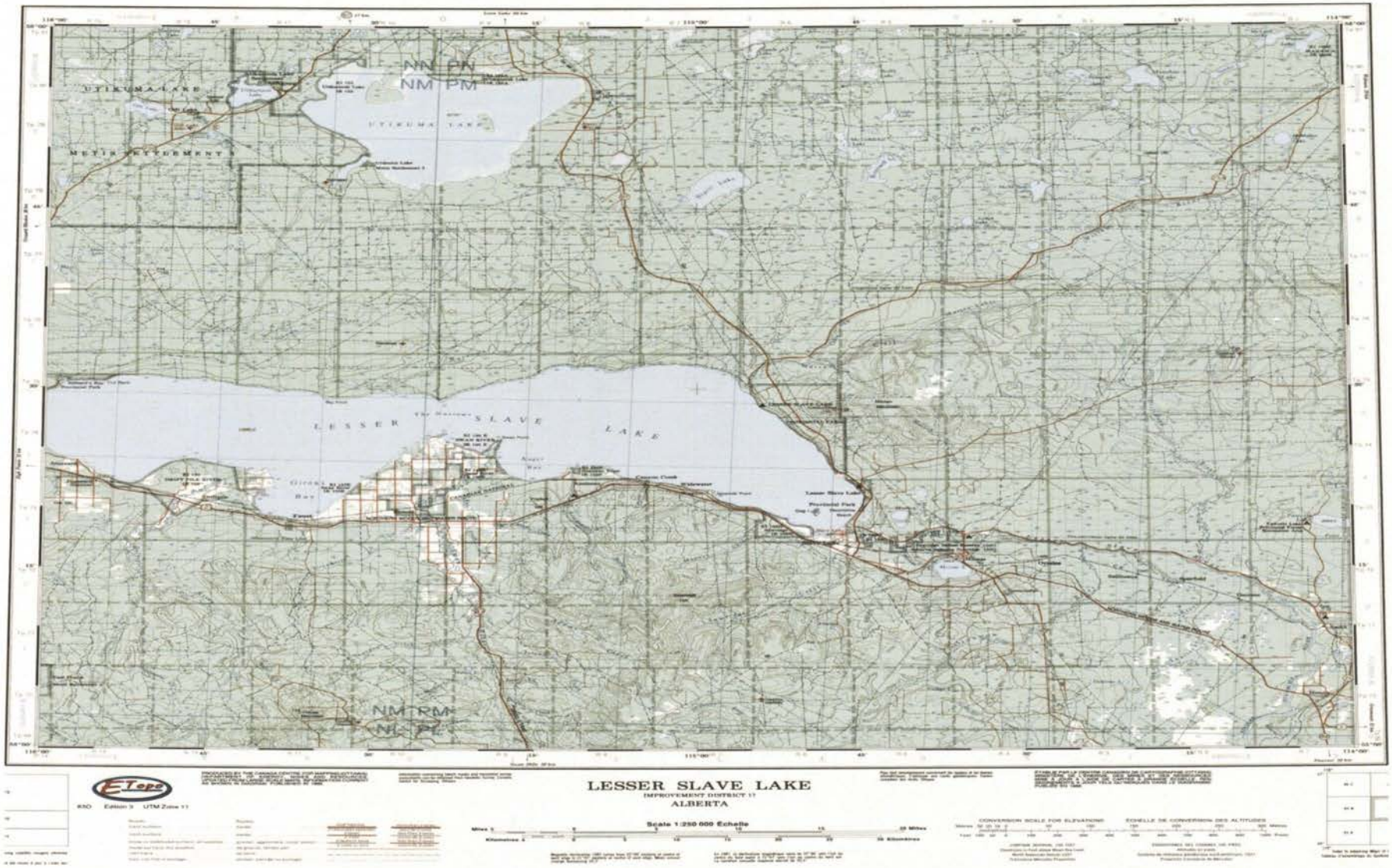

Figure 5.1 Areas Utilized by Swan River First Nation

"Shaw Point on Lesser Slave Lake played a major role as a fishing station for a nearby fort with nearly 25,000 whitefish taken from Shaw Point in the fall of 1820" (Babcock, notes, B115/e/2).

"Fisheries in Lesser Slave Lake have always been counted the best in all Athasbasca" (Mair 1908:77).

"I finally arrived at Lesser Slave Lake which was then [1898] a land of plenty with jumbo whitefish selling from ten to twenty-five cents" (Maurice 1947:21).

Waterfowl

"At the time of our visit [mid-October 1879], the whole vicinity of Slave Lake was populas with water fowl on their way southward- ducks of several species, geese, cranes, and swans...the lake is still an important water fowl area, particularly on the west end, where there are large weed areas which provide excellent habitat" (George Dawson 1881).

As described by Father Lacombe, part of the Treaty Commission, "along the south shore of the lake he came upon a large encampment of Crees, drawn there at that season doubtless by the hosts of ducks and wavies that haunt the lake" (Hughes 1911:66 from Father Lacombe's Journal 1856).

Fur

"[The area] was by all odds the most productive of the Districts east of the Rockies...[and] produced the great mass of pemmican which provisioned brigades of the North and boats running from Lake Winnipeg to York Factory" (Morton 1973:698).

"Trappers were able to obtain nearly 8,000 beaver in the winter of 1878" (Macoun 1882:137).

Early Inhabitants of the Lesser Slave Lake Area

In the section below, oral history of Swan River First Nation is coupled with information from historical documents to paint a picture of the Aboriginal inhabitants of the Lesser Slave Lake area from time immemorial to the present. The section illustrates how complex the ethnic history of the region is and shows how various lines of evidence can contribute to an understanding of the past.

Early Inhabitants

There is considerable debate surrounding the claim that the name Lesser Slave Lake implies that the first residents of the area were the Slavey people who now live further north. However, the Cree word for Slave, *hya-tche-nu*, could mean a number of things. First, it may in fact refer to the Athabascans who today live elsewhere in Alberta and had a tradition of war with the Cree over lands (i.e., the lands between the Peace and Athabasca Rivers). Second, the word could refer to a people who the Cree feared or looked down on, either dangerous or defeated people. Finally, the Cree word for Slave, *hya-tche-nu*, could be a misunderstanding of the word *hua-tsai-see-nu* meaning 'stranger' or 'any unknown people' be they Beaver, Slavey, Blackfoot, or an unfamiliar Cree group (Gillespie 1981:164-165, TARR 1978:2-3). Confusion over the Cree spelling of Lesser Slave Lake is evidenced when Charles Mair gives the name for the Lesser Slave River as *Iyaghchi Eennu Sepe* (River of the Blackfeet) (Mair 1908:43) and when Somers Somerset records the name of the lake as *Ayitiinoo Sagahegun* (Somerset 1895:14). Both parties may be trying to say the Cree word *Ayacheyinew* meaning 'foreign Indian' (Baergen 1967:136).

Evidence for the early inhabitants being Athabascan people comes from an interview with Elder Mustus, who, while discussing the early inhabitants of the Lesser Slave Lake area, said the following: "I think they're Slavey. They were from here at one time but the Crees scared them off long ago. My grandfather [Moostoos, a councillor for Sucker Creek who signed Treaty 8] was related to them while they lived here before they were frightened away from here. That is another reason why he was able to sell the land (i.e., sign the Treaty), it was like his relatives had left the land for him. The people up north still remember their grandfather who was there" (TARR 1978:80).

Other testimony regarding the original inhabitants of the Lesser Slave Lake area comes from an interview with a Swan River First Nation Elder, "*Originally, according to old stories, this territory was strictly inhabited by the Slave Indians until the Cree pushed them northward to where they now reside. I guess they had inter tribal fights, i.e,. between the Crees and the Slaves*" (#25T). Cleophas Cardinal shared this perspective and believed that the unknown former inhabitants were most likely Slaves (Slaveys) who were dispersed by

the Crees. He described how some of them moved south where others moved north towards Fort Vermillion (Bryan 1969:33). Further evidence comes from a Bigstone Cree member who was quoted in their Cultural Land Use and Occupancy Study as saying the following, "my mother said the first people to settle at Chipewyan Lake [a small lake near Wabasca] were Chipewyan People" (AINA 1999:58).

Historical records also suggest that early inhabitants of the Lesser Slave Lake region were of Athabascan (Beaver and Slavey) descent. Alexander Mackenzie stated that the Lake, called Slave Lake by the Knisteneaux (Cree), derived its name from that of its original inhabitants, who were the Slaves (Lamb 1970:249). A map made by Peter Pond in 1787 indicated that Beaver inhabited the Lesser Slave Lake region (Lamb 1970:13). After careful analysis of historic sources, anthropologist Gillespie (1981) argues that the Athabascans of the Lesser Slave Lake area were Beaver Indians, but that by the late 18th century the Cree had displaced the Beaver to the west of the lake.

Jenness (1958:383) took considerable creative license in interpreting Alexander Mackenzie's early accounts of Lesser Slave Lake inhabitants when arguing that in the middle of the 18th century the Beaver Indians, who had until that time occupied not only the entire basin of the Peace River below its junction with the Smoky but the district around Lake Claire and the valley of the Athabasca River as far south as the Clearwater, were pushed north by the Cree who had acquired firearms from fur traders on Hudson Bay. It was only after they were weakened by the small pox epidemic of 1781 that the decimated Cree population agreed to a truce at Peace Point (Jenness 1958:383).

Mackenzie described how the Cree were familiar with the Lesser Slave Lake area because they had formerly travelled through the area as part of their war path between the Saskatchewan River and Peace River. This war path was described as follows: "on their war excursion from the Saskatchewan to the Peace River country...[the Crees] had been accustomed to leave their canoes at this lake, (i.e., Lesser Slave) following a beaten track from thence to the Forks" (Burpee 1908: 447).

According to stories recorded by Goddard (1917), the Cree were a feared enemy but did not force the Beaver to flee from part of their territory. In fact stories indicate that both parties were able to kill most or all of an enemy's camp. Goddard (1917:216) mentions that when game failed the Beaver would go south and east of Peace River to fish at such lakes as Lesser Slave Lake that were also visited by the Cree. Gillespie (1981:167) thus argues that "some of the hostilities between these two people occurred when a lack of game and a need for alternative food resources directed groups of both people to the same area".

The idea that the relationship between the Beaver and Cree was not one of complete dominance by the later is further supported in Hudson's Bay Company journals where they describe the following event whereby the Cree's fear of the Beaver was exploited by the NorthWest Company to interfere with the HBC's success in trade: "The Squirrel and Family left the House today and has gone with the rest of the Indians towards Lac la Biche as the Nwt. have intimidated the Crees with an idea that the Beaver Indians are coming to war upon them at this Place" (H.B.C. Arch. B. 115/a/2, Apr. 16, 1819 in Baergen 1967:59). "All the Indians have left this Place...on their way to Lac la Biche and the Beaver River to fly from the Mountain and Beaver Indians who the Nwt. say are coming to war upon them" (H.B.C. Arch. B. 115/a/2, Apr. 22, 1819 in Baergen 1967:59). HBC records also record an account where a Lesser Slave Lake trading chief Tulibii, "a Soteaux by birth", was asked not to go to war with the Beaver (H.B.C. Arch., B. 115/e/1, Annual Report, 1820 in Baergen 1967:124) suggesting that hostilities with the Beaver were possibly not entirely restricted to the Cree.

One Swan River First Nation Elder tells a story from long ago when voyageurs first came to the Lesser Slave Lake area. They spent their first winter on Dog Island because it was easy to see enemies coming and there they survived on fish. They found *Pamastimow* and his family at Assineau (now Indian Reserve (I.R.) 150F). *Pamastimow* was a Beaver Indian and was the father of *Mistik* and grandfather of Felix Giroux (signatory to Treaty 8 for Swan River First Nation). The voyageurs married into the Beaver people at Assineau. When the Cree were pushing the Beaver people out of the area they left the Beaver people at Assineau alone because the voyageurs asked that they not be bothered (#15D).

The Beaver or Dene-za now live in northeastern British Columbia and represent such First Nations as: Doig, Blueberry, Halfway, and Prophet River. The First Nations in Alberta of Beaver heritage include Horse Lake, Beaver, and Tsuu T'ina (who moved south and adopted a plains lifestyle). The Slave or Slavey now live in far northwestern Alberta (Dene Tha' First Nation) and the Mackenzie River in the Northwest Territories.

Opposition to the idea that the Cree did not move into the Lesser Slave Lake area until the fur trade comes from Russell (1991). He argues that, although there is currently a belief among historians that the Cree invaded the west after 1690 because of the fur trade, this perspective is a result of the perpetuation of a single comment made by Alexander Mackenzie in 1801. The best evidence suggesting a much longer timeline of Cree occupation of the west comes from Anthony Henday who, during his journey to Alberta, documented the Cree as being well-established between the Edmonton and Red Deer area in 1754-1755. Russell argues that by the mid 1700s there were six main Cree groups living in the western parklands, plains, and boreal forest including the: Susuhana, Sturgeon, Pegoamaw, Keskachewan/Beaver, Athabaska, and Missinipi. These groups disappear from the historic record after the smallpox epidemic of 1781-1782 followed by subsequent population shifts (Russell 1991).

Based on the oral and written history reviewed, the most plausible scenario suggests that over the last 300 years the Lesser Slave Lake area contained Beaver and Cree people with ever changing borders and population levels. As a result of devastating epidemics (i.e., small pox) populations were dramatically reduced. This population decline was followed by an influx of fur traders and associated voyageurs and guides from the east and south, of French, First Nations, and Métis heritage. Remaining populations crippled by disease either migrated to join more stable communities or were absorbed by the new wave of people.

More Recent Inhabitants

The latter half of the 18th century saw a flood of people to the Lesser Slave Lake area. Based on interviews with Swan River First Nation Elders this influx of individuals inter

married with original Cree (and likely Beaver) inhabitants. This included Métis women from the Edmonton area and along the Klondike Trail including communities such as Lac St. Anne, Lac La Nonne, St. Albert, Egg Lake, Fort Assiniboine, and Barrhead[4]. Métis also came to the area from Duck Lake and elsewhere in Saskatchewan seeking escape from persecution associated with the Riel Rebellion including the direct descendents of Gabriel Dumont. In addition to Métis, women also came from the Cree communities of Wabasca, Grouard, and Fort Vermillion (TallCree) to marry into Swan River First Nation.

Some people came from further afield to settle in Swan River First Nation. One Elder explained how the Twins are Saulteaux from the west central states (#36B). They had to come north because they encountered Blackfoot people who stole their women. Edward Twin[5] is described as being Saulteaux and Cree and coming from southern Saskatchewan to the Swan River area as a child after the Riel Rebellion (#18D). Some Sioux also came to Swan River from North Dakota and Montana while moving north with Sitting Bull (#13D). One Elder describes how four Sawan brothers came from Manitoba to Swan River with one continuing on north. He felt that they likely came to the area as guides for the HBC (#25T). Others describe Samuel Sowan as Saulteaux and Sioux and having been driven north from the States (#20D). Another Elder (#42B) stated the following, "*we must be originally from States somewhere, I think maybe Montana, Black foots takes us over here...we chase the Slavie to* [Great Slave Lake]". In another interview an Elder described her dad (Julien Courtoreille) as an 'alternate Cree', he talked Cree but not the same (#37B). One can take this to suggest that the Cree spoken by this Elder's mother (Sophie Giroux) was a different dialect than that spoken by her father. This would make sense as, discussed later, some research suggests that the Courtoreilles came from the Michigan area and were Saulteux/Ojibwa speaking people.

[4] Much Swan River history is biased because of Bill C-31. Whereas Cree men who married Métis women maintained their Treaty Rights and thus often stayed on reserve, Cree women who married Métis men lost their rights, were not able to stay on the reserve and often became estranged and lost to Swan River history.

[5] Edward Twin's first wife was Beaver.

This oral history outlined above is corroborated by historical research done by TARR (1978) that describes how near the end of the 18th century and beginning of the 19th century a number of Aboriginal peoples came into the Lesser Slave Lake area including: Woods Cree and Métis, Ojibwa (Saulteaux), Ottawa and Iroquois peoples. Some Cree came west on their own accord whereas others came as employees of fur trade companies, serving as guides, hunters, and freighters. Historic accounts tell us that a small group of Ottawa people were settled near Lesser Slave Lake in the early 1790s but had moved away by 1808 and in 1799 a number of Ottawa and Ojibwa (Saulteaux) people, were sent to found a post at Lesser Slave Lake. There also exist a number of accounts of the Saulteaux in the Athabasca region including one describing an 1891 winter visit to Lesser Slave Lake of a band of 20 Saulteaux families under the leadership of Kiandiwais. There also were descriptions of Iroquois people from Jasper House in the Rocky Mountains who moved northward in the late 19th century. Finally, there were Métis people who moved into the Lesser Slave Lake region to escape the pressures of white settlement and law and to find hunting grounds where game was still abundant. The migration of 1885 included many Métis from the older settlements of Lac St. Anne, St. Albert, Lac La Biche as well as Saskatchewan (TARR 1978:3-5).

According to Hudson's Bay Company records some Cree had been enticed to the Lesser Slave Lake by the 'Northwesters' from Green Lake and the Saskatchewan plains and these Cree had come to dominate the area surrounding the lake for more than half a century (H.B.C. Arch. B. 115/e/1, Annual Report, 1830 in Baergen 1967:132). "The language spoken by them is the same as over the Southern parts of the Country and in their manners and customs the same as the other Indians within the HBCo." (H.B.C. Arch. B.115/e/4, Annual Report, 1823 in Baergen 1976:133).

HBC records also describe nations other than the Cree in the area in 1819 including the Beaver, Iroquois, Coutensis, Courtes Oreilles, and Saulteaux (H.B.C. Arch. B. 115/e/1, Annual Report, 1820 in Baergen 1967:134). Names that appear as "Courtereilles" in the journals are said to be the remnants of a band that had come to Lesser Slave Lake from as far away as Michilimakinac (an Ojibwa community in present day Michigan) in about 1792

"when the prospects of great beaver hunts allured them from their native country" (Coues 1897). The greater part of the band had by 1808 returned to the Dead River area near the Red River district where they took up the tending of corn and potatoes (Coues 1897).

HBC records also describe freeman of Iroquois, Courtereilles, and Nipesangs, "Many of them are in the habit of passing whole winters along the Lakes where fish can be caught and as long as they have anything to eat, trouble themselves but little about paying their debts" (H.B.C. Arch. B. 115/e/4, Annual Report, 1823 in Baergen 1967: 141).

Mair describes the original "lakers" (not the 'half-breed' newcomers from Manitoba or elsewhere) as bearing the following families: Nooskeyah, Gladu, Cowitoreille, and Calahaisen. "Collateral branches of these families constituted the main portion of the native population" (1908:72). Today dominant Swan River First Nation family names include the following: Courtoreille, Chalifoux, Sowan/Sound, Twin, and Giroux.

Traditional Resources

The following section discusses some of the traditional resources utilized by Swan River First Nation.

Traditionally Used Wildlife and Fish

Swan River First Nation Elders discussed the importance of big game to their livelihood including the significance of moose, describing all of the parts consumed including the nose, tongue, liver, kidney, heart, and stomach.

"Right now I'd say the number one thing would be moose... We used to use everything. Even to this day if you get a moose there's a moose tongue, there's a moose nose and there's the liver and stuff like that. People eat that yet you know so" (#13D).

"Not only the meat, we used to eat the liver and kidney and heart and the moose tongue and the moose nose. There was very little waste in those days. I'm telling you, when my Dad used to skin a moose there was hardly anything left behind" (#2D).

"He always kept the heart...and moose nose was always a delicacy...They used to save it you know a lot of times for special occasions. Like they do now yet for feasts. When they have feasts and special ceremonies they use moose nose" (#11D).

"We wouldn't eat if it wasn't for traditional food...Oh gee we had a lot of rabbits and ducks for sure. Then we had rats and then there's moose meat of course my favourite and then there were all kinds of parts of the moose we ate...Now nobody digs away inside the moose they don't want to dig right in there...to get those parts out. I never get to eat that anymore and I love those" (#1D).

Swan River First Nation Elders also discussed the importance of furbearers, smaller game, waterfowl, and fish to their diet. They explained how more than just the meat of these animals was consumed. For example, in rabbits the neck, brain, kidneys, and heart were eaten, in ducks the guts, gizzard, and brains were consumed and in fish the stomach and other 'guts' were eaten.

"But a long time ago we used to eat beaver, rat because sometimes it would be hard to kill a deer or moose you know. Then there's the partridge and in the fall of course there's ducks, geese" (#13D).

"He'd eat squirrels from the trapline. If he had nothing else he'd boil squirrels" (#5D).

"I also owned a little twenty-two. I used to go and shoot the partridge and bring them home for Mom. She'd call them [Cree phrase]. *Old lady food"* (#4D).

"Mom used to use the [duck] *eggs to make cakes"* (#4D).

"We used to eat a lot of fish, a lot of fish. We used to dry that fish. I mean smoke the fish like the dry meat. But you cut it a certain way. It was mostly like whitefish that they did that to" (#19D).

"Alot of people ate alot of fish. People lived to be old in them days" (#17D).

One Elder described how mudhen eggs were harvested by the women and children in three pound lard buckets, two buckets at a time. The women would make cakes with the mudhen eggs and also shared the eggs with their neighbours. The Cree name for where the eggs are collected is *sak-ta-wasik* ('it is narrow') and refers to where the mudhens (*cha-geek*) lay their eggs (*wa-wa*) in the bulrushes (#38B).

Traditionally Used Berries

"Sta ho ski so wim en ah [trailing raspberry or eyeberry]. *Oh, there was a hunter, years and years ago, got lost. And where he was walking he seen those kind of berries. And he went around looking for that patch where he had seen those berries. And if he finds that he'll find his way home. So he found it and found his way home. That's why they call it sta ho ski so wim en ah. Cause his eyes, he seen those with his eyes... Well that's the way ah, part of it I don't remember. But my grandfather, well my Mom's uncle, he used to tell us about that. He knew that guy that got lost. It was somewheres around Swan Hills somewheres"* (#16D).

Elders recalled eating a variety of berries that were preserved by either canning or drying. They also described eating dandelions, nettles, bulrushes, and wild potatoes as vegetables, making syrup from birch sap and jelly from rose hips.

"The most important one to keep for the winter would be saskatoons. Because they dry those and they keep well for the longest time" (#14D).

"And when we'd bring the berries home we would take a canvas and put all the berries on there and dry them in the sun. Then you'd flip them over. Same as we do our herbs now eh. And then they dry and then you put them in sacks or cheese cloth or something like that. Little bags eh? They would be preserved for a long time. And if you wanted to use them you just boil them and they're just as fresh as when you picked them... Chokecherries was another thing we used to crush and that was our fibre... And then you put it in the frying pan in lard and you fry that and you eat it" (#8D).

"Nettles, my Mom used to cook them up and we'd eat them like spinach. And dandelion leaves, we used to cook them up, cook them up for spinach" (#17D).

'Dad would get sap from birch trees near the slough, he would hang a 3 lb lard pail, it dripped slowly but by morning there would be some in the can, boil it for a long time, then dip bannock in it' (#45S).

One Elder described that edible bulrushes are those growing in the water and not on dry land. You eat the white part at the bottom with meat or on your meal. The Cree name for this plant is *ka-mistasin-skak* and translates as 'big rocks' (#38B).

Traditional Medicine

Some of the most popular medicinal plants were described by Swan River First Nation Elders as follows: rat root, mint tea, and Labrador (muskeg) tea. Other medicines mentioned included pitcher plant/frog pants, devil's club, yarrow, bearberry, rose hips, birch bark, poplar cambium, balsam poplar buds, mountain ash, and fungus. Important medicines derived from animals include bear gall, bear grease, and skunk oil. This list is in no way exhaustive and includes just a portion of some of the more commonly used medicines.

"Because you know that rat root is good for a lot of things. And then there is other stuff too. Everyone is different but most of the time if you say hey you got any rat root. Most of the time people will have it around. The rat root is very popular and it is good for all kinds of ailments, aches and pains and all that. Then there is that, what do you call that, that muskeg tea. And I guess Laboom, that's what do you call that mint tea. They do that, they use that" (#13D).

"Mint, That's the most going thing people use. They used to use that all the time. They put that in their tea and for colds and fever" (#14D).

"We always had rat root" (#8D). *"Rat root was always there"* (#1D).

"What people take vitamins for. You get that off a tree. Certain poplar tree. While we were picking berries out there my Mom would have a knife, kind of like a butcher knife. And you cut the tree. And then you take a knife or a spoon. I remember using a spoon one time and you just go like this and lift it up on the tree and then you get all this nice mmm, sweet tasting stuff. It's not sap. I don't know what it is. But it is nourishing. My mom knew it" (#8D).

"And also the sap from the birch, which was used for the first drink, the first bunch that we get from the trees. That was used for medicine to drink and then the other was made into the birch syrup" (#4D).

"[balsam poplar buds] *little sticky things that fall off. And those will take infection out really good"* (#1D).

"And then there is a fungus too that you boil and then that juice when you have a sore ear, you put a little bit in there" (#7D).

"Oh the skunk scent bag. You dry that and it comes into a powder. And that's what you use, just the tip of your knife, just a little, you put into your tea and very bitter" (#4D).

Traditional Industrial Resources

Swan River First Nation Elders described the many uses of the non-meat portions of moose for industrial purposes. These included the processed and smoked hides used to make moccasins and clothing. Hide processing also involved the use of the moose brain in softening and the leg bone of the moose as a tool for fleshing the moose hide. Moose hair was used in moose hair tufting and the fat was combined with wood ashes to make soap.

Elders described the various uses of wood for smoking hides, making dry meat, cooking, heat, and construction. Most Elders discussed the use of diamond willow or poplar to make dry meat but alder and birch were also mentioned. It was described how using green poplar will make dry meat taste bitter but dry poplar is ok to use. Jack pine (even when dry) cannot be used as '*the pitch never dries up and the taste is always there*' (#14D). Spruce is never used to make dry meat but dry spruce wood is utilized to smoke hides.

Spruce, jack pine, and birch are described as good fuel sources for heat, as lasting a long time, but as leaving soot in stove pipes. Dry birch is said to leave less soot in stove pipes. Although poplar wood will not stick to pipes it produces a lot of ash. Tamarack gives tremendous heat and lasts a long time but damages airtight stoves. Spruce throws sparks where balsam poplar does not.

Spruce wood is used to make cabins and birch was used in construction of items such as toboggans. Spruce boughs were used to fill in tipi walls between poles.

"When you are camping out and you make your fire, and you have nothing else but to sleep beside your fire, that's what they use, black poplar...It doesn't throw sparks. That's why they use that. And it lasts a long time. In the morning it is still there. The worst one to throw sparks is spruce. That's why they use that black poplar" (#14D).

"used to use it [birch] *years ago for overnight fires, it would last a long time"* (#2D). *"It throws a lot of heat but there's a lot of ashes in poplar"* (#6D).

"Birch if you want to make a sleigh. If you make runners, that's the wood to use. Most of them use birch. Birch you can do things with it like you can bend it. Dry it like that and it will stay that way. That's real hard wood" (#14D).

"A dry poplar with no bark on it [for dry meat]*...the meat tastes kind of bitter when you use the bark"* (#19D). *"Diamond willow was the best* [for dry meat]. *Some people use a little bit of alder"* (#17D).

"Hides. Ya. It's dried up spruce. You know how spruce can even turn color, just red and brittle, it's just soft...I think it gave it a better color I guess you could say and it didn't flame up" (#2D) .

Other Resources

In the recent past, cash was obtained through selling fur, blueberries and cranberries, and moccasins as well as limited wage labour. There was such a reliance of traditional resources that few food supplies were bought from stores and were largely limited to: baking powder, flour, tea, sugar, salt, lard, and salt pork.

Traditional Land Use

This traditional land use section outlines the uses of the land for stopping places, summer gatherings, graveyards and spiritual sites, plant harvesting, camping, hunting, fishing, and trapping. In this section a number of historic Swan River First Nation members' names are mentioned, people who were central figures in the community at the time of Treaty signing. Thus, before discussing traditional land use locations, a brief overview will be provided of some of the key historic individuals whose names will be mentioned below.

Central Figures in Swan River First Nation History

Some of the main families in the Swan River area during the early days of Treaty include the following: Giroux, Sowan, Chalifoux, and Courtoreille. Felix Giroux was the first headman of Swan River First Nation. His daughter, Therese Giroux, married Samuel Sowan and had twelve children. Magloire Giroux (Mistahe) was Felix Giroux's brother. Magloire Giroux married Genevieve Chalifoux and had seven children including Alexander Davis Giroux (1870), Benjiman Giroux (1873), and Michel Magloire Giroux (1876). Jean Chretian Chalifoux (Ayinisis) married Nancy Papastesis and had five children. Michel

Courtoreille married Isabelle Cardinal and had Julien (Wahpah) Courtoreille (1854). Julien married Sophie Chalifoux, sister of Jean Chretian Chalifoux. After her death he later married Sophie Giroux (daughter of Magloire Giroux) and had a number of children including St. Germaine Courtoreille (1897) and Jennie Courtoreille (1918).

Stopping Places

Three different stopping places were run by Swan River First Nation members along the south shore of Lesser Slave Lake. These locations provided a number of services to freighters including feeding and stabling of horses as well as room and board. According to Kinuso (1979) the following areas were associated with the following individuals:

- Assineau: Felix Giroux, Samuel Sowan, Mitchell Giroux, and Benjiman Giroux
- Swan River Point: Jean Chretien Chalifoux, Marie Chalifoux, and Alexander Giroux
- Wahpah Point: Julien Courtoreille

Assineau

Assineau or I.R. 150F was described as a '*stopping place for people who transported things*' (#13D) and home to Felix Giroux known as *Apisceeness* or 'small man' (#25T). Felix Giroux had lived at Assineau since at least 1901 and by 1912 he and Samuel Sowan were keeping winter stopping places there, with permanent houses and stables for both boat and trail freighters. Others who were living at Assineau at one time or another included Magloire Giroux, Benjaman Giroux, and Mitchell Giroux. However, records state that by 1922 all residents had died or had re-located to the main reserve (TARR 1978:28).

A number of Swan River First Nation Elders recall Felix Giroux and his stopping place at Assineau River:

"He [Felix Giroux] *always lived there* [Assineau]. *During the time the railroad was being built and freight coming in he had a stopping place which was where you load and unload freight. Ever since I remember he's always been there...Felix Giroux and Samuel Sound including my father* [Michel Giroux] *and Benjamin Giroux...Alexan Giroux ... These five people were all elders who selected the reserve site...They were the only elders at the time. Felix Giroux had selected the elders to assist him in selecting land"* (#24T).

"He was known to us as chief (ups chi nees). His English name was Felix Giroux. He owned half section of land over there. He lived over there, Assineau. He was given that land...His son in law lived there also...Samuel Sound...They [Samuel Sound] *were only there during the time the railroad was being built. After the completion of the railroad they all moved to here* [Kinuso]*"* (#29T).

"It [Assineau River] *was specifically for him* [Felix Giroux] *since he always lived there. It was surveyed for him...He asked for it...there used to be other families that lived there but they all eventually relocated to this place...One was* [Samuel] *Sowan...Another person was Benjamin Giroux...There was also Mitchell Giroux. They all moved back"* (#28T).

"Up-chi-nese. Felix Giroux. The land was surveyed for him. He always had a little store and a stopping place. The animals were fed at the stopping place. He was given that piece of land...160 acres. It's located to the lake...There were many others living there. We used to live there. During the 1930s at the time of the depression. A Métis family by the name of L'Hirondelle also lived there. The man's first name was Johhny L'Hirondelle . They were best of friends with the old man- Felix and he had no objections for them living on an Indian reserve" (#25T).

"I'm not to certain but I can remember a long time ago when the freight train made its first run. We also made use of horses during winter transporting goods. They had stopping places for feeding animals and unloading people" (#25T).

Swan River Point

In addition to Assineau, there was also a stopping place at Swan River Point. Elders recall this stopping place as described in the quotes below.

"My grandfather [Alexander Davis Giroux] *and my grandmother* [Catherine Chalifoux] *they used to run and stopping place by Swan River Point they used to hike from Edmonton to Grouard aye, Grouard was almost a city one time, and that's where they used to come through use the lake go on the Saskatchewan River than Slave River and then to Slave Lake, and they made lot of money I guess, maybe there's 10, 20 teams of horses, they had a big huge barn with a double door, hay, you know they use, my mother used to tell me she use to use scissors to cut hay everything aye, they had to put up a lot of hay, but it was paying I guess"* (#42B).

"Then one time years ago when there was no roads in, they used to have a half way house at the Narrows...People would stop and put their boats in at the river...There was a log shack and there was an upstairs in it where they kept the people that stayed over...And they grew wild hay there" (#17D).

Wahpah Point

The third stopping place was at Wahpah Point as is described in the following quotes.

"They [Julien Courtoreille and his son St. Germaine] *had a stopping place there. They used to put up hay and everything. So for these people that were hauling stuff they would stable the horses and everything like that" (#14B). "Boathouses used to stop there. And they used to feed the people"* (#4D). *'Wahpah used to be a staging area where the barge stopped'* (#47S).

Summer Gatherings

Continuing until today, many Swan River First Nation members make the annual pilgrimage to pray at Lac St. Anne. This large pilgrimage draws First Nations and Métis peoples from across Alberta, Saskatchewan, the Northwest Territories and beyond. The quotes below outline Elders' experiences on route to Lac St. Anne.

"We used to cross that ferry in Athabasca and we'd go there on horse and wagon you know, all the way to Lac St. Anne....But then we'd leave here about a month early. We'd go hunt and everything else. Then we'd go through Alcomdale then we'd go into Alexander because my parents had a lot of relatives and old friends.... Then after we'd visit Alexander we'd go to Lac St. Anne. Then camp there. Then go pray, we'd have to go pray" (#13D).

"We would head to Lac St. Anne. And they used to take oh any where's from three to four weeks, three and a half weeks. But what would happen, on the way my Dad would hunt on the way. He would kill moose and my Mom would... make dry meat" (#2D).

"Ya we used to snare rabbits a long time ago. Ya whatever we could kill. You know sometimes if we see something you know when we were traveling on this old, you know the wagon train or something you know we'd shoot it. Or sometimes we'd be going there and sometimes you know these hunters would just go. Either ahead or back or someplace. You know because they knew the trail and where we were. You know they knew the woods and the forests you know. Sometimes we wouldn't see them for a day or two or maybe something like that. And when they do come they usually have something for us" (#2D).

Graveyards and Spiritual Sites

North of Town

Between 1917 and 1921 a small cemetery site near the Swan River was used by the Catholic Mission at Kinuso but was abandoned in favour of a site nearer the church. No further care was taken of the graves at the old site and Sam Kool (a white farmer) soon

gained possession of land. In 1933 the band complained that Kool was ploughing up the unfenced cemetery. Kool refused to sell the land and, since older band members refused to allow the remains to be moved, nothing more was done and the cemetery has now completely disappeared (TARR 1978:58). Below are a number of quotes from Swan River First Nation members who remember this cemetery:

"There is a piece of land where people [treaty] used to bury their bodies now it is a whiteman's land since 1918. North east and south east quarters of the reserve, there are both white land" (#26T).

"About half the graves were ploughed over...the burial ground had always been there" (#27T).

"There was one [a cemetery] *set aside years ago. We have a cemetery site not too far away from here"* (#28T).

"There were many people that were buried there during the flu epidemic...The farmer who occupied the other quarter section where the Indian graves were situated have ploughed the land over. You can't see them now" (#25T).

"During the flu epidemic, another cemetery site was set aside not too far from here...They took land anywhere they wished for cemetery sites" (#24T).

"We came to the funeral that time, Jenny's grandmother. I was very young. I must have been about twelve or thirteen years old. We came by wagon and camped at Driftpile and then from Driftpile we got here. There was a lot of graves that time. Now you can't find anything. Because you know these white people plough all over. There was crosses and signs and some of them even had you know like little fences. But they are all gone" (#38B).

'That graveyard contains mom's parents and some of the brothers and sisters' (#51S).

Swan River First Nation Elders also described a number of graves at Wahpah Point, the north side of the 'Narrows', and at Assineau.

<u>Wahpah Point</u>

"My great-grandfather and his family are buried there [Wahpah]... *His name was Michelle Courtoreille"* (#14D).

North Shore of the Narrows

A Swan River First Nation Elder (#45S) described how her grandfather, Julian 'Wahpah' Courtoreille, lived on the north side of the 'Narrows' and how her father, St. Germaine Courtoreille, had lived there until he was twelve. Their neighbour, William Boy Courtoreille, was described as having said that there were thirteen graves on the north side of the 'Narrows' but they may have been disturbed by road grating.

"There's another cemetery site north of Swan River [Narrows]*"* (#24T).

"Graves across the lake...Well there was this flu epidemic that went around and people were just dying, dying eh. There's graves you know, probably all over the place. My family didn't have any of that flu. They didn't die of it. They survived" (#9D).

"Years ago they used to, people used to live over there...They were from Faust, Courtoreilles. They had wild horses over there...They used to come in the winter, they used to come go visit Gordon and them, their Dad and Mom. They used to go visit them" (#17D).

Assineau

"Many people stayed there [Assineau] *permanently. There were many people that lived at Assineau and many of them deceased there. They eventually had a cemetery site"* (#24T).

'There are graves at Assineau just before the train bridge on the way to the lake' (#47S).

Other Areas

Elders also described spiritual sites of importance to Swan River First Nation. One Elder (#44S) described how on the top of the hill to your left at 'Mile 3' in the Swan Hills is a location where Swan River First Nation peoples used to have sweats. One Elder described how her mother's father was a medicine man. *'Her mom hid his bundle in a certain poplar tree at Poplar Point* [near the north shore of narrows] *so that no one could get a hold of it and use it for bad medicine'* (#36B).

Plant Harvesting

Swan River First Nation Elders described harvesting plants in the 'sand hills', the north shore of the narrows, in the Swan Hills, as well as other areas.

Sand Hills

Elders describe trips to the 'sand hills' of three to four families with a team of horses and a wagon to pick predominantly blueberries but also low bush cranberries (lingonberries). The location is described as follows: '*1.5 miles south at Swan Hills turnoff and then east into sand ridges'* (#21D), *'just past Eula Creek at the Sand Hills'* (#47S), *'1-2 miles east of the highway on Adams' land, called Sand Hills, Adams let us go and pick berries'* (#44S). This was described as the most important traditional use location for harvesting blueberries. It should be noted that no such habitat exists on either I.R. 150E or 150F that supports blueberries or low bush cranberries. Thus Swan River First Nation members are forced to leave the reserve to harvest these very important berry species. Selected Elders quotes below describe these berry picking trips:

"I remember very well the blueberry picking...We used to call it Sand Hills. We used to go to Swan Hills road. It was a gravel road. At that time we used to go with a team of horses and a wagon. And we'd stay there all day, the whole family and other families...We had the low bush cranberries too...We'd make tea out there. Our lunch like bannock and tea" (#8D).

"There used to be a blueberry patch...but now it is a farmer's...We'd go for one day. Probably leave early in the morning in the wagon, like it was a few like maybe a couple families...And we'd pack a big lunch" (#9D).

"There'd be a few families and we'd take the horse teams and go camp, to the blueberry patch. We'd pick there maybe for the weekend...We used to go picking and they would set up the tents, take our food and camp out there. Kids would play...Sandy Hills. Out in the hills" (#11D).

"But we used to go pick berries just out here, just top the Swan Hills road used to be you call Sand Hills. Lots of people used to go there and pick blueberries and low bush cranberries" (#2D).

North Shore of the Narrows

One of the other areas suitable for blueberries and adjacent to I.R. 150E was the north shore of the 'narrows' by Narrows creek (#6D, #41B, #44S). One Elder described how her dad would borrow a boat and her family would travel to the north shore of the narrows and

spend the day there picking blueberries and low bush cranberries as well as Labrador tea (#21D). The selected Elders quotes below illustrate these trips:

"Mom would go in the fall across the lake with some other people, go pick blueberries...We used to go right across. Right across there. Go pick berries and stay there all day" (#12D).

"Long time ago we used to go and take a tent across the lake. And we'd pick blueberries...From Wahpah Point we used to go across" (#10D).

Swan Hills

The Swan Hills area was an important traditional harvesting area for blueberries, huckleberries (tall bilberry), and low bush cranberries as well as Labrador tea (#19D, #16D, #22D, #23D, #46S, #6D, #48S, #21D, #41B).

"My Mom and them used to go up there to pick blueberries. I'm not sure what areas they went. I remember as a kid, we went up, one of my Dad's friends had a little Ford, them real old Fords. And we all piled in there and we went to Swan Hills somewhere to pick blueberries. I can't remember where. We come home with lots of them. Pails and pails of them" (#17D).

"Well we got huckleberries over there on House Mountain" (#9D).

Other Areas

A number of Elders recall harvesting blueberries in the 'jackpines' at 'Old Town' in Slave Lake (#48S, #46S). One Elder (#48S) remembers picking blueberries past the 'jackpines' in Slave Lake while the men hunted, they went by wagon and camped overnight. Another Elder described how, "*We use to go picking in Slave Lake...In the summer we would camp at Sawridge at my Grandfather's brother's place*" (#5D). One Elder described picking '*blueberries east of Slave Lake by Mitsue area*' (#50S). Another Elder explained how she harvests '*saskatoons at the beach on the old road in Slave Lake*' (#46S).

Elders also described picking blueberries and low bush cranberries in Joussard (#48S, #6D). "*And Joussard we used to camp too. Take a tent and tent out there for two or three days*" (#10D). One Elder described picking '*saskatoons by Grouard on the highway going to Whitefish*' (#46S). Another Elder described helping her grandfather '*collect birch sap for*

syrup near the bridge at Grouard'. She also described how '*there used to be lots of blueberries where the Grouard Mission was and near Grouard on the way to Salt Prairie*' (#50S).

The following areas were also described as plant harvesting areas: Pritchuk Hill for strawberries (#47S) and raspberries (#41B), south of Canyon for raspberries (#47S) and blueberries (#50S), Faust for mint (#50S), Marten Hills for blueberries (#50S), and Eula Creek for raspberries (#47S). Elders also described harvesting along the railway tracks between Kinuso and Assineau for saskatoons (#20D, #48S), '*we camped overnight and it was a real adventure*' (#48S).

Camping

Elders describe camping at Narrows Creek (#6D) and at Pat Courtoreille's (Island) Creek near Mile 3 Creek (#44S). The selected Elders quotes below discuss camping while harvesting traditional resources:

'In the summer a number of families camped at Eula creek, someone would kill a moose and they would pick berries' (#37B).

"In the summer we'd go camp in the bush and pick berries and pick medicines, hunt. The area ranged from Swan River to Swan Hills area" (#5D).

Hunting

The core area for harvesting moose, elk, and deer by Swan River First Nation members was the Swan Hills as exemplified through the following quotes:

"Swan Hills, all Swan Hills district. That's where we used to hunt" (#16D).

"Well we were limited in those days because you had to travel by team. You can't go too far. But that's normally the area we used to go to. There's Inverness, Moose Horn River, probably the Deer Mountain to the House Mountain area" (#2D).

"Well hunting was mostly done south of Swan River Nation. Like up in either House Mountain or Deer Mountain, Grizzly Mountain and there is another river up there" (#5D).

Swan River First Nation Elders harvest throughout Treaty 8 territory for big game. The following areas were mentioned by Swan River First Nation Elders and represent some of their hunting areas for moose, elk, and deer:

- Snipe Lake
- Fox Creek
- Virginia Hills
- Swan Hills
- House Mountain
- Deer Mountain
- Windy Lake
- south of Canyon Creek
- Grizzly Ridge
- Freeman River
- Smith
- Valleyview
- Inverness
- Moosehorn
- Mile 8
- High Prairie
- old Jerry Creek road
- Marten Hills
- Red Earth
- Whitecourt
- Fort Assiniboine
- south of Faust
- Pritchuk Hill

Like the Elders, young Swan River First Nation hunters harvest throughout Treaty 8 territory and beyond for moose, elk, and deer. Some of their hunting areas include the following areas:

- Fox Creek
- Deer Mountain
- Virginia Hills
- House Mountain
- Swan Hills
- Judy Creek
- Edson
- Grizzly Ridge
- south of Faust
- Little Smoky
- Frost Hills
- Snipe Lake
- Marten Hills
- South Mitsue
- Fawcett
- Sunset House Road
- Robb
- Winagami
- Berland River
- Brazeau Dam
- North of Kinuso
- south of Driftpile
- Swan Hills
- behind Grouard
- almost to Red Earth
- Whitecourt
- Wabasca
- Little Buffalo
- Seal Lake
- Atikimeg Lake
- Lodgepole
- Carrot Creek
- No Jack
- Flatbush
- Grand Prairie
- Wapiti River
- Windfall
- Blueridge
- Forestry Trunk Road
- Mooney Creek
- Smith
- Smoky River

Fishing

Swan River First Nation members harvest fish year round from all of the lakes, rivers, and creeks in their traditional territory. Elders described fishing at Island Creek for grayling (#47S) and suckers that spawn in late spring that can be scooped out (#44S). One land user

described going snare fishing for whitefish before freeze up on a creek near Atikimeg (#52D).

Elders also described fishing for grayling at the Inverness (#47S, #18D), Swan (#47S), and Moosehorn rivers (#18D). Younger Swan River First Nation members described some of the fishing areas they use as follows: Strawberry Creek, Peagsus Carson, Swan River, Edith Lake, Stoney Creek, Inverness River, and Lesser Slave Lake.

Trapping

Most Swan River First Nation trappers trapped north of the 'narrows' or in the Swan Hills area. The selected quotes below illustrate where trapping occurred.

"My Dad used to say the easiest thing to do was to trap across there too. He used to go right up to Whitefish Lake. You take it now what are you gonna call it...Atikimeg? The old people who used to trap all around Swan Hills area...They all had, everybody had dogs, and packed their dog, make a harness for them, pack them. Away you go. Don't see them for three months" (#17D).

"I trapped for about 2 years I think...used to go across the lake there [Narrows]*...cause there was no work in the winter"* (#42B).

"That was their livelihood they'd trap, my dad used to say they'd [Julian and Michelle] *trap across the lake...you could trap anywhere. There was no really specific place you could trap...wherever you trap you can"* (#14D).

"[Dad and Benjamin Giroux] *used to trap in winter...He used to trap around Slave Lake here somewhere he had a trapline...Saulteaux ya...But I remember he would be gone for a long time...I'd say weeks. And dad always had horses. He had a team of horses"* (#11D).

Another Elder recalled how her grandpa trapped at the Salteaux River. *"They would go there by wagon and stay for a couple of months"* (#34T).

"I think around the Moose Horn. Actually ah, he [Gene Davis] *didn't own it, somebody else owned it but let him trap in there a couple of winters. That's around House Mountain area. Or just before you get there, House Mountain, in that area there. Actually he went after squirrels mostly. You made good money in squirrels. He'd catch the odd otter or mink or something. But he focused on squirrels because there was lots of them"* (#17D).

"It [August's trapline] *would be toward Swan Hills. Jerry Creek. It would be in this Jerry Creek/Inverness River area. Right on this side of the road. Right ah kind of right along the Swan River...He had a cabin there...*[regarding finding the location of cabin]*...It'll be hard, it's on the old road and the trees have probably all grown in there...He had a partner that he used to do a lot of trapping with. It was his neighbour Bernard Potskin." (#2D) 'At Mile 9 on the old road is where Bernard Potskin had his cabin'* (#44S).

"My grandfather [Edward Twin] *trapped all over. Right up to Wabasca River. Down the Wabasca River to Wabasca, Bigstone. He would leave two or three months at a time he would go trapping. Just him and a couple pack dogs. He also had a trap line on Mile 8. I can't remember the river. Inverness River? There is a river that comes from the west and goes into Swan River at Mile 8...He had a trap line there and my uncle* [Victor] *had a trap line, my uncles adjoining his"* (#5D).

One Elder described how his dad's trapline was *'where the Inverness and the Swan River meet (Mile 8), on the House Mt. Side'* (#44S). Another Elder also stated that his *'dad had a trapline up in the hills'* (#49S).

"*Lots of times I stayed out there...I used to have a trapline in the hills*", '*I trapped for squirrel, beaver, mink, rats, otter, lynx, coyote and wolves in the winter*' (#14D).

Another Elder described how his *'dad trapped every winter (November to March) in the Swan Hills, had a cabin on his line, trapped for squirrels, rats, beavers'* (#51S).

Reserves

Swan River First Nation reserves 150E and 150F are both important traditional use areas. This is partly because these reserves are the only areas in Swan River First Nation traditional territory that members do not experience outside competition in and have complete control over. These areas are also highly accessible to Swan River First Nation members. Where the previous section discussed traditional land use areas according to site type or activity (e.g., plant harvesting, camping, hunting, fishing, and trapping) the following section outlines traditional land use areas according to location (i.e., Reserve 150F and 105E). This information was presented in this format because the reserves are intensive multi-use areas.

Reserve 150F

Duffel Sowan (son of Samuel Sowan) lived at Assineau by the river until 1943. After moving to the Canyon Creek area he continued to use the Assineau area for harvesting plants, camping, hunting, and fishing (#20D). Another Elder described how her dad collected medicine at Assineau, including rat root and pitcher plant/frog pants, and harvested beaver (#48S).

Reserve 150E

Swan River

Beaver (#48S, #18D, #8D, #41B) were harvested from the Swan River and it was fished for grayling (#18D). A number of berries including chokecherries, strawberries, raspberries, and sasaktoons were collected there (#18D, #41B) and rabbits were snared (#5D). *"He* [Edward Twin] *would snare rabbits and stuff and that would be along the Swan River"* (#5D).

Hay Meadows

Swan River First Nation Elders remember spending time towards the lake at and between Wahpah and Swan River Point in summer. One Elder recalls going by a team of horses to the lakeshore and collecting duck eggs in a pail in the high weeds (#45S). They also hayed in this area by the lake and would camp out while haying (#45S). They trapped muskrats in this same region in winter and shot them in spring (#45S). Another Elder trapped mostly muskrat and coyotes at Wahpah and sold the fur in either Kinuso or Grouard (#14D).

One Elder described how her family trapped beaver and muskrat and snared rabbits at her family's hay meadows at the lake. The family would camp there and set nets for fish (mostly whitefish) and hunt geese in the area in the fall (#46S). "[For ducks] *I think he just used to go toward the lake on one of the ponds. He used to get geese too*" (#11D).

One Elder remembers making hay at his dad's hay meadow and recalls how '*it was a big get together*' (#51S). Both mint and rat root were collected near sloughs at the hay

meadows (#51S, #18D, #50S, #47S) and today youth use Swan River Point for hunting (#41B).

Indian Beach/Creeland Park

The sandy beach and surrounding area of Creeland Park was used to collect a number of plants including: saskatoons (#41B and #12D), raspberries (#12D), rat root (#47S, #49S, #37B, #21D) and mint (#47S, #37B, #21D). Swan River First Nation members continue to camp, fish, and collect plants in this area.

Townsite of Kinuso

When Swan River First Nation Elders were growing up the townsite of Kinuso was described as having had a lot more 'bush' and the sloughs were fuller of water than today. In and around town Elders used to collect a number of different berries including raspberries, gooseberries, saskatoons, strawberries, chokecherries, and high bush cranberries (#8D, #11D). One Elder remembers her dad collecting sap from birch trees and mint at the slough near where they lived (#8D). Another Elder stated, "*I remember mint, they used to drink that. It used to grow close to where we lived on the reserve. We used to live close to a slough and it used to grow around there and we used to pick it*" (#11D). People also used to snare rabbits and squirrels and harvest ducks at the sloughs near their homes in town (#45S). "*He* [John Felix] *snared rabbits around their house in town*" (#11D).

North of Town

North of town a number of berries were collected including: high bush cranberries, saskatoons (#46S, #23D, #51S), chokecherries (#19D), raspberries and strawberries (#50S, #47S, #23D, #51S). The medicinal plant yarrow was also collected in this area (#46) as was sap from groves of birch trees (#51S). North of town people harvested rabbits, chickens, moose, deer, ducks (#18D and #50S) as well as weasel and squirrels (#18D).

The following table outlines some traditional place names in the Cree language (Indigenous toponyms) for locations in the Lesser Slave Lake area.

Table 5.4 Place Names

English Name	Cree Name	Meaning
Sawridge	*Kiss se puk ka mak* (#24T) *Kiss si pik ka mak* (#29T) *Kiss si puk ka mak* (#28T) *Kissapikkamak* (#25T)	*"that means the end of the shore or shorage"*(#25T)
Driftpile	*Nim taw tak kow see pee* (#24T) *Nim taw tak kow Seepee* (#28T) *Tipahas ka neek or Kawetakkow seepe* (#25T)	
Sucker Creek	*See peseek or Na nay peyoo see pee* (#24T) *Na nay pey oo Seepeesis* (#28T) *Na nay pe see peesis* (#25T)	
Grouard	*O chay na seek* (#24T)	
Swan River	*Wab so seepee* (#29T) *Wap so seepee* (#28T) *Wapso-see-pee* (#25T)	*"The swans landed at the river regularly eating sand. We still have swans there occasionally"* (#25T).
Lesser Slave Lake	*A yeah chi ne win kak ka kon* (#25T)	
House Mountain	*Kahassasakee* *Waskahikan waci* (#54D)	"The House Butte" (Mair 1908:78) "*House Mountain*" (#54D)
Deer Mountain	*Apsimoosis waci* (#54D)	*"Deer Mountain"* (#54D)
Moosehorn		*'because someone found a pair of locked antlers, two bulls had died fighting'* (#44S)
Island Creek		*"The one creek there that is called Island Creek right now, that one, when you translate it into the way they used to say that is Patrick's Creek. That's the way you would translate it. They named it after this old guy who used to live in Canyon Creek. His name was old Pat Courtoreille. Apparently that's where he used to stay all the time or camp all the time so they just named it after him and that was the way that Creek was identified"* (#2D).
Foley Creek		*"There used to be a logging, well forestry road we used to call it. That's all there was. Like the forestry had Foley Creek. The guy was named Foley, they named that Creek after him, he was a Forest Ranger at the*

		time. He used to have a station right there. That's as far as the road from here went there. From there it was just bush" (#17D).
Wahpah Point		*"a place where boats land"* (#15D)
Kinuso		*"We didn't have a chief at the time for this band* [Swan River First Nation]. *There was only one Chief who lived at Driftpile...Kinosayoo was his name...(Kinoseyoo means fish)...that is why this place is called Kinuso* [laughter]. *That is an incorrect pronunciation. He was called Kinosayoo, but now the town is called Kinuso. It is like someone is tall. It has a different meaning"* (#28T).

Lifeways

The following section discusses Swan River First Nation lifeways including their annual cycle, trapping, hunting big and small game, picking berries, preserving and processing berries, and making moose hides.

Annual Cycle

Life of the Cree people before Treaty 8 in the Lesser Slave Lake area was described as follows by the Elder Jean Marie Mustus:

> "Their main source of livelihood was from the bush or from the lakes. When they were in the bush they made tipi shelters of wood. They hunted and in the fall prepared [preserved] food, because there was no other place to go to: there was a Hudson's Bay store here but the supplies were limited. That is how they lived. They didn't have horses, but they used dogs...In the spring they took their furs to Edmonton; they travelled in a two-wheeled cart, later on, according to my grandfather. They travelled as far as Washington via the Saskatchewan River, then they would return with supplies on the boat. These supplies were to provide for many people. That is how the people of long ago made their living" (TARR 1978:6).

Elder Frank Twin recalls the life of Aboriginal people in the past, "The old days were the best. The Indians were still a free people. The Indians moved back and forth along the lakes in the winters. Small bunches moved through the valley hunting and trapping in the fall" (Kinuso 1979: 372-373).

"Well usually they would go set up camp in the summer or fall or spring where there would be some water, where it would be close to everything that was needed. You know whatever you need. You know. Where there would be wood too" (#13D).

"They used to live along the lakes and the rivers" (#12D).

"See in them days too like in the summer everybody used to go to the lake and just stay around the lake because of the fish. It was too cold to stay at the lake in the winter so they'd come where the trees are where the moose are in the winter" (#17D).

"I remember living by the lake in a tent...living on fish. Ducks and fish" (#9D).

'Dry meat, lard, and dried berries was our winter food' (#31T).

Trapping

Below, Swan River First Nation Elders discuss some of the traditional knowledge employed in trapping and how life was on the trapline.

"Trapping, normally they cut a hole in the ice. You can see the runs eh just like a little channel? Then you chop a hole in there and then you put a dry stick there normally. That's where you put your snares. In some cases your traps tied on to that dry stick. If you put a green stick in there they'll chew it up. So you've got to put a dry one in. They don't eat it. And they also in the spring when the waters running and the beaver dams, you know water goes over the beaver dams. They set traps there as well. You can tell where the go over the beaver dam is, there's a big trail there...Where they have their beaver houses, and they have tunnels that go under their beaver houses, they store their food in the water and it freezes that way. If everything freezes then they couldn't swim to get their food in the winter time" (#2D).

"Nic co nah [unknown berry]. *What do you call that in English? Those marten, those animals. If you find those berries, my Dad used to make a little sign, stick something there with a little whatever. And in the wintertime he would go and sit there and pretty soon that little marten would come there and brush the snow off and eat those and then he'd kill it. Because the fur was over a hundred dollars"* (#19D).

"We used to go you know my Dad's trap line. And these other people, these other hunters and all that we'd all go there. We'd go trapping beaver and squirrel all kinds you know. All the animals and all that. We'd just stay out there. That's when I was young. That's in Swan Hills" (#13D).

"Well years ago a lot of people had dogs, big dogs. That was their pack animal. My Dad used to own dogs when he went trapping. Instead of a horse, a horse you have to feed. Well the dog will eat your scraps" (#17D).

"He just stayed right out there. He had a cabin there. He'd go out there in the wintertime and go out there in the spring when he was trapping beaver... So he trapped everything from weasel and you know squirrels, and martens, mink. Everything that was out there, lynx, muskrat, beaver...You know sometime he would go out there for two or three months in the wintertime. And in the spring he would go there again for a month or until the season closed I guess...He had a partner that he used to do a lot of trapping with. It was his neighbour Bernard Potskin...my Dad did use some bait. He used other wild meat say for coyotes, or wolves or lynx" (#2D).

"But you know when my Dad used to go out on the trap line we used to, it's two days to get there with a team of horses eh, we'd camp on the way...I used to sleep under a spruce on ah, there used to be one big spruce there. A lot of people going out there used to camp there. Just like a big house eh? The branches would just branch right out and people used to just sleep under there. In the wintertime, January and February I have done that with him a few times...He'd go trapping some days and then other days he'd go hunting" (#2D).

"We used to get some moose meat from August...Every time he'd go hunting because he had a trapline over there...But my brothers used to go out with their uncle to the, out to the trapline. Because they used to stay there for days" (#12D).

Harvesting Big Game

Elders remembered fall as a busy time of year when hunting trips would last several weeks and were followed by drying meat and rendering fat. A large hole was dug in the ground where the fat was kept until they returned home. Pole racks were set up in multiple places and fires were kept smouldering at all times to dry the meat. The dried meat was then put into gunny sacks for transport home. What meat was not dried at the site was dried upon their return home. After a successful hunt, preparations were made to have a tea dance. Small parcels of pemmican, dried meat and rendered fat were prepared as tokens to be given to those travelling from far distances (Kinuso 1979:269).

Below are selected quotes from Swan River First Nation Elders regarding big game hunting.

"We used to go hunting. Like now [fall], *this time of year, we used to go out into the hills. There was about three or four families that would go at once. So four or five families would go hunting and they would have their meat, their dry meat. They would cure it and everything like that. Get ready for the winter eh?"* (#14D).

"They used to go out hunting, the hunting season, so we'd go hunting eh? We'd go out in the bush for so long until, so that's where they were, Mom and them whoever, my Dad and I guess whoever else that came along they worked on this moose eh. And then they made dry meat and that meat was dried up there. And when they come back we got our dry meat, our meat, and come home eh. In the meantime we had fun. It was just like a little holiday. But at least the dry meat was already done. Me, I make my dry meat right here...A long time ago, ya, that's what they did. They did everything up there. Now they get it, they bring the whole moose here, sometimes they skin it out there" (#19D).

"If someone got a moose...They'd stay out there in the bush for two or three days and do whatever they're gonna do. I remember as a child going from Driftpile and going up into Swan Hills and coming back with moose meat and dry meat...Now they'd bring it home and they'd do it at home. They have the vehicles to do so. Because then they worked with horses and wagons. They'd have all their bedding or whatever because they'd have to make a tent out there and live there until they got what they needed" (#10D).

"He'd go take his wagon and horses and he'd go toward Swan Hills...He'd probably go for maybe sometimes up to a week. But he always came home with meat. In those days there were no fridges to keep your meat. So we used to have a well where we lived eh. There was a well. So Dad would put those great big five gallon pails into the well as far as he could. Like he would put the meat in the pails and put them down in the well where it was cold, as much as he could. And then I always remember my, his Aunt, Mrs. Courtoreille, was his Aunt, she used to come and dry meat for us for my Dad. And then Mom and Dad used to can some. And the rest of it we used to go around and give it away to people who lived on the Reserve. He used to hunt moose, deer, rabbits, ducks" (#11D).

"The moose was part of our lives. Like old Bernard Potskin would all be out there in Swan River. They would go, we'd go pick berries, that would be in August blueberry picking. Then we would go to the sand hills up here. And my grandmother used to come too. She lived in Faust. And she used to come and we'd all camp up there like. But this was oh families galore. Then picking. Then the men would go and hunt. They'd have moose and deer. And we'd have a big feast out there you know. And bring home the dried meat" (#4D).

"My Dad and his partner, Old Bernard, when they'd kill a moose especially and they had, you know in those days you had to go two or three miles out in the bush and they had to pack it. They used to wrap their meat up in the hide and then pull it that way...They'd just wrap it up in there, kinda lace it up a little bit so it wouldn't fall out, you know what I mean? And then they would tie that rope in front and just put it around their chests or whatever and then they would pull it" (#2D).

"Years ago they had to go walking in. You know get their moose and pack it out of the bush...when dad went hunting he used to take his team of horses...a day or two and then back again" (#6D).

"With my grandparents we made dry meat. Sometimes she would make pemmican, or pick berries. She'd dry them. She'd make little cakes and dry them on the rocks. Put them away for the winter. But mostly with my grandparents, but my uncles of course shot the moose and brought it back and they'd share it with the family" (#5D).

"[They hunted in the Swan Hills for] *two or three days or until you got a moose and headed back...find a little creek and set up camp...Well, if we stayed a few days, like if we shot two or three moose we stay there and make dry meat. We had no refrigerators in them days so. Well if it's not too far we'd just wrap it up in the hide and bring it home. De-bone it right there. Leave the bones out there. Just bring the meat home wrapped up in the hide sort of thing ya know. It'd be lighter. My wife said her grandfather packed a whole moose home. He de-boned everything, wrapped it up put it over his shoulder and away you go"* (#17D).

"Sometimes we'd make it [dry meat], *if we stayed long enough we'd make it out there. But other times he'd bring it to my grandmother and she made it"* (#7D).

"In the summer time we used to go hunt moose in the moose lick at night when there's moonlight. We used to climb up in a tree and wait for the moose there" (#2D).

'When I was young I went on hunting trips with my dad to Assineau, we set up camp close to the creek and kept the fire going while dad walked to a nearby salt lick, he would shoot a moose and cut the meat up into pieces he could lift, he would use one horse with poles and a tarp to bring the meat to camp, he would wash it in the river and cook a snack for me and my brother, then he covered the wagon in leaves, put the meat on it and we went home' (#20D).

'We camped all long rivers mostly, fall and winter was best for moose but we hunt all year round, when we went hunting we went by team of horses and stayed out there for 1-2 weeks and camped by creeks and rivers, we had to camp because went by horse' (#14D).

"They tell me stories about how they used to hunt moose a long time ago aye...yeah, they used to dig a hole aye, dig a hole, used to go inside that hole, used to wait in that hole, used to call moose there, and that moose was right under him and...get him from the stomach, make him sick aye, and they track em right to wherever they goes south...I said well I was gonna run after it he said, no, no, stay here he said, you gotta give em time to lay down he said then he won't get up" (#40B).

"By hand, just throw it over your shoulder and away you go...I used to pack 2 hind quarters one on each shoulder...I know one guy here he used to pack a whole moose at once...put it there hand right over your shoulder and away you go...or pull it...yeah certain way you got to cut the meat though too" (#40B).

Harvesting Small Game

Small game such as rabbits and 'chickens' were very important food for every day survival and were often harvested by the elderly, women, and children. Muskrat, weasels and squirrels were often trapped or shot and the skins sold for money. Waterfowl were harvested seasonally and duck eggs collected in spring.

"My brother and I used to go with my Dad's mother...she had her little path where she goes. She had her twenty-two, and if she saw a rabbit running she'd shoot it. Then get the snares" (#10D).

"I used to go all over with me mom and I knew how to set snares [rabbits] *and how to set a trap for squirrels and weasels...We used to go trapping them* [muskrat] *at the lake. Or else, shooting them with a twenty-two"* (#9D).

'Mom used to set snares for rabbits and she used small traps to catch rats. In spring we collected duck eggs and ate them boiled' (#23D).

"We followed my Mom you know into the bush and then we'd get a rabbit. And she'd stew it up" (#19D).

"There used to be a lot of rabbits. We used to sell them to the mink farmers eh, for five cents. Mom would save the skin, dry it up and make mittens, for our coats and stuff" (#12D).

"Well usually they shoot them but I'll tell you a story about how we got one once. I was there with my eyes wide open observing this. It was just right outside our house. There was a tree up there eh. Not real tall. My Mom had this long stick. She made a snare at the end of it, and I watched her put it over that little chicken's head and pull that thing and she got that partridge, there it was supper. I couldn't believe that. The dogs I think barking were keeping it up there" (#1D).

'Usually hunt chickens with a 22 or snare them by distracting them with a puppy then use a long stick with snare wire at the end. For rabbits you find a trail in winter or summer they like willow and mom mostly snared them. Used to collect duck eggs from nests on the top of

the water. We used a boat or just walked in. Squirrels like the spruce and we snared them and sold the skin' (#21D).

Picking Berries

Berries were an important component of the diet that was largely composed of meat and fish. Below are selected quotes from Swan River First Nation Elders regarding berry picking.

"You mean a long time ago, ya? We started out by whatever was ripe. That was strawberries. And then saskatoons. Raspberries and then blueberries. We used to go on a horse and wagon. We used to go over here in the hills. You know where that road that goes over to Swan Hills? There. But then, I don't know how many miles from this way, and then you go into, there was always a trail up there. It was a good load over there. We stayed over there all day. We made our lunch up there. Made a little tiny fire. Made a lunch and everything and picked some more. You know what I mean. Talk and pick all that day and then come back home...Every year we did that. It was many years ago though" (#19D).

"We used to go what did they call it, Blueberry Hill. It was by Pritchuk's Hill but we used to go by a team of horses and a wagon. We used to go pick blueberries up there all day. It was just like a holiday. We'd roast potatoes, we'd cook up something eh...Well I think we camped a couple times ya. It was kind of scary because where there is berries there is a lot of bears. It was fun. Just like lots of people used to go out there. You know we got to play" (#1D).

'Four families would go berry picking by wagon and pitch a tent. We would pick in the Sand Hills towards Swan Hills, we picked blueberries and cranberries. Now that area is now fenced. I loved it, I would look after the young kids, I would listen from my tent to the adults at night when they would tell stories around the campfire. I have a lot of happy memories associated with picking berries' (#23D).

"Maybe that's what I liked looking forward to because we used to go picking berries, go in a wagon, there'd be a few families, like, three families in a wagon and kids, and we'd all go out and camp for a week or so and just pick berries" (#41B).

"Well they used to go, when we were in Joussard there, we used to all go camping and pick blueberries. I sure used to like picking but after you do it for a week, you get tired. You have to pick three pound pails, and after you picked three of them then you could play. So we did fast the first two but the third one we couldn't so we used to put grass in there and we used to put berries on top but we used to get caught...Oh when we come to Joussard berry patch ...we used to come there for a week. Sometimes other places three days. Sometimes only one day. You know go on the wagon and go pick" (#7D).

"Us kids used to pick berries, pick, pick my mother canned them, hundreds of quarts' (#42B).

'I remember how mom and I would pack a lunch and blankets and take the train from Canyon Creek to Kinuso. We would get off at the water tank and pick saskatoons all along the tracks, we had lunch there. Then we would walk to town and take the train home' (#20D).

Preserving and Processing Berries

Before electricity and deep freezes, preserving berries to prevent spoiling was an essential skill for survival. In the selected quotes below Swan River First Nation Elders discuss preserving and processing berries.

"Chokecherry is ma noo ma na nah. Because, long time ago, people used to look for a flat log and they'd wash and clean it good and they'd put the chokecherries there and take another stone and smash them. And after they smash them, they also dried them. And in the wintertime they would fry those, put sugar and eat them. That's why they call them the word na nah because you hit them" (#16D).

"With saskatoons, she dried some...And the chokecherries, in the Fall we had to pick. She'd make sure that we got a bunch of them and then she would crush them. Like put them in a cloth and hit them on a rock, just crushing the stones and all. And then with rendered moose fat she would mix it all together. Like the hot fat in there and then she would put them in the jars. And then put away for the winter. We were given only a half a teaspoon of that a day and that was to prevent us from getting any respiratory illnesses" (#4D).

"We canned all that stuff except for the saskatoons. They're no good to can...Saskatoons, I dry it. You know you put the big thing on there and dry them. I don't know how long it took boy. And after they were done you could tell you would just pick them up and they were just raisins. Little small raisins and I put them in a bag and hang the bag up somewhere inside. Then whenever I need some, I take some out and cook it and it's just like fresh" (#19D).

'On canvas people used to dry blueberries, saskatoons, and chokecherries, crush chokecherries and fry them with lard to get your fibre' (#45S).

"Well, I used to put that, when I pound the dry meat to powder...I'd take it and pour grease in there and put saskatoons and sugar and then mix it real good and I'd put it in a loaf pan until it dried. Then I'd take it out and we used to like it. Eat it. That's what you call pemmican" (#16D).

"[What did you use to pound it?] *A stone. If I didn't have a stone, I'd use a hammer. I'd buy a canvas and wash it about five times because you don't know what it's made of. You know the canvas you make tents with or a tipi. I'd wash it about five times and boil it too. And that's where I'd put the dry meat and wrap it up and pound it. You have to wrap it up or it would fly all over.* [I guess a long time ago before canvas someone would use a piece of hide?] *Oh ya. My grandma did before it was tanned. When it was still stiff. She would sew it together just like a bag. With sinew, not thread, with sinew from the moose. And that's what she used to, I guess that would taste better than the, when you are using the canvas maybe, I don't know. To me it tasted good"* (#16D).

Making Moose Hides

Below Swan River First Nation Elders discuss the arduous method of processing moose hides into material usable in coats, moccasins, and gloves.

"Well, you make a rack, real square. A big one with poles. And then you cut holes around the hide and you tie it to the frame there. And before it dries up you tie it real quick. Before it dries up on the meat side. And that's where you scratch all that meat or whatever that's on the hide. And then when you finish you set it up if you have dogs. If you don't have a dog you don't have to do that because dogs might like to eat it, you know. Set it up until it dries, dries real good. And then you turn it over and then you scrape all the hair off. When you are finished scrapping all the hair off you take it out of the rack and then you put grease, lard whatever on it and then brain from the moose head. You spread it there with your hands. And then you fold it up and you put something heavy on top of it for about three days until all that thing soaks in the hide. And then, when you think it's soaked, you put it in a great big tub of water, soak it there until it's soft. And then you take it out of the water and you wring it out. You make a, like a fence like that, and you put it over there and you use a big stick and you wring that. That was a hard job. And then you dry it up. And you keep stretching it until it is real dry. Because if you don't it will be small you know. Then you smoke it" (#16D).

"I used to go in, we had a little bush behind the house there and my husband made a fire pit there, a hole, and he put sand so I wouldn't make a ground fire. There was two little trees like that. I put a stick across there and that's where I tied my hide. I didn't like doing that. That's why I used to sell the hides white" (#16D).

"Scraping the flesh first, then scraping the hair. Then soaking it in a mixture of water and brains from the moose and wringing it out. Stretching it and softening it on a rack made out of a piece of iron that had grooves in it to soften it. Soak it and stretch it. Getting a certain kind of wood, it was like decayed, rotten wood...we'd get that and put it in a tub and smoke the inside then turn it around and smoke the outside" (#5).

"They had what I called the fleshers. The flesher was made out of, I guess it was moose leg bone. It would be dried up and then cut kind of on an angle like this you know...And then

they would make little grooves like teeth on there. That's what she would use to flesh the hide with on the one side, on the meat side eh...For that side there was what they call a scraper. My Dad would make kind of a wooden handle and then he would get a strong piece of steel usually from a mower machine or something like that. Like real strong and he'd sharpen that right up. That's what they used for scraping the hair off" (#2D).

Worldviews

Some of the worldviews of Swan River First Nation members are discussed below including harvesting protocols, teachings from nature, and perspectives on spirituality, family, community, and loss of culture and language.

Harvesting Protocols

Unlike many Canadian's of European decent, who view the land and its resources as at their disposal, Swan River First Nation Elders view the land and its plants and animals as their equals and relatives. '*Animals were our brothers and sisters and we could talk to them in the past*' (#46S). They thus have a number of protocols or proper behaviour and respect that must be followed when harvesting plant and animals resources. The protocols required when harvesting a moose are discussed by Elders below.

Victor Twin discussed how his father was a very religious hunter and after each kill he would cut the tip of the heart and put it on the sharp branch of a tree (Kinuso 1979: 270).

Another Elder explained how when they went out in the bush they honoured the moose, they prayed, they took tobacco, and they prayed because they were taking a life (#30T).

"When you killed the moose you cut the tip of the heart and point it east and say a little prayer" (#17D).

"My Grandmother used to use the heart and the, all the organs or all the organs inside...she used to, this was kind of sacred for her I guess because she never really told me, but she always like, you know, she had a fire going and put all the stuff in there and she'd pray at the same time...she used to burn all this and at the same time she used to pray and when I used to ask her what she was doing, she said she was praying to the grandfathers, the grandmothers too, I guess, to always pray for the people, her people, and to help her people and for her family and herself, and thank them, or thank the creator for all the food that was, that they were going to eat, you know?" (#41B).

"The best thing to do it you really want a moose for yourself or your family or to give some away, you know you pray. You pray to Creator and spirit of your grandfathers and ask this animal to sacrifice its life for us. So we can move on too. It's mostly what I do you know. You pray that you don't waste any of this because sometimes people kill moose and they just take the hind quarters off and go sell it and go to bingo you know" (#13D).
"The heart is actually, if I remember, even back then, I think that was the only thing that I can remember in our culture that when someone passed away you always boiled this heart. See when you kill a moose, first of all when you shoot a moose, you take a little piece of that heart and you put it on the tree. To be thankful for the meat, the food eh? And you leave that there. So, traditionally that heart we don't just eat it or fry it or fool around with it. What we do is say maybe there is someone passed away, and there is ah, they call it a wake. At midnight that's when you served the heart stew. That's what it's called, heart soup. And you serve that. It's sacred" (#8D).

There was a huge amount of respect for the resources that sustained life, "*we respected the bear...I know the moose nose was respected. That was really special. Like the heart and the liver*" (#11D). Elders discussed how '*hunting protocol is to always leave something for the animal*' (#48S). Elders showed the same respect when harvesting plants and were always told to '*offer tobacco and prayer in thanks*' (#47S). "*When you take from Mother Earth, you replace, you give back. And your prayers ask of our Creator that it will help whoever is using it*" (#4D).

Elders also demonstrated their respect of the land and its resources through discussions regarding other harvesting protocols discussed below:

"And beaver...we trapped them for the fur to make money on it. But then we didn't kill them all. If we found a pond with ten beaver in there we would kill seven and leave three. So they can re-grow again" (#17D).

"And go after them so many, but they don't take them all [eggs]. *Don't take them all. That's the main thing. Don't take them all. We got some ducks, we want some little ones"* (#19D).

Teachings from Nature

Elders discussed a number of things that people can learn from observing plants and animals thus demonstrating this special relationship that Swan River First Nation has with the resources in their traditional territory.

'We learn a lot from animals, how they act and what they eat, when a moose eats something they eat something good, a kid had a rash and the grandpa killed the moose and smeared the stomach contents of the moose all over the kid, in a matter of hours his rash cleared and in one week there was nothing left, it is all medicine that the moose eats, anything you see a moose eat is medicine, that is why we eat those animals' (#44S).

'if bees go deep it will be a cold winter and vice versa, if moose have lice yearly then will be an early spring, went the fluff from a certain plant starts flying it is time to call moose' (#48S).

'A beaver's house level predicts the weather conditions' (#51S).

One Elder described how First Nations learn about their traditional territories and resources through hands on experience, "*we never learned it out of a book we never learnt it out of anything else, I learnt it from experience*" (#40B). "It was your experience, not education that helped you in the bush" (AINA 1999: 63).

Spirituality

Missionaries and the residential school system did its best to displace First Nations spirituality by belittling and humiliating a community's 'medicine man' and condemning traditional beliefs and regalia as devil worship. As demonstrated in the stories below there were a number of Swan River First Nation members with great medicine power that continued to serve their people during this difficult era.

'Benjiman Giroux did a shaking tent at Patrice Sipi because people were starving, men sat separate from the women and children, he came out of the tent after and started killing moose and the woman and children followed behind, moose meat like you would not believe' (#15D).

'A witigo had her head cut off by Julian Courtoreille, Julian hid from the police at Assineau and was told there was a boat waiting for him at Wahpah , Julian was taken away in hand cuffs, they could not hold him in jail, so they chained his feet and hands to the bed, he always escaped and they found him outside his cell smoking, eventually they just let him go' (#15D).

'Wahpah came across from Wahpah to Kinuso on a raft for supplies like flour etc., there was a storm with white rapids but when he went by it was calm, he held possessed powerful medicine' (#22D).

One Elder discussed how his grandfather would travel into the Swan Hills for a spiritual fast:

"*He* [Edward Twin] *would go fast up in the hills, Swan Hills someplace. He would take a blanket and go with only a little jug of water my Mom said. He would fast for seven days. He'd walk by House Mountain or someplace near it, he'd walk up there, fast for I don't know for how many days and come back. But he was gone for seven days total eh. Ya. He'd do that"* (#5D).

One Elder explained her understanding of the spirit world, '*Northern Lights are spirits of people who have passed on*' (#46S).

Tea Dances were an important aspect of Swan River First Nation spirituality and persisted in Swan River even when they had to be hidden from the church and the Indian Agent. '*I remember going to a tea dance as a kid between the elevators and the graveyard, Pat Giroux/Mitchell drummed and Philomene, Anna McCree, and Gab Thompson sang, they had to hide it'* (#45S). *'At Tea Dances my uncle Patrick Giroux and Anna McRee sang together'* (#46S).

One Elder described how Tea Dances were held to welcome waterfowl back after winter, this speaks to the special relationship that Swan River First Nation members had with their resources: *'cranes and geese when you have a tea dance you are welcoming them home because they follow the sound of the drum, that is why we drum dance in spring'* (#48S).

Family

Elders described how close their families were growing up and how much love they had for one another.

"You know at that time there was a lot of love eh. A lot of affection to your elders" (#19D).

"We lived a poor life but like I said I wouldn't trade that for all the money in the world. We had really good parents. I never knew I was poor. Until in later years I started wondering, who the hell is Santa Clause? (Laughs). We used to hang our stockings up eh, just because it was Christmas. We knew that nothing would be in there. We never knew but Gordon, when he started working that's when we got our first Christmas present. I remember he got me a silver ware set eh. And I never kept it you know that. I lost it somewhere along the way. Something I should have kept" (#1D).

"Like we really didn't have that much to eat eh, we never did...So it was, we never knew that we were hungry. We never knew that we were poor. That's something I'll always remember that my parents were so good. You know my Mom made do with everything. And they were never mean to us" (#1D).

Elders described how as children they believed that rabbits brought babies and recalled listening to stories about *Wisackajack* and *Wiskaskoo*.

"I used to believe in ah they'd say the rabbit brought the babies eh when they were born" (#9D). *"I was told that the rabbit was going to bring him...I really believed the rabbit brought my brother"* (#8D).

"They told a lot of stories about Wisackajack and Wiskaskoo. We were scared of Wiskaskoo. If we wouldn't go to bed Wiskaskoo would come and get us. They always used that. Wiskasoo come and got me the other night...Wisackajack was a liar eh? And Wiskaskoo was a meat eater I guess. I mean you know these people eh, a cannibal" (#10D).

Community

Elders described how in the past, harvested resources were spread and shared throughout the community to make sure that everybody had enough. Greediness and hoarding of resources was frowned upon.

"[After you killed a moose] *you gave some away to your relations"* (#6D). *"It goes all over the community when you kill a moose"* (#40B). *'Whoever netted fish always gave us some'* (#45S).

'We collected duck eggs by the tub in the tall grass in the water and gave them out to their neighbours' (#50S).

"I know alot of times people who fished didn't like suckers. So they used to come and give us alot of suckers" (#1D).

'A long time ago when white people first came to the valley my relatives helped them to survive, like to hunt, they would have starved if it wasn't for the Aboriginal people's help' (#23D).

Loss of Language and Culture

Swan River First Nation Elders are sad when they talk about the loss of the Cree language and culture in the community.

"I never took time to learn what we were taught. If I knew all of that my kids would too. Just like this Cree. My kids don't know anything about our tradition or to talk Cree because when you are in the Convent they used to hit us if we talked Cree. They said that was the devil's stuff. And I had vowed to myself, I said if I ever have kids they'll never talk Cree or know anything about my tradition. Nothing. So I never taught them and that was the biggest mistake I ever made in my life. Now they need their Cree, they need their tradition. Now how can I give it to them when I don't know that much" (#7D).

"When you speak the Cree language the meaning is so, comes so from your inner spirit when you speak. But when you translate to say the same thing in English it takes that away. And this was caused by the residential schools again. Because they took that language away now. So to talk to your child now in English it's not the same, like if they could understand Cree that meaning its really there where they will listen. If you say "It hurts me when you do this", you can't say that in English now. You have to say it in Cree [Cree], *you know it hurts me. You see that has more meaning"* (#8D).

"But, to me these old people that were here first, you know, the chiefs our relatives, our ancestors that were here first. You know they done everything they could to survive. They knew what to do. That's why they used to tell us [Cree] *means in the future, it's going to be hard...But you know at that time there was the culture, the spirituality was all there. Everybody stuck together. There was no fighting. There was no power struggle. Nothing. Ever since the old people have gone, people I guess now, you know, they are so different. Everything is gone...They're supposed to give thanks. Everyday, every night. You know the thing to do is you build a fire, spiritual fire to feed our grandfathers...you know there's no balance between our grandfathers and us. So we really have, no matter how hard it gets, we have to keep doing it"* (#13D).

'Everything was shared, now everyone is for themselves, it is not a close knit community anymore, if someone gets a moose just the immediate family gets shared with' (#23D).

The objective of this section was to document how and where Swan River First Nation exercised their Treaty Rights to hunt, fish, trap, and gather in the past. This information provides the foundation for the present and future discussion sections of this dissertation. The past section influences the future land use plan (chapter 7) by demonstrating important patterns, resources, and areas in Swan River First Nation land use. The past section influences the model for future archaeological survey (chapter 9) by illuminating what areas and what resources were used on the landscape and why.

The next chapter discusses present land use and is most relevant to Swan River First Nation and the Province. It outlines *present* or existing conditions regarding infringements to Swan River First Nation's ability to practise their Treaty Rights to hunt, fish, trap, and gather and the *present* context and issues associated with Aboriginal Consultation in Alberta with regards to infringements to Treaty Rights.

CHAPTER 6. PRESENT LAND USE

Infringements to Rights and First Nations Consultation in Alberta

The previous chapter documented how and where Swan River First Nation exercised their Treaty Rights to hunt, fish, trap, and gather in the past. The objectives of this chapter are to:

1. Document *present* or baseline conditions regarding infringements to Swan River First Nation's ability to practise their Treaty Rights to hunt, fish, trap, and gather.
2. Discuss the *present* context and issues associated with Aboriginal Consultation in Alberta designed to minimize infringements to Treaty Rights.

Infringement to Swan River First Nation's Ability to Practise their Treaty Rights

Swan River First Nation members continue to use the land to practise their Treaty Rights. However, they face many challenges in doing so in their traditional territory. One of the largest infringements to Swan River First Nation's rights has been a decline in both the quality and quantity of traditional resources including water, wildlife, vegetation, and fish. The section below utilizes Swan River First Nation traditional knowledge in the form of quotations to document declines in both the quality and quantity of traditional resources in Swan River's traditional territory as well as perceived causes. These infringements to practising Treaty Rights have ultimately led to a decline in the utilization of traditional resources. The physical, social, and cultural implications of this decline are also discussed.

Water Quality

Swan River First Nation Elders described using the following sources for drinking water in the past: rivers, lakes, sloughs, muskegs, snow, ice, and rain water (#53D). Today Swan River First Nation Elders explain how, when out on the land, they are limited to very few sources of clean water in their traditional territory including natural springs, muskegs and small creeks in remote, untouched areas (#53D). In the quotes below Swan River First Nation Elders describe in detail the decline in water quality in their traditional territories that they have observed in their lifetimes.

- *"We drank river water. It was clean in those days. Ya and we washed clothes with that and that's what we drank. It was clean. And even the sloughs were always full, and clean and clear"* (#8D).

- *"Our water was clean too. You could go to the lake and drink water until about nineteen sixty some"* (#10D).
- *'The water was beautiful, clear, like melting ice, now the rivers and creeks look like hard boiled tea. You could drink from rivers and creeks...now you can't because they are all polluted'* (#50N).
- *'The lake is contaminated, people break out in blisters...it smells now and it never used to'* (#14N).
- *'Can't even swim in the lake, get rashes'* (#47N).
- *'In the summer it* [Lesser Slave Lake] *has algae and it smells'* (#47N, #48N, #7N).
- *'My biggest concern is the water, you can't even bath in this water* [Lesser Slave Lake] *and go swimming. There is almost like a scum on the creeks, we can't drink the water no more'* (#34N).
- *'You could drink from rivers and creeks and could make tea, now you can't because they are all polluted'* (#50N).
- *'Used to be able to drink from the creeks, can't do that anymore'* (#8N).
- *'People have to buy water even though water is all over'* (#14N).
- *'Years ago used to be able to drink water at House Mountain, Deer Mountain, and Grizzly and now you can't'* (#52D).
- *'My biggest concern is the water, you can't even bath in this water and go swimming. There is almost like a scum on the creeks, we can't drink the water no more. On the news you hear how the water is being contaminated but the government is allowing it to happen, they don't take into consideration people's health. I don't even want my face in the water...the main concern is the water, the main, main topic is the water situation'* (#32N).
- *'Swan River is lower and more dirty, the lake used to be clearer'* (#46S).
- *'Can't drink water anymore, have to pack water into the bush'* (#51S).

Reasons for Poor Water Quality

The following sources were cited by Swan River First Nation Elders as contributing to poor water quality in the Lesser Slave Lake region.

Alberta Special Waste Treatment Centre

Participants explained how contaminants from this centre leaked into the watershed causing contamination of the water resulting in negative effects to wildlife and fish health: '*Everything from the ASWTC comes down in our lake and fish are contaminated*' (#8N), "*Why did they put it* [ASWTC] *on a hill facing the lake? It comes all down in the streams?*" (#10D). '*Contamination runs down to the lake, all the contaminants from the ASWTC, the silt runs down in the water, the Swan and Driftpile are the two largest rivers draining into*

the lake from the Swan Hills' (#52D). '*Everything comes down from the Swan Hills and drains into the lake*' (#23D).

Forestry

Extensive clear cutting of forests in the Swan Hills was described as resulting in increased run off and flooding and subsequently poor water quality, '*there is less water in the bush today, because of forestry and clearcutting water just runs away*' (#52D). In addition, waste from saw and pulp mills in the area is believed to be dumped in the watershed (#53D).

Oil and Gas

As mentioned previously, the Swan Hills is the third largest oil deposit in the world. Participants explained how in the past industry in the Swan Hills was very careless and did not follow the environmental regulations in place today. One Elder described encountering a spill (four over flown oil tanks) in the Frost Hills in the 1990s while hunting. Another Elder described the following: "*See years ago when they finally built roads up there, and struck oil in Swan Hills, they were so wasteful up there eh. Like I worked in the oil field in them days. If there was a spill it was okay. They left it*" (#17D).

Participants described the dumping of contaminated water by oil companies into the watershed and cited examples of abandoned sites with contaminated water that were not cleaned up (#53D). Acid rain resulting from industrial emissions is also believed to contribute to poor water quality.

Agriculture

There are agricultural lands along the south shore of Lesser Slave Lake beginning around Kinuso and extending west to High Prairie and beyond. Fertilizers are believed to have caused algae blooms in Lesser Slave Lake making in unfit for swimming (#53D). Overgrazing of riparian zones by livestock is described as causing high concentrations of livestock waste in waterways and water bodies (#53D).

Transportation and Transmission Lines

There are networks of transportation and transmission lines that transect the Swan Hills and Lesser Slave Lake area that are related to oil and gas, forestry, agriculture, tourism, and inhabitants of the area. Swan River First Nation members feel that herbicides used in powerline maintenance run into the watershed affecting plants consumed by wildlife and plants used for traditional purposes (#53D). Salt from the salting of highways runs into the watershed altering the water's salinity (#53D). In addition, the construction of roads often damages water (e.g., when a slough has a road built directly through it or creeks are diverted) (#53D).

Tourism

Tourism associated with Lesser Slave Lake is substantial particularly in the summer months. Recreational use of Lesser Slave Lake is felt to contribute to declining water quality caused by fuel from watercraft, and especially from marinas (#53D).

Water Quantity

Participants explained how, in the past, sloughs were used for swimming in the summer and skating in the winter. Elders described chopping holes in sloughs in winter to keep them open for their horses to drink from. Today sloughs in the Lesser Slave Lake region are described as having lower water levels (#53D).

It was also explained how the area between the Swan River and Strawberry Creek frequently flooded. Flooding was so severe that Elders described 'rafting down Main Street in Kinuso'. The flooding was explained as resulting from increased runoff from the Swan Hills due to intensive clear cutting by forestry in the 1970s. Flooding ceased in the late 1970s with the construction of a series of dykes associated with the Swan River (#53D).

Reasons for Poor Water Quantity

Participants described lower water levels in sloughs as a result of the following: the construction of dykes, road construction, and agriculture. Water levels in Lesser Slave Lake are also described as declining and are believed to be related to the following: water intake by pulp mills, water being taken from the lake and trucked to the Swan Hills for use in oil

and gas activity, and agriculture. Declining water quantity in both sloughs and Lesser Slave Lake has led to a decline in both quality and quantity of a number of traditional plant resources that grow in riparian and low-lying moist environments including the key cultural resources mint, rat root, and diamond willow fungus (#53D). For example, mint or *laboom* has been described as being less abundant and growing shorter in traditional harvesting areas (#47N).

Traditional Resource Quality and Quantity

Swan River First Nation Elders have witnessed a decline in the quality and quantity of traditional resources including wildlife, fish, and vegetation. In the quotes below they discuss the declining quality of rabbits and moose and a decline in geese, grouse, frogs, bees, and berries.

- *"There were lots. And they were like healthy rabbits. They were good. Nothing was wrong with them at all. Like right now, if you got one, you'd really have to check it"* (#19D).
- *"I remember when I was a kid we used to watch the geese flying back and forth and the sky was black. It was dark. There were that many birds flying. I used to just lay in the grass and watch them. Flocks and flock of them, for about five days they'd do that. And now I don't think I've even seen one flock fly by. Ducks and cranes. Hardly seen them. I think here was one of their main fly throughs in them days I guess. Unless they pick another route now"* (#17D).
- *"Then the sloughs were full of water. Now they're dry...You don't even hear frogs or nothing anymore...this year there is not very many bees"* (#9D).
- *"The partridge, there was just tons of them, all kinds of them". "And raspberries anywhere and everywhere and saskatoons were all over. Nowadays it is hard to find them"* (#4D).
- *"You have to watch in the liver* [of moose], *if there are any spots and those holes. Just throw that away it is no good"* (#12D).

Moose

Moose is one of the most important traditional resources to Swan River First Nation members and unfortunately has suffered from declines in both quantity and quality. The following section outlines the degree of this decline as described by a selection of statements made by young Swan River First Nation hunters (#52D is the code used to identify the participants of a series of small group sessions conducted with twelve of Swan River First Nation's most active young land users).

Quantity

- *'no moose in House Mountain anymore because development pushes them out...years ago remembers seeing moose all along the Swan Hills highway, now does not see moose in that area anymore...knows a hunter with a cabin at the Inverness who has not seen a moose for 3 years...there are less trees which mean less hiding places for animals'* (#52D).
- *'over hunted so no moose, now if you see something you have to go for it... industrial development effects animals, it could be an animal's favourite spot, could scare animals off'* (#52D).
- *'too much activity, animals getting scared and dying off, more industry and less moose'* (#52D).
- *'used to go to Frost Hills, there was lots of moose, now there isn't...20 years ago there was more moose, last night travelled 100 miles in House Mountain and did not see a single moose track...less moose because of more logging, more roads, more industry, moose have no place to hide'* (#52D).
- *'even 4 years ago you saw more moose, now seeing less'* (#52D).
- *'only saw one moose at Camp 8 road this year no others, this year is different, no animals...logging effects animals especially up Mooney Creek, it destroys their habitat...hardly any moose close to home, got 2 in the last 4 years ...been going to camp 8 for 15 years and no tracks this year, more moose in the past because there was more bush and impacts from the burn, oil and gas, and forestry'* (#52D).

Quality

- *'to determine if a moose is healthy check the liver, has seen multiple milky looking livers which means the moose is sick'* (#52D).
- *'killed an old bull with cancer, small pumpkin sized, hard tumours on its body...one sign of an unhealthy moose is if it the liver has blue dots on it...to tell if a moose is healthy: look for lumps, look for blue spots on the liver , rough and lumpy spots on the kidney, and a black spot on the heart...have killed 4-5 bad moose...seeing sickness in the moose in Swan Hills, but the moose south of Faust are ok...main hunting area is House Mountain and that is the area most developed by industry and affected by the ASWTC'* (#52D).
- *'30km or more radius around ASWTC that we avoid...killed a moose with a growth on its leg, belly, and back...in a sick moose the lungs may grow right to the capacity of the rib cage and liver may have white spots'* (#52D).
- *'killed a moose with green worms in its muscles and in it, left it there...the first thing to check when you kill a moose is the liver, should be a dark, solid color, purple, if bad has white spots or growths...avoid the ASWTC, stay on this side of the Moosehorn to hunt...will shoot a black moose but not if it is brown and dingy'* (#52D).

An active young Swan River First Nation hunter provided a detailed description of the types of abnormalities he has encountered while harvesting moose. He described killing a

bull moose near Driftpile with 10-11 potato-like growths on the outside. However the meat, liver, kidneys, and heart appeared fine. He also described a moose shot on I.R.150E that had a blue tumour and described how he would not eat that moose. This hunter explained how he will still eat a moose with tumours as long as they are on the outside of the skin and not in the meat. He explained how he will not hunt in Swan Hills because, '*the population is low and most of moose I've gotten with tumours are from there*' (#46N).

He explained the criteria he uses to assess the health of a liver, '*a bad liver is spotty, not colourful, it doesn't shimmer*' (#46N). He also described having seen '*white moles*' on livers. He explained that an animal's health can be determined by observing the amount of fat around the kidneys. He has also seen what he described as lung cancer in moose and deer, '*dead, black lungs, not right, one lung smaller than the other*' (#46N).

Another one of Swan River First Nation's young hunters explained how her hunting area at south Mitsue '*used to just be a quad trail and now it is a logging road surrounded by lots of oil and gas activity. I have seen moose with cysts around south Mitsue*' (#47N). She recalled how she killed a moose in the Swan Hills, '*it was a 2 year old bull with brown teeth*' (#47N). The colour of the teeth was deemed to be a sign of contamination or disease. Another young Swan River First Nation member explained how '*if it has a growth we leave it, we still hunt in the Swan Hills but we are pickier about what we eat'* (#48N).

One young Swan River First Nation hunter explained how a few years back he shot an animal with '*lumps the size of a fist on its back*' (#33N). Another youth explained how '*everybody tells stories about* [animals] *being sick. They find lumps on the outside and sickness on the inside*' (#32N). Some stories speak of a '*deformed* [animal] *foetus from near the ASWTC*' (#29N) and animals with '*liver and heart* [that] *are now green because of the ASWTC*' (#30N).

Fish

Fish quality is stated as declining by Swan River First Nation members. Fish are described as having cysts and growths as well as other deformities. The following selection of Swan River First Nation quotes illustrates this.

- *"And they find big lumps on fish too eh. The other year I found a two headed fish once"* (#17D).
- *'during commercial fishing have seen long and skinny pickerel (like they are starving) also have seen fish with warts, and whitefish with big cancer lumps'* (#52D).
- *'fish in Lesser Slave Lake have growths, mostly the pickerel have these growths, pink lumps on face and by fins...have killed lots of unhealthy fish'* (#52D).
- *'About 5 years ago 1% of pickerel in Lesser Slave Lake had a small bump on it. Today about 60-70% of pickerel have two to three small bumps on them'* (#46N).

Reasons for Decline in Quantity and Quality of Traditional Resources

ASWTC

The ASWTC is described as one of the leading causes of the decline in the quality and quantity of traditional resources in Swan River First Nation traditional territory. The following selection of quotes from Elder interviews illustrates this relationship:

- *"Even when I picked that tea. I picked some Labrador plants when Darryel and I went on that trip. There was a whole bunch of it eh. So I picked some and then after I got home I got thinking well I picked this around Swan Hills I wonder if it is good. You know because you hear of Swan Hills and that waste plant. So it was kind of scary for me. I never used it yet. So I don't know if it would be any good...Even the moose meat. Like a lot of people don't like to eat the moose meat if it came out of Swan Hills because of that plant. And I don't know. Sometimes myself I don't know if it is healthy or not but I have eaten it. I'm still here. So I don't know if it really harms you or not. But it's put a lot of fear in people. Fears of eating the berries and fears of eating, like with me, that tea. I've never used it yet because I'm thinking I wonder if it's good. But then I thought if it wasn't good wouldn't it die? It wouldn't grow? It would kill it?"* (#11D).
- *"I don't eat fish anymore. I did before they had this waste plant. I didn't want to eat any duck, and I love duck. I haven't eaten duck for I don't know how long. Moose I eat. I do eat that once in a while"* (#9D).
- *"I notice like people don't trust like picking berries out in that area because of the waste plant. Some of them won't even eat moose anymore because of that. However I like moose too much that's how come I still eat it"* (#1D).
- *'Used to collect berries and medicinal plants in the Windy Lake area but that area is no good anymore because of the ASWTC'* (#44S).

- *"That's why I won't eat meat if somebody is hunting up there or picking berries up there. Because that Treatment Center, I think it affects us. The way we are sick and everything. I'm pretty sure that's where cancer, because there's lots of people that have cancer. And I'm pretty sure that's where it's coming from. And that's where this asthma and everything too you know. You go to Swan Hills in town and you go traveling there. You see the trees are dead. They are not green anymore. The grass is dead. It used to be a beautiful place. I used to just love going through Swan Hills because it was beautiful. You know the hills and trees were green. Now it's not. It's sad. It's really a sad thing. And then you're losing everything up there. I wish we could get rid of it. But I know we can't. Could we ever?"* (#7D).
- *"But I don't think it's* [fish] *as good as it was a long time ago. They're kind of leery about things too because of what has happened with that Swan Hills treatment plant"* (#13D).
- *'When offered moose meat our first response is, 'Where did you get it?'* (#14N).
- *There is a lot of cancer in the Swan Valley because of the ASWTC, lots of abdominal cancer in all ages'* (#34N, #36N).
- *'Contamination affects plants like willows, moose eat willows, we eat moose'* (#28N).
- *'We are now hunting in the Whitecourt area because the Swan Hills are contaminated'* (#21N). *'We pick medicines down in the Whitecourt area'* (#8N).
- She picked in the Swan Hills until the release at the ASWTC "*but then ah last year was it they had that stuff, people were saying they're poisoned or something"* (#37B).
- *'berries taste different'* (#21D), *'there are less plants, they are different now/paler/less alive'* (#50S).
- *'there are less plants and they are brown close to the ASWTC'* (#44S).
- *'Quit hunting moose since the ASWTC, killed a moose and it was no good, wife didn't want it, have not hunted since'* (#49S).

Elders described warnings from Alberta Health and Wellness not to hunt animals within a 30-40 km radius of ASWTC. Elders describe this warning as useless '*because wildlife can travel over 100km...wildlife travel, they roam*' (#9N, #14N, #16N). Elders also described how '*birds get contaminated and fly all over*' (#18N). Contamination can travel great distances, affecting animals far from the ASWTC: '*wind blows from the ASWTC and pollution effects animals because they eat what falls on the ground*' (#8N).

In 1997 some Swan River First Nation members had their hair and blood tested to measure PCB levels. Results showed high PCB levels causing Swan River First Nation members to consume less or even no traditional foods and medicines. In addition, Swan River First Nation members feel that they '*are not being properly informed about* [the] *condition of*

resources' (#34N). '*Lab results are always hidden*' (#16N). '*We should get results from government studies*' (#2N).

Forestry

Forestry is described as one of the main causes of the decline in the quality and quantity of traditional resources in Swan River First Nation traditional territory. The following selection of quotes from Elder interviews illustrates this relationship:

- *"At that time there was hardly any, any roads and all that and everything...There was lots of trees everything was nice. Green and you know lots of animals all over. You know they looked nice. Now it's bare. Barren country. You'd see, you know the trees on this one side. Maybe half a mile down the road is bare. All these stumps and everything and old trees all on the ground"* (#13D).
- *"I don't like the clear cutting, cause years ago...they would select cut. They only cut the big stuff. Like they go in one area, they can leave it for ten or fifteen years and then go back in the same place and cut the big stuff again. Ya. Then you have your forest all the time"* (#17D).
- *"Well I guess the main thing that most people notice is the clear cutting with forestry. When I used to go out there you would see a lot of trees and a lot of bush. Now in some areas it looks like you could farm up there because it is just open for miles in some cases"* (#2D).
- *"It wasn't like now. You can't trust the bear. Years ago you could walk right by them and they wouldn't bother you. But now the oil outfits have got the land and the loggers, it's all cleaned out and they used to live there. You know. And the animals didn't bother you because they had alot of bush to hide in and walk around. Now you go back there and there is nothing but bare country...All they leave is a buffer so you can't see the opening...No. You can't trust them. You don't know what they're gonna do. You don't know if they are gonna attack you or just walk by anymore...logging, they knocked down most of the trees...There's less animals"* (#6D).

Young Swan River First Nation hunters described how there '*used to be lots of blueberries at Deer Mountain but not now because it has been logged out*' (#52D), '*less berry patches because of logging, logging is the biggest problem*' (#52D). '*Too much clearcutting, putting more animals into smaller areas*' (#18D).

Oil and Gas

Oil and gas development is described as a significant cause of the decline in the quality and quantity of traditional resources in Swan River First Nation traditional territory. The following selection of quotes from interviews demonstrates this relationship:

- *"Well for one thing, there's an awful lot of roads out there. A person can get lost. And I think lots of these game trails and moose licks they used to have years ago, those animals are gone now. They scared them away. That's where people used to go hunting in the summer time"* (#2D).
- *"Sometimes you see the moose are not very good you know. There are hardly any eagles now and where there used to be good fishing and good hunting is now not there no more because they have been scared away. The water is not there. The vegetation is not good. It's oil and gas and too much traffic. There's no peace. There is no peace for animals"* (#13D).
- *'Deer and House Mountain used to be good for berries, trapping, hunting now too much activity and a lot of pollution... difficult access and gates'* (#22D).
- *'People used to hunt all over the Swan Hills but now increased oil development and people around, no quiet place, husband used to call moose and you hear them coming, now traffic interferes, lots of traffic up there, areas all fenced in now, used to be open and could camp anywhere'* (#23D).
- *'Before we had trails and now oil companies make roads and block them off making access hard...noise, pump jacks, you can't hear when you're moose calling'* (#18D).
- *'I avoid hunting near sour gas and areas with a lot of oil activity'* (#47S).
- *'fur (beaver, coyote, wolf) not as good because of oil and gas activity'* (#44S).

One Elder described how '*in the past you break a twig and the moose run, now honk your horn and they just stand there, now they're tame*' (#50N). This same Elder explained how '*moose meat used to smell good and now it stinks, now there are always things wrong with them. In 1989 my husband killed a moose and the meat was full of worms, we sent it to Fish and Wildlife and results were that it was drinking water from water near a sump pump, even the meat was oily. The moose had been killed in Swan Hills*' (#50N).

One young Swan River First Nation hunter explained how '*animals don't know the difference between clean and dirty water, they drink it*' (#46N). He described how old wells are not properly reclaimed and that he has seen moose licking the old installations, '*it is hard to shoot a moose after you see them lick poison*' (#46N).

Agriculture

Agriculture is described as an important cause of the decline in the quality and quantity of traditional resources in Swan River First Nation traditional territory. Agriculture has had an impact by restricting access to previously utilized locations and through the use of herbicides, pesticides, and fertilizers on crops. The following quotes from Swan River First Nation Elders describe the impacts of agriculture on traditional harvesting locations.

- *"Well there's sure less trees and even in that area there...A lot of that along that Swan Hills road there now, a lot of fences there. There's cows where we used to pick the blueberries in Sand Hills. I think that's all fenced up now...But you can't even go in there now to pick berries"* (#8D).
- *'Picked berries around Kinuso but now there are a lot of farmers'* (#37B).
- *'A farmer put a culvert with a grate on it on Eula Creek that restricts jack spawning in spring'* (#47S).
- *'There is less of everything now, less access because now everything is private land, we used to have more freedom'* (#49S).

Transportation and Transmission Corridors

Transportation and transmission corridors are also an important cause of the decline in the quality and quantity of traditional resources in Swan River First Nation traditional territory.

- *"There are not many berry patches anymore... Strawberries and the raspberries too. You know where they used to grow along the roads we used to pick. A lot of times they are spraying there now. You know so the berries are not good to pick. A lot of people won't pick them because they have been sprayed on"* (#11D).
- *'spray along RoWs and roadsides, affects berries, plants, and animals eat that'* (#5N, #6N).
- *'animals eat plants below transmission lines sprayed by companies'* (#44).
- *'lots of animals on the highway now, getting killed. Start going close to the highway when it's cold'* (#11N).
- *'It is cleaner to get away from people and cars'* (#18).

Tourism

Use of watercraft in Lesser Slave Lake related to tourism also plays a role in the decline of quality and quantity of traditional resources in Swan River First Nation's traditional territory as illustrated in the following quotations.

- *'Fish are no good now, whitefish in Lesser Slave Lake used to be good and now they have meat black on both sides and the meat tastes like gas and oil because of too much boats'* (#50N).
- *'Used to pick blueberries in Joussard but now it is all houses'* (#48S).

- *'now people are running all over the land and we can't do too much stuff out there'* (#51S).
- *'Some of the medicines aren't around here* [Kinuso] *anymore, you have to go a long ways to find it'* (#11N).

Although traditional knowledge related to climate change was not discussed in the context of its impact on water and traditional resource quality and quantity it is an important area that requires future research.

The Alberta Government's Perspective on Resource Quality and Quantity

The first western science assessment of water quality in Lesser Slave Lake was completed from 1991-1993 (Noton 1998). The main concern with water quality as a result of the study was high nutrient and algal content in the lake. A number of tributaries were also tested including the South Heart, Driftpile, Swan, Assineau, and Marten Creek. In these rivers dissolved oxygen levels in winter as well as the nutrients nitrogen and phosphorus and the metals iron and manganese did not comply with the Alberta and Canadian guidelines. Another water quality study in the Lesser Slave Lake area was completed from 2000-2002. This study had similar results to the 1991-1993 study (Wolanski 2006).

The Alberta Government has not been conducting comprehensive studies with a focus on wildlife quality in the Swan Hills and Lesser Slave Lake area. It was only after the release of toxic chemicals from the ASWTC that comprehensive studies were completed by the Government of Alberta resulting in a food advisory within 30km of the ASWTC. However, the Government of Alberta's Species at Risk (SAR) program does monitor the quantity of species in Alberta. As discussed in chapter 2, the Swan Hills and Lesser Slave Lake area is home to a number of species at risk including the piping plover that is endangered and the following species listed as threatened: peregrine falcon, woodland caribou, trumpeter swan, northern leopard frog, and grizzly bear. The Alberta Conservation Information Management System (ACIMS) also monitors species populations in Alberta. This system attempts to provide "accurate and accessible biodiversity information necessary for making informed decisions concerning conservation, natural resource management, and development planning. The ACIMS collects, continually updates, analyzes and

disseminates information about the location, condition, status, and trends of selected elements, including species and plant communities" (Government of Alberta 2010b). However both SAR and ACIMS do not consider Treaty Rights when determining healthy population thresholds.

From a Swan River First Nation perspective, the Government of Alberta has done an inadequate job of assessing the quality and quantity of resources in their traditional territory. This is a major issue as the honour of the Crown is at stake with regards to infringements to the Treaty Rights to hunt, fish, trap, and gather. Even when western science data demonstrates declines in quality and quantity of resources, the Province has not taken sufficient measures to mitigate impacts caused by oil and gas and forestry development (i.e., woodland caribou and grizzly bear). Instead an 'open for business' approach is taken whereby economic development from resource extraction trumps environmental protection. This is most obvious in the oil sands regions of Alberta.

Consumption of Traditional Resources

Prior to the ASWTC the Swan Hills were "*the best grocery store for medicine, plants, hunting, and trapping*" (#19N). People are now afraid to consume traditional resources harvested in the Swan Hills because they are understood to be contaminated from the ASWTC (#22N, #34N). '*I'm now leery to eat moose meat I always ask where did it come from...ducks less people eat them, I still eat fish but eat it less often*' (#23D). '*I'm concerned about where moose meat comes from and I'm afraid to eat fish and organ meat because of the advisories*' (#8D). As a result, Swan River First Nation members are eating less traditional resources and having an increased reliance on store-bought foods. The following quotes exemplify this issue.

- *"There is more diabetes because more people have to eat store food - and more heart attacks too"* (#8N). *"A lot of diabetes because less moose,* [we have] *no choice but to eat beef"* (#7N).
- *"There's a lot of cancer now. People getting cancer and heart attacks, diabetic"* (#17D). *"More cases of cancer appear all the time, more than there used to be"* (#22N).
- *"And one thing we shouldn't be, is afraid to eat our own things that we grew up on. We should not be afraid of that. And like Gordon said you know when an animal is sick, you know from the innards. Like the kidneys, the heart, you'll see it and the meat will be affected you know. He did show me once when something was wrong*

and that was years ago and maybe we should have had it analyzed. But we didn't eat that meat. Ya but we shouldn't be afraid to eat that. We should go back to eating that way. We would be a heck of a lot more healthier than we are now...I quit eating the meat since the spills...I found out I was anaemic, and I quit eating moose meat and stuff...I ate those [moose ribs] *and I could just feel myself building up my strength again and getting back to where I am today"* (#4D).

- *"Less people are going hunting and eating the meat. Less people are picking berries because all that stuff they figure is going up in the air and it does that. They are saying that what comes out of that smoke stack does nothing but I can't see that. Where ever that wind blows that's where all that stuff goes. And it goes onto the plants. And you know the vegetation is no good there anymore. Same with the animals. The animals eat that. So there is lots of impact from that waste plant. And before that was there, people were pretty well healthy. Now people that live in the valley and here, not so much, quite a bit here too. People are getting sick. They are getting cancer. There is more cancer now than anything else. And diabetes. The reason why people are having so much diabetes is because they had to change their diet. They are buying more, canned stuff and not using the meat and berries, the natural stuff that we used to eat. So people are very, very, I'd say there is a lot of impact on the people here. I don't know how in the heck a person can change that. We didn't want that here in the first place. It's all money I again"* (#14D).

Traditional Resources and Community Wellbeing

Due to the cumulative effects of the ASWTC, oil and gas activity, forestry, agriculture, and other developments there has been a decline in the quality and quantity of traditional resources within Swan River First Nation's traditional territory. As described by Nelson et al. (2008), in addition to environmental factors: time, wildlife harvesting regulations, costs, competition, and knowledge are all factors that contribute to declines in subsistence harvesting. The end result has been an overall reduction in the harvesting and subsequent consumption and use of traditional resources. This has had serious effects on community wellbeing including physical, social, and cultural impacts on Swan River First Nation members.

Physical

A decline in the consumption of traditional foods like moose meat, fish, rabbit, and grouse has led to increased consumption of processed, store bought meat such as hot dogs, fish sticks, and chicken nuggets. Domesticated meats are often high in fat and low in nutrition when compared to wild meat but may also contain additives such as preservatives or growth hormones. Where moose meat contains 1% fat, beef, poultry, and pork contain 12-

45% fat (MRHS 1995). A decline in traditional food use has also led to increased consumption of processed carbohydrates like white bread, macaroni, and instant noodles and refined sugars in sodas and candy. This dietary shift has in turn led to an increase in heart disease, type II diabetes, and childhood obesity (Van Oostdam et al. 2005). One Swan River First Nation Elder discusses this phenomena, "*Because a long time ago there was hardly any sickness. And the meat was good and rich and we had lots of that. That's all we had to have*" (#13D).

Social

The decline in traditional food consumption has also had serious social impacts. Socializing and reinforcing of kinship bonds during berry picking and hunting trips has disappeared. As stated by one Elder, "*That's why those saskatoons meant more than just Saskatoon berries. It meant them people coming to socialize and talk about their families*" (#5D). With healthy moose meat becoming more difficult to obtain, widespread sharing within the community has declined. Family and community ties and support systems have subsequently begun to dissolve. As stated by Nelson et al. "Subsistence harvesting remains one of the primary activities for actualizing kin relationships through shared activities...Kin relationships are maintained not only through the shared act of harvesting , but also through the distribution and consumption of country food" (2008:44).

Social problems can also be linked to declines in traditional food harvests. "Alcoholism, physical abuse, suicide, and a general feeling of anomie can be linked to the social vacuum that was created when subsistence harvesting and the seasonal round ceased to be an orienting focus of life" (Nelson et al. 2008:44).

Cultural

The cultural loss resulting from a decline in traditional food consumption has been significant. "Spending time in the bush together also serves to express a sacred worldview concerning human relationships to animals and the land, which binds people together on a level not experienced in other commonly shared activities" (Nelson at al. 2008). With the arena for this relationship no longer available, proper knowledge of how to interact with the

land and its resources is not shared with youth. The culture is also lost as youth are not taught how to make dry meat, prepare a moose hide, or set a snare by their Elders. These skills were critical to Cree survival for millennia and the only classroom in which these skills can be learnt disappears when these resources are no longer harvested. The health of the language, a vital component of culture, also suffers when it is separated from the land and its resources as transmission of many ideas and elements are made difficult if not impossible to convey. The language is based on the land and its resources and may be incomprehensible when out of context.

A lack of cultural resources on hand in the freezer, pantry, and shed has negative cultural impacts. The lack of moose meat means that special cultural dishes cannot be made[6]. An absence of moose meat also means there is no hide for moccasins and no organ meat and moose nose for funeral wakes. No rat root and mint means no medicine when someone has a cold and no berries means no feast after the sweat lodge. A lack of cultural resources means no fungus for the smudge and no feathers for the pow wow costume. Cree culture has been described by the Cree as based on the land and its resources, without the plants and animals there are no Cree people. By not having access to a land base containing healthy and plentiful resources the Cree are denied access to their culture. In these terms declining access to their traditional territory not only infringes on Treaty Rights but infringes on their ability to be Cree. A Muslim needs their Mosque, a Jew their Synagogue, and the Cree need the land. The health of the land is a reflection of the health of the Cree and vice versa.

Turner et al (2008) describes these physical, social, and cultural impacts as invisible loses that are not widely recognized or accounted for in decisions about resource planning and decision making in resource- and land-use negotiations. They define eight types of invisible losses that are often overlapping and cumulative: cultural/lifestyle losses, loss of identity, health losses, loss of self-determination and influence, emotional and psychological losses,

[6] Imagine how a Chinese restaurant would keep running if they were constantly facing a rice shortage.

loss of order in the world, knowledge loss, and indirect economic losses and lost opportunities.

Food Advisories in Swan River First Nation Traditional Territory

As a result of the release from the ASWTC a study was conducted in 1997 by Health Canada that stated the following: "the results of wild game testing...indicated elevated levels of PCBs, dioxins and furans in game surrounding the treatment centre". Due to these findings there was a public health advisory recommending the following:

Wild Game

- limit eating wild game from within a 30km radius of the Swan Hills Treatment Centre to 13 ounces (370 grams) per month;
- avoid eating organ meat (liver, kidneys) or using fat from wild game harvested within a 30km radius of the treatment centre;
- pregnant or breastfeeding women should avoid eating wild game taken from with a 30km radius of the treatment centre; and
- young children should avoid eating wild game taken from within a 30km radius of the treatment centre.

Fish

- limit eating fish taken from within a 20km radius of the Alberta Special Waste Treatment Centre to 6 oz (170 grams) per week or less;
- avoid eating fish organs or fish eggs taken from lakes within the 20km radius;
- avoid eating fish from lakes within the 20km radius if pregnant or breastfeeding; and
- young children should avoid eating fish from with the 20km radius (Alberta Health and Wellness 1997).

As discussed in the previous section, declines in subsistence harvesting can have negative physical, social, and cultural implications. As a result, impacts of advisories from Health Canada have been catastrophic to the people of Swan River First Nation. Following the

advisories, out of fear many people either drastically reduced their consumption of wild game and fish or stopped eating it all together. Advisories related to organ meat had a special impact because organ meat such as the heart was an important ceremonial meal consumed at funeral wakes. As described by one Swan River First Nation Elder, "*Eating moose organs was healthy but now no one takes the chance*" (#21D). Advisories focusing on young children led many youth to grow up on less nutritious store bought food, and not develop a palate for traditional foods. The question thus becomes: What would have had a more detrimental effect of Swan River First Nation community wellbeing? 1- consuming wild game and fish within a 30km radius of the ASWTC or 2- the food advisory?

Swan River First Nation Collaborative Environmental Contaminants Study

Since the release of contaminants from the ASWTC and the subsequent food advisory, a large amount of funding has been spent on contaminant studies in the Swan Hills area in partnership with the Lesser Slave Lake Indian Regional Council. Despite these efforts, fear about contamination of traditional resources continues to be one of the most serious concerns stopping many Swan River First Nation members from practicing their Treaty Rights to hunt, fish, trap, and gather. This is largely due to the fact that (despite involving First Nations) studies done to date have been based on western science to the exclusion of traditional knowledge and results have not been effectively shared with the membership of Swan River First Nation.

To address this issue, a study methodology was composed that included an intergenerational Swan River First Nation steering committee (traditional knowledge holders) as well as a human health consultant from Stantec and me as the principal investigator (western scientists). This program was awarded funding from the National First Nations Environmental Contaminants Program from 2009-2010 and from the Regional First Nations Environmental Contaminants Program from 2010-2011. Each study contained various stages including: initial scoping meetings, traditional knowledge collection, fieldwork, laboratory testing, analysis of results, preparation of plain language summaries and consultant reports, and community meetings to present results.

The 2009-2010 study focused on identifying metal levels in and safe consumption quantities of a number of key plant resources including blueberries (berry), rat root (root), and Labrador tea (leaves). The 2010-2011 study focused on low bush cranberries (berry) as well as the fresh leaves, tea made from dried leaves, and spent leaves after they had been used to make tea of Labrador tea and mint. In 2010-2011 traditionally used water sources were tested for routine potability, chlorinated organics (PCBs and pesticides) as well as bacteriological parameters. Both studies began with youth interviewing Elders to record areas where the above mentioned plants were harvested as well as information on consumption quantities and collection, preparation, and usage procedures. Using western science collection protocols, plant and water samples were taken from various traditional use sites throughout Swan River First Nation's territory including the Swan Hills and south shore of Lesser Slave Lake. Samples were analyzed at laboratories in Edmonton and risk assessments were completed by a human health consultant. Reports and plain language summaries were prepared by Stantec (2010 and 2011). Results of the studies are presented below.

The metals included for study were those for which there exists a tolerable daily intake (TDI) standard. Other metals which are either essential nutrients, considered non-toxic or for which there is no TDI were not included in the study. When the calculations of the daily metal exposures from consumption of the traditional vegetation were compared to the safe levels they showed that consumption in the quantities detailed by the Elders does not cause a health risk for the First Nations and that the metal levels corresponded to background or unimpacted levels. The sources of metals emissions in the area include oil and gas exploration and production and associated road and facility development, vehicle emissions, and the ASWTC.

All water samples tested as part of the 2010-2011 study contained levels of chlorinated organics that were below the level of analytical detection. Samples also met all requirements of the routine potability testing that were applicable for raw surface water. However, every sample tested positive in bacteriological analysis for both coliform and *E. coli*.

Possible sources of bacteria in the water include livestock feces along the lakeshore and wildlife feces or human sewage in the Swan Hills. Elders describe how they drank water from both the Swan Hills and the Lesser Slave Lake in the past and did not get sick (drinking the water presently would result in diareahea). They feel that an environmental change has occurred in the Swan Hills that has led to the bacteria in the water. Some Elders feel that this is due to the vast amount of clear cutting that has led to more run off. Others suspect that human sewage from industrial workers may be being released into the water. Others believe that clear cutting is concentrating wildlife along waterways (as forestry is required to leave a buffer around riparian areas) thus leading to increased wildlife feces in the water. Currently all water from the areas sampled must be boiled prior to consumption.

Aboriginal Consultation in Alberta

As demonstrated by the severe environmental impacts to Swan River First Nation's traditional territory as outlined in the previous section, Swan River First Nation's ability to practice their Treaty Rights are infringed upon in a number of ways. This infringement is largely in the form of a decline in the quality and quantity of traditional resources including water, wildlife, fish, and vegetation limiting their ability to hunt, fish, trap, and gather. These declines are believed to be mainly caused by impacts from the following sources: ASWTC, forestry, oil and gas, transmission and transportation corridors, agriculture, and tourism. However, based on recent court decisions as discussed below, the province of Alberta now has the fiduciary duty to consult First Nations when proposed projects may infringe their Treaty Rights. The concept of Aboriginal consultation in Alberta is relatively new and existing provincial policies and guidelines are imperfect and have twice been rejected by the Treaty Chiefs of Alberta. In response to these inadequacies many nations have written their own consultation policies and guidelines.

The section below discusses the *present* context and issues associated with Aboriginal Consultation in Alberta with regards to assessing infringements to Treaty Rights from resource development. This includes an overview of relevant legislation and case law,

recent court cases, as well as federal, provincial, and Treaty 8 consultation guidelines and policies.

Legislation and Case Law Relevant to Consultation in Canada

Canada has a fiduciary obligation with respect to Indians and lands reserved for Indians under section 91(24) of the Constitution, 1982. "Jurisprudence relating to the Fiduciary Duty of the Crown to Aboriginal People has asserted that the Crown will be held to a high standard of honourable dealing when it exercises legislative or discretionary powers in a manner, which affects Aboriginal land and resources. Consultation is seen as a method to accommodate this duty with the understanding that consultation will, in certain circumstances require that First Nations be involved in the Crown's decision-making process relating to land and resource use and that such consultation may require that the Crown not proceed with a decision or action without consent of the First Nation(s) affected" (FMA 2006:24).

Federal Legislation

Treaty 8

Treaty 8 contains a clause purporting to be a surrender of Aboriginal rights and title as well as a hunting clause confirming the rights of the signatories to the treaties to continue their hunting rights throughout the tract surrendered:

> *And Her Majesty the Queen HEREBY AGREES with the said Indians that they shall have the right to pursue their usual vocations of hunting, trapping and fishing throughout the tract surrendered as heretofore described, subject to such regulations as may from time be made by the Government of the country, setting under the authority of Her Majesty, and saving and expecting such tracts as may be required or taken up from time to time for settlement, mining, lumbering, trading or other purposes.*

The Constitution Act

The Constitution Act (1867) was amended in 1982 to recognize and affirm existing Aboriginal and Treaty Rights in Section 35.

> *The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed. In order to secure to the Indians of the Province*

> *the continuance of the supply of game and fish for their support and subsistence, Canada agrees that the laws respecting game in force in the Province from time to time shall apply to the Indians within the boundaries thereof, provided, however, that the said Indian shall have the right, which the Province hereby assures to them, of hunting, trapping and fishing game and birds for food at all seasons of the year on all unoccupied Crown lands and on any other lands to which the said Indians may have the right to access.*

Natural Resource Transfer Act

In 1930, the Federal Government transferred control and ownership of crown lands and natural resources to the three Prairie provinces under the Natural Resources Transfer Agreements (NRTAs). Through the NRTAs, the provinces assumed a constitutional obligation to fulfill treaty commitments.

Provincial Legislation

Contemporary Treaty Rights in Alberta

The Supreme Court has recently established that Treaty Rights exist to this day [R. v. Horseman (1990), R. v. Badger (1996)]. The treaties must be interpreted in the way they were understood by Aboriginal signatories based not only on the written treaty but also on oral promises made by Treaty Commissioners at the time of the signing. The provincial government thereby has a fiduciary responsibility to Aboriginal peoples when permitting resource development on Crown lands encompassed within the boundaries of Treaty 8. The Supreme Court ruled in R. v. Sparrow (1990) that: *the extent of legislative or regulatory impact on an existing aboriginal right may be scrutinized so as to ensure recognition and affirmation.*

The Supreme Court statement has four key implications:

1) The provincial government must accommodate Treaty Rights in the face of competing land and resource users.
2) Resource development cannot be allowed to impair the lands and resources upon which First Nations people depend to such an extent that the Treaty Rights to hunt, trap, and fish for subsistence can no longer be exercised.
3) The provincial government must consult in a timely and meaningful fashion with First Nations who are potentially affected by competing land and resource use.

4) If the above conditions are not met and Treaty Rights are infringed upon, the resource development process must provide for compensation (Ross 2003).

Case Law

The following case law has helped define the principles that inform what consultation looks like in Alberta.

Delgamuukw v.BC [1997]:

- the duty to consult always exists and will vary with the nature and scope of the circumstances of potential infringement of title

Mikisew Cree First Nation v. Canada [2001]:

- efforts to consult by the Crown regarding the construction of a winter road through Mikisew Cree First Nation traditional territory were inadequate

Haida Nation v. BC and Weyerhaeuser and Taku River Tlingit First Nation v. BC [2004]:

- asserted rights can trigger Crown consultation obligations
- scope of duty to consult is proportionate to a preliminary assessment of the strength of the case supporting the existence of the right or title, and to the seriousness of the potentially adverse effect upon the right or title
- the duty to consult rests with the Crown
- the crown can delegate the procedural aspects of consultation to third parties
- the Government can design and determine how Aboriginal consultation and accommodation should be carried out in relation to government decision-making
- the duty to accommodate rests with the Crown
- the consultation obligation extends from Tenure Granting through to permitting
- the duty to consult is not a fiduciary duty
- Crown and First Nations must consult in good faith (Olynyk 2005)

In *"Seeing Beyond the Trees: The Social Dimensions of Aboriginal Forest Management"* Statt (2008) outlines principles that inform the requirements of consultation in Alberta:

1. The Crown and First Nations must consult in good faith (*Delgamuukw v. B.C.*, S.C.R. 1010 [1997]; *Nunavik Inuit v. Canada* (Minister of Canadian Heritage), 4 C.N.L.R. 68 [1998]; *Mikisew Cree First Nations v. Canada* (Minister of Canadian Heritage), F.C.J. No. 1877 [2001]; *Haida Nation v. British Columbia* (Minister of Forests), SCJ No. 70 [2004])

2. The procedural safeguards of natural justice will apply to consultation (*Haida Nation v. British Columbia* (Minister of Forests), SCJ No. 70 [2004]; *Taku River Tlingit First Nation v. British Columbia* (Project Assessment Director), SCJ No. 69 [2004])

3. The "quality" of consultation is generally more important than the "quantity" of consultation, and in most instances consultation will amount to more than mere notification (*Halfway River First Nation v. British Columbia* (Ministry of Forests), 4 C.N.L.R. 45 (B.S.C.S.) [1997]; *Taku River Tlingit First Nation v. British Columbia* (Project Assessment Director), 2 C.N.L.R. 312 [2002]; *Cheslatta Carrier First Nation v. British Columbia*, No. 539 (B.C.C.A.) [2000])

4. The Crown must fully inform itself of the possible effects of its proposed actions and this should include input from First Nations (*R. v. Jack*, 131 D.L.R. (4th) 165 [1995])

5. Input from First Nations must be received with the intentions of substantially addressing concerns and a willingness to make changes based on information shared by First Nations (*Delgamuukw v. B.C.*, S.C.R. 1010 [1997]; *Halfway River First Nation v. British Columbia* (Ministry of Forests), B.C.J. No. 1880 (B.C.C.A.) [1999]; *Nunavik Inuit v. Canada* (Minister of Canadian Heritage), 4 C.N.L.R. 68 [1998]; *Haida Nation v. British Columbia* (Minister of Forests), SCJ No. 70 [2004]; *Taku River Tlingit First Nation v. British Columbia* (Project Assessment Director), SCJ No. 69 [2004])

6. Consultation does not equate to consent from First Nations, except in certain circumstances such as when the very existence of the rights might be jeopardized by proposed actions and the Crown is not generally under a duty to reach agreement (*R. v.*

Sampson, 131 D.L. $. (4th) 192 [1995]; *Delgamuukw v. B.C.*, S.C.R. 1010 [1997]; *Haida Nation v. British Columbia* (Minister of Forests), SCJ No. 70 [2004]; *Taku River Tlingit First Nation v. British Columbia* (Project Assessment Director), SCJ No. 69 [2004])

7. Adequate time to meaningfully consult First Nations must be allotted and rigid regulatory or legislative timelines may not excuse the Crown from this requirement (*R. v. Noel*, 4 C.N.L.R. 78, N.W.T. Terr. Ct. [1995])

8. First Nations cannot frustrate the consultation process, and must express their concerns and interests once they have had enough time to review information (*Halfway River First Nation v. British Columbia* (Ministry of Forests), B.C.J. No. 1880 (B.C.C.A.) [1999]; *Kelly Lake Cree Nation v. Canada* (Minister of Energy and Mines, B.C.J. No. 2471 [1999]; *Dene Tha' First Nation v. Alberta* (Energy and Utilities Board), 2005 ABCA 68)

9. First Nations may be entitled to a separate consultation process than that of the public or other stakeholders (*Mikisew Cree First Nations v. Canada* (Minister of Canadian Heritage), F.C.J. No. 1877 [2001]; *Halfway River First Nation v. British Columbia* (Ministry of Forests), 4 C.N.L.R. 45 (B.S.C.S.) [1997]

10. The Crown must provide full information to a First Nation whose rights may be potentially infringed by Crown actions, and this information may need to be more detailed than standard information provided to other stakeholders (*R. v. Jack*, 131 D.L.R. (4th) 165 [1995]; *R. v. Sampson*, 131 D.L. $. (4th) 192 [1995], *Halfway River First Nation v. British Columbia* (Ministry of Forests), B.C.J. No. 1880 (B.C.C.A.) [1999]; *Mikisew Cree First Nations v. Canada* (Minister of Canadian Heritage), F.C.J. No. 1877 [2001]

Recent Court Cases in Alberta

Beaver Lake First Nation

On May 14, 2008 Beaver Lake First Nation filed a suit against the Governments of Canada and Alberta asking the court to rule invalid the government authorization for thousands of petroleum projects in their traditional territory. The purpose of this case is to lay the foundation for a new legal regime governing resource extraction in the traditional territories of First Nations. If successful, Nations like Beaver Lake will begin to demand higher levels of accommodation and consultation from government and industry regarding oil and gas development (Sandborn 2008).

Chipewyan Prairie Dene First Nation

On June 4, 2008 Chipewyan Prairie Dene First Nation (CPDFN) filed legal action against the Alberta Government alleging a breach of Alberta's constitutional duty to consult with the First Nation on MEG Energy Corp.'s Christina Lake Regional Project, Phase 3. CPDFN would like a ruling that will require Alberta to hold meaningful consultation with them about the issuing of oil sands leases in their traditional territory. The case also raises the need, through consultation with CPDFN, for the following: regional land-use planning, proper cumulative impacts assessment, establishment of appropriate baseline data, measures to guide development and to ensure that CPDFN can exercise its rights now and in the future. "Alberta policy delegates legal responsibility for consultation with First Nations to oil and gas companies who have a clear conflict of interest in playing such a role. Not only does consultation take place after leases have already been awarded so that development is already mostly locked-in, but companies also have no control over the cumulative effects with other projects that infringe upon Aboriginal and Treaty Rights. Therefore, only governments can conduct meaningful consultation, and only when done early" (CPDFN 2008).

Athabasca Chipewyan First Nation

On December 10, 2008 Athabasca Chipewyan First Nation (ACFN) filed a court challenge to the Province's system of granting land tenure. ACFN argues that a series of oil sands permits the provincial government sold to Shell Canada and other companies are invalid. "(Alberta) breached the duty to consult the (Athabasca Chipewyan First Nation) by failing to consult the ACFN, adequately or at all, prior to granting the challenged tenures" (Chief

Allen Adam). The First Nation is asking the court to either revoke the permits or order the companies to stop further development until consultation has occurred. The Alberta government has long argued that, because no actual development occurs when an exploration permit is sold, no consultation is necessary (Tar Sands Watch 2008). ACFN lost this case in the provincial courts in October 2009 and in February 2011 the Alberta Court of Appeal sided with the lower court ruling. The nation is currently deciding if they will take the case to the Supreme Court of Canada.

Federal Action Plan

The Government of Canada recognizes that it has statutory, contractual and common-law obligations to consult with Aboriginal groups. Thus on November 2007, Canada launched the Action Plan on Aboriginal Consultation and Accommodation. This plan consists of the following elements:

- create a repository for information on location and nature of potential or established Aboriginal and Treaty Rights;
- establish mechanisms to coordinate and monitor government-wide consultation practices and accommodation precedents;
- develop policy positions to address many legal and policy gaps and engage with Aboriginal groups on elements of such a policy;
- meet with provinces, territories and industry groups to discuss elements of the policy;
- release interim guidelines to officials, provide related training; and
- set up a small Interdepartmental Team to implement the Action Plan.

This plan is based on the following legal principles regarding consultation: honour the Crown, reasonableness, meaningful consultation, good faith, and responsiveness. It also follows the following principles from practice: mutual respect, accessibility and inclusiveness, openness and transparency, efficiency, and timeliness (INAC 2007). The Federal Action has Plan has to date had no influence on consultation in Alberta.

Alberta Policy and Guidelines

On May 16, 2005 the Government of Alberta (Alberta) adopted the *Government of Alberta's First Nations Consultation Policy on Land Management and Resource Development* (Policy). In the Policy, Alberta makes the commitment to consult with First Nations where land management and resource development have the potential to adversely impact First Nations rights and traditional uses of Crown lands (Rights and Traditional Uses). On September 1, 2006 (and then updated in November 14, 2007) the Government of Alberta put forth the *Government of Alberta's First Nations Consultation Guidelines on Land Management and Resource Development.* It was recognized that Alberta had the legal duty to consult, that some aspects are delegated to industry, and that the Crown will review consultation and approve or deny project applications. Both the 2006 and 2007 policies were rejected by chiefs from Treaties 6, 7, and 8 largely because the chiefs felt they were not adequately consulted on the creation of the policies (Government of Alberta 2007b).

The policy recognizes the legal duty to consult and sets out principles, it states that the potential for adverse impacts on rights and traditional uses will trigger the consultation process, it outlines the role and responsibilities of Alberta, Industry, and First Nations, and commits to consultation before decisions are made. In order to provide capacity for First Nations to deal with consultation requirements, Alberta funds two main programs. First is the First Nations consultation capacity investment program designed with the goal of all Alberta First Nations having a functional consultation office. The second was the traditional use studies (TUS) initiative that was structured to function to support consultation by allowing First Nations to consider their data in consultation activities. TUS are no longer being funded by the Province due to government cut backs.

The Government of Alberta has outlined the following challenges to consultation: capacity of all parties to engage in the consultation process, timelines for consultation, who to consult, consistency in Government of Alberta decision-making, and defining the appropriate amount of consultation for the relative impact (Government of Alberta 2009). This policy is currently under review with input being sought from industry and First Nations.

Treaty 8 First Nations of Alberta Policy and Guidelines

Prior to Alberta's release of their consultation policy, Treaty 8 First Nations of Alberta released the following statement: "Alberta has the legal duty to consult with Treaty 8 First Nations in Alberta governments where any development on Crown land may impact the asserted rights or interests of Treaty 8 First Nations in Alberta arising from the legal duty that arises whenever the Crown knows or has constructive knowledge of an Aboriginal right and title, and is considering conduct that might adversely affect it" (Treaty 8 First Nations of Alberta 2005). Treaty 8 First Nations basic consultation guidelines include the following elements: acknowledgment of rights, provision of information, capacity-building, two-way process, avoiding impacts, minimizing unavoidable impacts, priority of First Nations' interests, fair compensation, First Nations involvement and benefit-sharing, dispute resolution process, mitigation, accommodation and compensation (MAC) plan, timing and consequences (Treaty 8 First Nations of Alberta 2005).

On September 30th, 2010 the Treaty 8 First Nations of Alberta sent a position paper on consultation to Premier Stelmach and Prime Minister Harper. In appendix A of this paper they outline their general concerns with Alberta's approach to consultation:

1. Alberta has too narrow a view of First Nations' rights
2. Alberta's approach to consultation lacks precision
3. There are no standards against which to assess consultation and accommodation
4. Alberta had failed to recognize and implement the Duty to Accommodate
5. Alberta delegates substantive aspects of project specific consultation to industry
6. Environmental Assessments and similar processes are developed without the participation of First Nations
7. Consultation must be structured on a government-to-government basis
8. The capacity to consult is a persistent hindrance to meaningful consultation
9. There is a general lack of clarity regarding what role First Nations input should have
10. Consultation occurs on a project-by-project basis, devoid of critical information about cumulative impacts on First Nations' rights
11. Consultation rarely, if ever, occurs at the strategic planning stage

12. There is a Duty to Consult in relation to Private Lands
13. The Duty to Consult and Accommodate applies to decisions that affect Reserve Lands
14. Municipal decisions and actions can impact First Nations' rights
15. Alberta has an obligation to be forthright about consultation
16. Alberta must be flexible and conduct itself honourably with respect to Traditional Territories and Traditional Knowledge

Swan River First Nation has their own Consultation Policy and Guidelines including the following sections: purpose, general principles, guidelines, roles and responsibilities, and process. Much of the content in chapter 7, including the culturally sustaining land use plan, will serve to augment future versions of their existing consultation guidelines. Currently the GoA does not require that industry or themselves adhere to the consultation guidelines established by individual nations.

Issues with Aboriginal Consultation in Alberta

An entire dissertation could be written on the topic of issues with Aboriginal consultation in Alberta. However, for the purpose of this section only practical issues relevant to Swan River First Nation will be discussed. This includes issues with capacity as well as the traditional use site specific and the project specific approach utilized by the Province.

A large issue faced by Swan River First Nation with regards to consultation is a lack of capacity. In order to participate in adequate consultation with all proponents in their territory Swan River First Nation needs more trained personnel. The workload is such that there could be a consultation director for each of the following areas: forestry, small scale oil and gas, large scale oil and gas, transportation and transmission corridors, government, and other developments (i.e., marinas, housing subdivisions, camp grounds). There is currently only one consultation director for Swan River First Nation.

Another issue is the traditional use site specific perspective taken by the Province. In the Province's approach, First Nations were directed to complete comprehensive traditional land use studies in order to document all of their traditional land use sites within their

traditional territory. Once completed, sites were to be handed over to Province who would put them in a traditional land use database. The Province then planned to manage First Nation consultation via a database that they would use to determine if a proponent needed to consults with a First Nation(s) regarding a proposed development.

There are several concerns with this approach. First, this approach is reliant on a First Nations community providing their traditional land use information to the Province which most First Nations communities are not willing to do. Many First Nations communities do not wish for the Province to have complete control over Aboriginal consultation and wish to manage this process themselves. Second, the entire concept of completing traditional land use studies is an unrealistic attempt by the Province to streamline consultation. The site specific concept of traditional land use runs counter to how First Nations people actually use the landscape and ignores the fact that land use is dynamic and adaptive. Ideally a nation would submit a very broad map of their traditional use patterns (i.e., map of their traditional territory) to the Province who would then require proponents operating within those boundaries to consult with the First Nation.

The Province's traditional use site specific approach is inadequate in that a supra-regulatory condition has emerged in some parts of the province between industry and First Nations peoples. What has occurred is that industry proponents consult with First Nations communities whose traditional territory they are working in regardless of if they have traditional land use sites recorded in the Province's system. This behaviour is evidence that the Province's policy and guidelines lag behind best practices and even case law. In this supra-regulatory process First Nations peoples have become the regulators and the Government of Alberta is being cut out of the process (Galbraith et al. 2007).

Probably the most important issue facing Swan River First Nation with regards to consultation is the project specific approach to consultation in Alberta. In the absence of regional land use plans or completed cumulative effects assessments consultation of specific projects takes places with too narrow of a perspective. The true impacts of a specific project on Treaty Rights (the actual purpose of consultation) cannot be assessed

until a baseline assessment of impacts to Treaty Rights at the scale of traditional territory has been completed.

CHAPTER 7. FUTURE LAND USE

Swan River First Nation Land Use Plans

Of utmost importance to Swan River First Nation is the ability to continue to practise their Treaty Rights to hunt, fish, trap, and gather now and into the future. However a documentation of current infringements, as presented in chapter 6, illustrates current impacts to these rights. The previous chapter also illuminated the inadequacies of the Province's Aboriginal consultation approach that is mandated with assessing and mitigating adverse impacts to rights. In light of present conditions in Alberta, including the Province's desire for regional land use planning, Swan River First Nation is establishing land use management plans designed to ensure their continued ability to practise their Treaty Rights to hunt, fish, trap, and gather into future.

Presented below is a model for two different types of land use plans designed to function at different geographic scales:

1. a culturally sustaining land use management plan for a core use area within Swan River First Nation's traditional territory based on constraints mapping using traditional knowledge and western science
2. a local land use plan for specific areas within Swan River First Nation's traditional territory based on identifying key resources and landscapes as delineated using Alberta Vegetation Inventory (AVI) data

Background

In December of 2008, the provincial government of Alberta released a document entitled "Land-use Framework". It states the following:

> "Alberta recognizes that those First Nations and Métis communities that hold constitutionally protected rights are uniquely positioned to inform land-use planning...the Government of Alberta will continue to meet Alberta's legal duty to consult aboriginal communities whose constitutionally protected rights under section 35 of the *Constitution Act, 1982 (Canada)* are potentially adversely impacted by development...Aboriginal peoples will be encouraged to participate in the development of the seven regional land-use plans" (Government of Alberta 2008:41).

It was based on these statements that Swan River First Nation embarked on the creation of their own culturally sustaining land use plan in hopes that it would play a key role in the land use planning process of their traditional territory and core areas within it (the Upper Athabasca zone) by the Government of Alberta. Swan River First Nation believes that all land use planning must ensure for the continued ability of First Nations peoples to exercise their constitutionally protected rights.

The section below outlines the methods and forms of information used when creating the culturally sustaining and local land use plan. The culturally sustaining plan includes quantitative spatial data from western science and traditional knowledge as well as qualitative information derived from discussions with band members regarding access, perception, and preference. The local land use plan is based on the identification of key resources and landscapes through traditional knowledge collection and the use of AVI data.

Culturally Sustaining Land Use Plan Approach

Quantitative Data

The polygons or zones on the culturally sustaining land use plan map were based on a combination of spatial data from both traditional knowledge and western science sources. The various quantitative data layers are outlined below:

- Traditional Knowledge
    1. Swan River First Nation traditional land use sites
    2. Ancestral/ archaeological sites

- Western Science
    1. ecologically sensitive and/or significant areas and rare plants, lichens, invertebrates, and ecological communities
    2. habitats containing species at risk (grizzly bears and woodland caribou)
    3. last intact stands of boreal forest
    4. 2010 industrial development footprint (oil and gas, forestry, agriculture, etc.)

Traditional Knowledge Layers

Most of the traditional land use sites were recorded through a 'traditional use study' done by Barry Hochstein from approximately 1999-2002. Some additional information comes from 8 interviews conducted with the use of the program 'TLU Tools' in 2009 by Duff Twin (see Figure 7.1). Ancestral (archaeological) site data was obtained by a request to the Government of Alberta's ministry of Culture and Community Spirit's Heritage Resource Management Branch. After submitting a map of the area of interest and signing a sharing agreement all shape files (a popular geospatial vector data format) and associated data were provided to Swan River First Nation by this ministry (see Figure 7.2).

Western Science Layers

Information on ecologically sensitive and/or significant areas and rare plants, lichens, invertebrates and ecological communities was provided by the Alberta Conservation Information Management Centre (ACIMS) after the signing of a sharing agreement (see Figure 7.3). Spatial data on habitats containing species at risk was provided by the High Prairie Sustainable Resources Development office (see Figure 7.4). Information on the last stands of intact boreal forest were provided by Global Forest Watch (see Figure 7.5).

Attempts to obtain the 2010 industry footprint for the study area were extremely frustrating as we did not receive support from various government ministries or industry. Oil and gas data (Digital Integrated Dispositions) was eventually purchased from AltaLis (see Figure 7.6). Forestry data is being acquired on a company by company basis and is not yet complete as the negotiation of sharing agreements has proved to be a lengthy and legal process. Air photos and satellite imagery are being obtained when possible.

Qualitative Information

In addition to the quantitative spatial data described above, the culturally sustaining land use plan also considered more qualitative information derived from interviews, small group sessions, and community meetings with Swan River First Nation band members. This research has shown that today Swan River First Nation members are facing an ecologically

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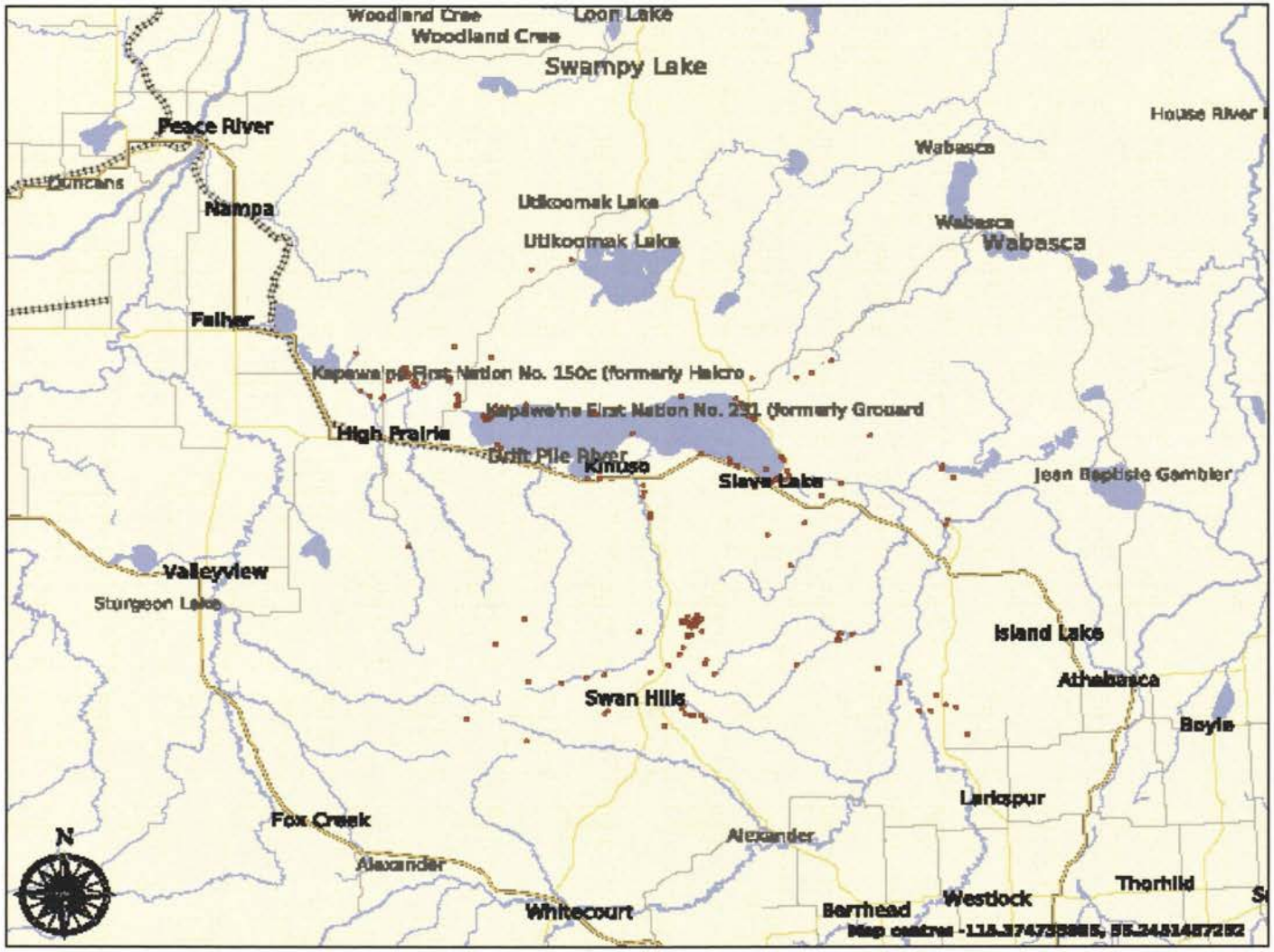
Contact Swan River First Nation Chief and Council for Figure 7.1

Figure 7.2 Ancestral Sites in the Lesser Slave Lake Area



Swan River First Nation

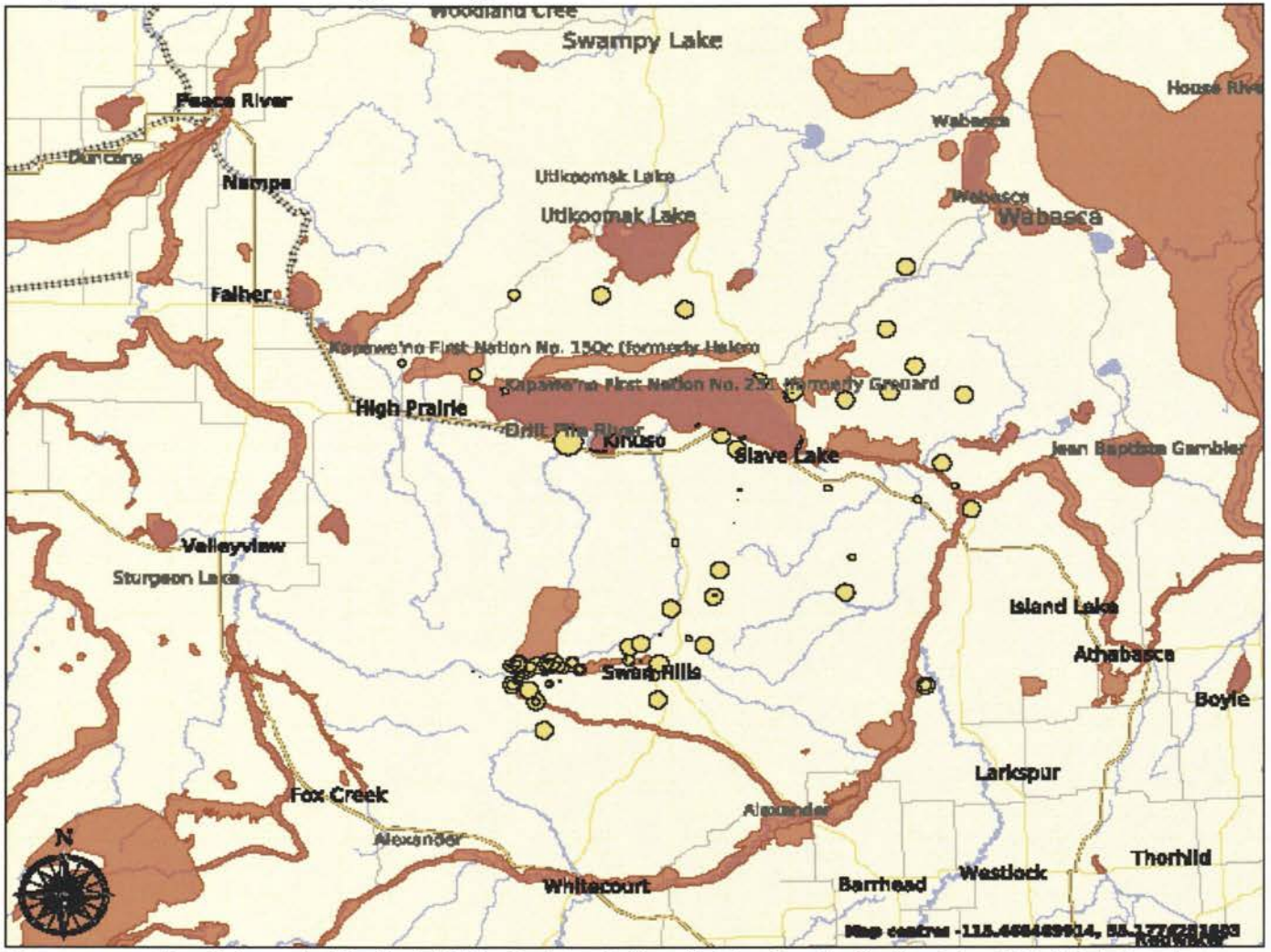
Legend

Archaeological Sites

SpatialQ

www.spatialq.com

Figure 7.3 Ecologically Sensitive and Rare Areas



Swan River First Nation

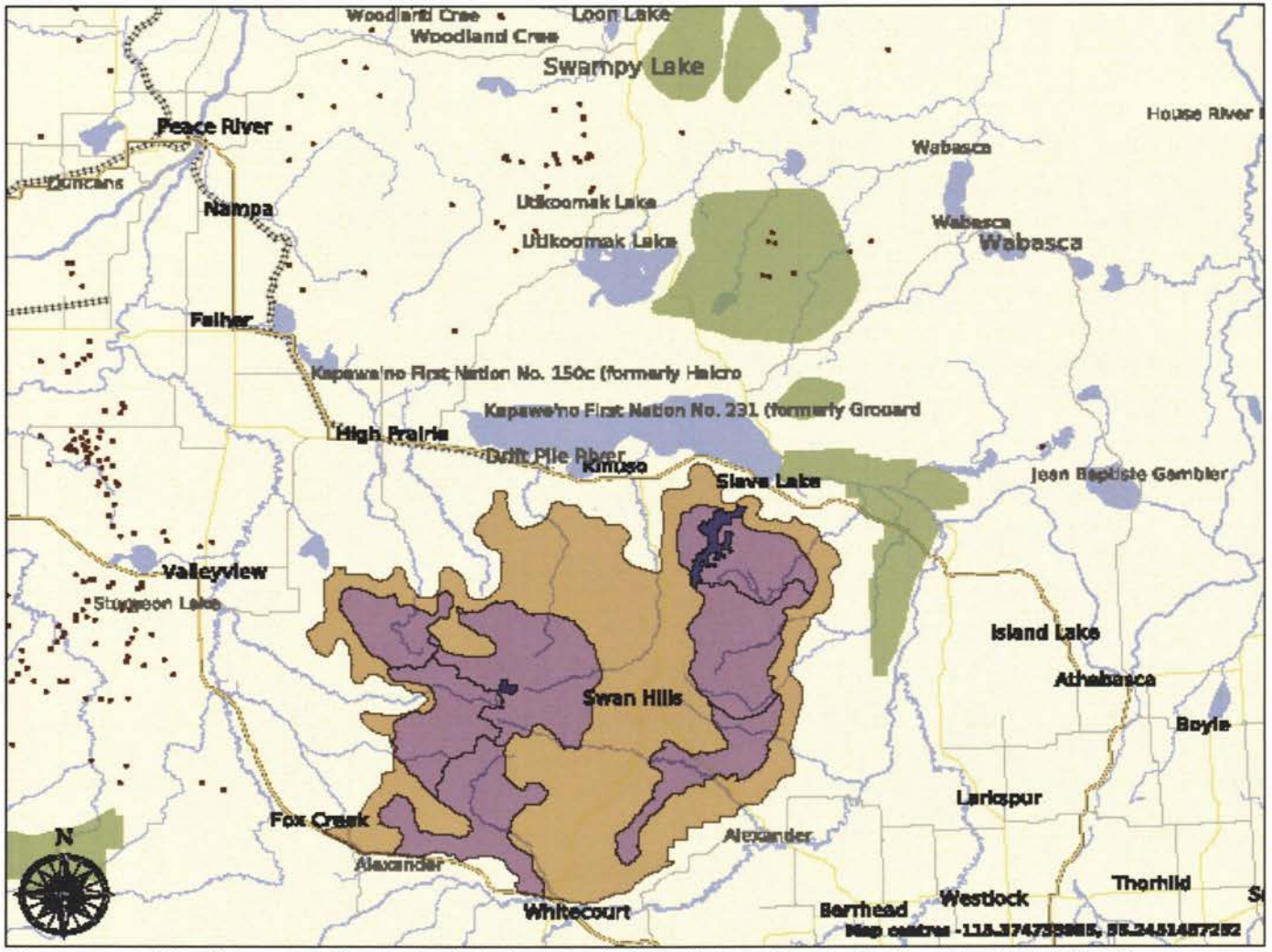
Legend

- Environmentally Sensitive Areas (Provincial)
- Rare Plants, Lichens, Invertebrate and Ecological Communities

SpatialQ

www.spatialq.com

Figure 7.4 Species at Risk in the Lesser Slave Lake Area



Swan River First Nation

Legend

- Woodland Caribou Habitat
- Trumpter Swan Habitat
- Core Grizzly Habitat
- Protected Grizzly Habitat
- Secondary Grizzly Habitat

SpatialQ

Figure 7.5 Last Stands of Intact Boreal Forest

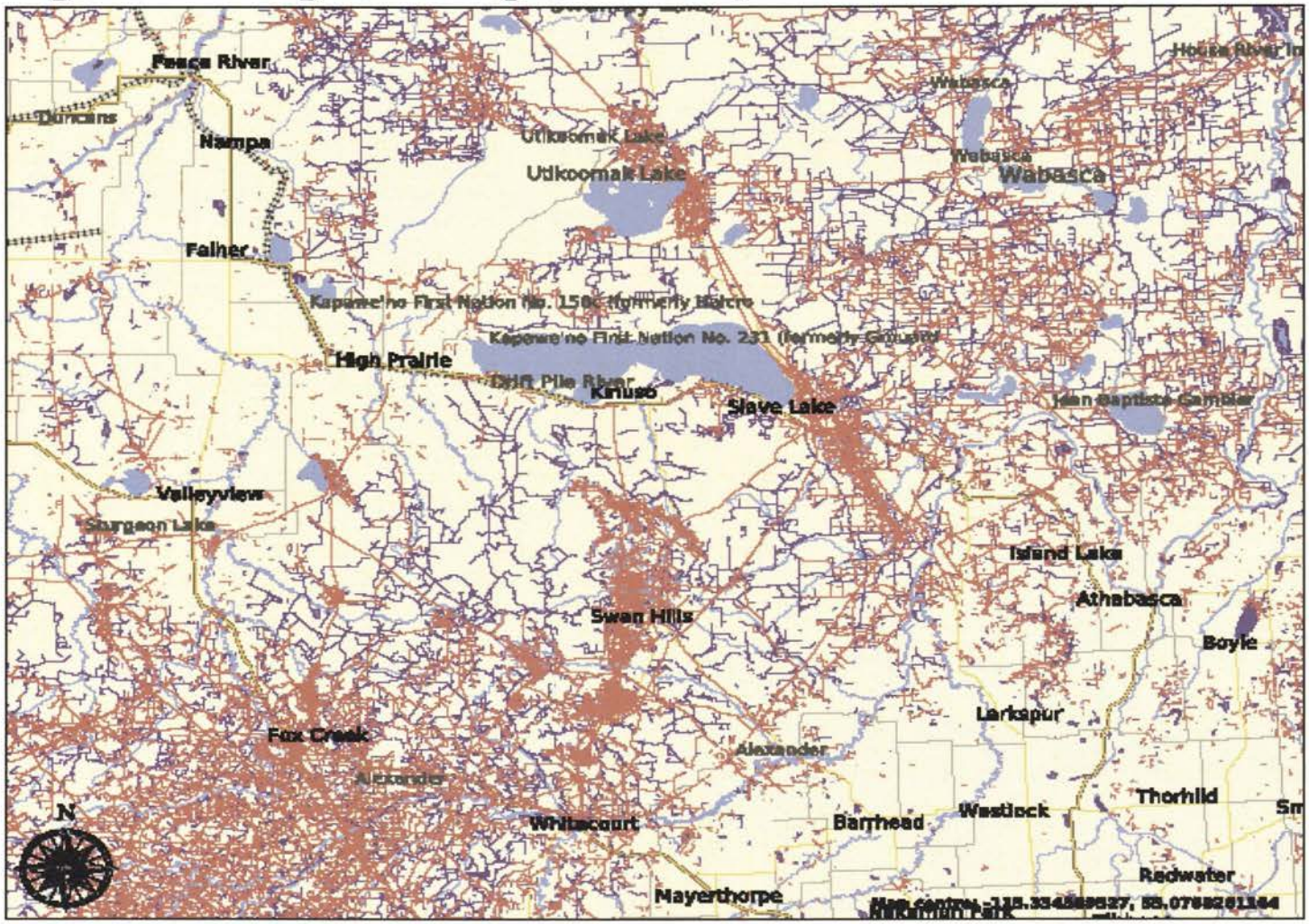
Swan River First Nation

Legend

Alberta's Forest Landscape Fragments: A Second Approximation

SpatialQ

Figure 7.6 Digital Integrated Dispositions



Swan River First Nation

Legend

- AB_HIST_PLA
- AB_HIST_LOC
- AB_HIST_MSL
- AB_APPL_MSL
- AB_APPL_LOC
- AB_APPL_PLA

SpatialQ

unhealthy territory and equally unhealthy socio-cultural and economic conditions on reserves. Unemployment and poverty levels are high and substance abuse is prevalent. This is the reality facing the youth of tomorrow in Swan River First Nation.

Qualitative information was utilized in this land use plan to ensure that socio-cultural and economic factors that constitute infringements to rights are also considered. In this study such factors are considered in the follow forms:

- access
- perception
- preference

Access: Decreased and increased access to traditional use areas are often a result of industrial development. Decreased access does not allow Swan River First Nation members into areas previously used for traditional purposes. Such restrictions to accessing traditional lands have forced many Swan River First Nation members to have to travel further to access resources and landscapes. This requirement for travel has led to the necessity of vehicles and fuel. These costs are prohibitive to some land users. Alternatively, increased access can lead to competition over resources and land use with non-First Nations peoples.

This land use plan will consider the time and equipment required to access traditional use preserves and will include areas that range in access from car and foot, to 4X4 truck, to boat and All Terrain Vehicle (ATV). A plan for how to discourage land use competition from Non-Aboriginal land users on traditional use preserves should be considered in the near future. This approach should not be considered discriminatory to non-Aboriginal land users but rather is guided by upholding Aboriginal and Treaty rights entrenched in section 35 of the Constitution.

Perception: Despite reassurances from western science conducted by industry regarding the integrity of a landscape and its resources, First Nation members may perceive an area as no longer suitable for use. The perception of an area as un-clean or inappropriate for use may be a result of impacts to sense of place evaluated from a holistic perspective. For

example, aesthetics (power lines in the distance), background noise (traffic from a distant road), and smell (a multitude of industry sources causing odours exist in the region) may render some areas unusable to First Nations. Suitable locations for ceremony or medicinal collection often require a sense of remoteness that is inhibited by signs of past, present, and future industrial disturbance.

Preference: Industry often thinks that opening up access to new resource areas is mitigation for the destruction of previously used harvesting areas. This is not a fair assessment. First Nations peoples cannot be viewed as foragers that exploit resource use areas simply because they exist. Instead they have preferences regarding where they harvest that may be linked to access, safety, perception, history, familiarity, proximity to other resource use areas and traditional land use sites. It is often not solely the existence of a resource that draws people to utilize an area for harvest. Rather, there are often a myriad of other aspects about the site that cause it to be selected for use. For example, does the site offer a nice view, is it close to a water source, does access to the site require interactions with industry or their roads, does the site have familial memories, is the site adjacent to a cabin or previous camp site. These are but a sample of the number of considerations taken into account when deciding where harvesting and other land use activities occur.

The category of preference must also acknowledge the influences that western culture has had on Swan River First Nation. Today many members participate in wage labour meaning that, for some, opportunities to practice their rights are now limited to evenings, weekends, and holidays. In addition, all school age children attend school Monday to Friday, September to June. Thus, preferred harvesting areas are often those accessible over the course of a weekend whereas areas requiring further travel may have to wait until 'days off' and summer holidays. Many land users may prefer to utilize vehicles, All Terrain Vehicles, and boats to practice their Aboriginal and Treaty Rights.

Guidelines for Creating the Map

Once the traditional knowledge and western science spatial data sets were overlaid on each other the following criteria were used as a guide to define the land use zones:

- Cultural: Does the area contain a high density of traditional land use and ancestral sites? Are access, perception, and preference of Swan River First Nation land users considered?
- Ecological: Is the area ecologically significant and intact based on western science data?
- Industrial: Does the area have a high level of industrial disturbance?

Land use zones were given the following designations for allowable activities:

- Moderate industrial activity
- Low industrial activity
- Zero tolerance for industrial activity (traditional use preserves)

Please note that although this culturally sustaining land use plan focuses on the establishment of polygons on the landscape, when asked what areas of their territory are most important Elders almost always answer as follows: "everywhere, everything is important". This is partly because the nature of the boreal forest is such that resources are dispersed across the landscape. Traditional Cree socio-cultural organization is adaptive to this environment where people survived in small, dispersed family groups (Smith 1981). In addition, Elders consider succession when thinking about their territories. A burn today may be a mature forest in 80 years. What is good berry or moose habitat today will likely not be good in the future as the composition of the forest changes as a result of succession. As such, a limited number of small traditional use preserves are not sufficient for Swan River First Nation members to practice their rights as they require the entirety of their territory. However, given the unchecked pace of development in Swan River First Nation's territory there has become an urgent need for land use zones. Such zones and are designed to appeal to a broad spectrum of the Swan River First Nation membership based on considerations including quantitative spatial data and qualitative data focused on access, perception, and preference.

Role of Site Visits

Currently most First Nations' consultation departments assess the impacts of a proposed project on their rights through a 'site visit'. These are important for ground truthing (confirming that sites recorded on maps exist on the ground) as most traditional land use data was collected within a band hall through the use of mark up maps and may have never been verified on the ground. However, it is difficult to fully consider impacts to Aboriginal and Treaty Rights from site specific assessments without reference to cumulative impacts assessed at the territorial level. The state of a Nation's ability to practice their rights within their larger territory must first be well understood before a Nation can begin to understand the impact of a single development on their rights.

Thus Swan River First Nation's culturally sustaining land use plan is based on the premise that infringements to Aboriginal and Treaty Rights can only be assessed on the regional scale. For many generations Swan River First Nation's livelihood practises have relied on the cyclical use of their traditional territory rather than the over exploitation of a limited number of traditional use sites. Swan River First Nation views landscapes as the smallest unit of measure within their traditional territory. Thus managing traditional land use on a site by site basis is incompatible with Swan River First Nation's perspective of the land. Unfortunately the Province's current consultation model is based on a traditional land use site specific approach. In this approach members are asked to assess the impact of a proposed project on their Aboriginal and Treaty Rights through site visits whereby the Nation is asked to record and document sites of concern to them such as old camps, bear dens, eagle's nests. Many proponents will attempt to mitigate a Nation's concerns and that is where the process ends.

The obvious issue with this approach is that the act of documenting traditional use sites in the area of a proposed project does not allow a Nation to assess the impact of a project on their rights. All that this process accomplishes is establishing a Nation's level of interest in an area. Although this is required to obtain standing or intervener status it does not allow them to understand an impact to their rights. The ability to obtain a complete understanding of impacts to rights can only be accomplished after an assessment of rights is completed on

a regional or territorial level. Swan River First Nation hopes to eventually accomplish this level of understanding via further land use planning.

This is not to say that site visits are obsolete. In fact they are an essential aspect of the consultation process once a territorial land use plan is in place. Site specific information, not previously recorded or ground truthed in a Nation's TUS data base, plays an important role in the process of understanding the impact of a project on rights but is unfortunately of much lesser value if these sites are not considered in the territorial context. For example, it is difficult to understand the impact to rights of the destruction of one salt lick without knowing something of the status of salt licks in the rest of the territory. Is the salt lick in question one of only 100 remaining in the territory or is it one of hundreds of thousands? What is the quality and quantity of moose and their habitat in the territory? These types of questions need to be answered before determining an impact of a project on rights.

Local Land Use Plan Approach

The local land use plan is at a smaller scale than the culturally sustaining land use plan and relies on Alberta Vegetation Inventory (AVI) data. This plan is based on identifying a series of ecosites associated with key resources and landscapes as defined through traditional knowledge research.

Ecosites of special significance were obtained through extensive research and interviewing with Swan River First Nation members. This research involved identifying cultural keystone species (Garibaldi and Turner 2004) for Swan River First Nation and then determining what ecosites are key to the health (reproduction and growth) of a species and are utilized for harvesting. The following resources were identified as key to Swan River First Nation:

- all water sources
- moose and fish
- mint, Labrador tea, and rat root
- blueberries and saskatoons
- diamond willow fungus

The following ecosites were linked to the above resources:

Table 7.1 Ecosites of Key Resources

Common Name	Latin Name	Cree Name	Habitat	Ecosite(s) (Beckingham and Archibald 1996)
Moose	*Alces alces*	*Moosey* (AINA 1999)		multiple
Fish (jackfish, whitefish, walleye)	*Esox lucius, Coregonus clupeaformis, Stizostedion vitreum*	*en kin o sehw atikameg oh gow* (AINA 1999)	rivers and lakes	multiple
Mint	*Mentha arvensis*	*amiskowehkuskwa* (Anderson 1982)	streambanks, lakeshores, wet meadows and clearings (Johnson et al. 1995)	all riparian ecosites
Labrador tea	*Ledum/ Rhododendron groenlandicum*	*muskekopukwa* (Anderson 1982)	bogs, swamps and moist woods (Johnson et al. 1995)	multiple
Rat root	*Acorus americanus*	*wachuskomechiwin/ wehkes* (Anderson 1982)	swamps, marshes and quiet water by streams (Johnson et al. 1995)	all riparian ecosites
Blueberries	*Vaccinium myrtilloides*	*enimina* (Anderson 1982)	gravelly or sandy soils in open forests (usually coniferous stands) and clearings (Johnson et al. 1995)	A-1

Saskatoons	*Amelanchier alnifolia*	*saskawatoomina* (Anderson 1982)	dry to moist forests, thickets and open hillsides on well-drained soils (Johnson et al. 1995)	multiple
Diamond willow fungus	*Trametes suaveolens*	*wiy(h)kimasiygan* (Marles et al. 2008)	Growing on diseased or dead willow stems around sloughs, lakes, riverbanks, swamps, or moist woods (Marles et al. 2008)	all riparian ecosites

Research also involved identifying key traditional activities to Swan River First Nation and then determining what ecosites these activities occurred in. The following activities were identified as key to Swan River First Nation:

- Camping
- Travelling on foot, horse, or ATV
- Holding ceremonies

Based on discussions with Swan River First Nation members regarding where these activities occur, the following ecosites or regions were linked to the above activities:

- Camping: high ground close to a water source (A-1 ecosite and adjacent to riparian areas)
- Travelling: along waterways, high ground and sandy ridges (adjacent to riparian areas and A-1 ecosite)
- Ceremonies: high altitude areas (e.g., summit of House Mt., Deer Mt., Grizzly Ridge)

In this model for local land use planning, ecosites containing key resources and landscapes are highlighted using AVI data. Alberta Vegetation Inventory (AVI) data is produced by

forestry companies at a considerable cost. To date we have only secured AVI data for a very small portion of Swan River First Nation's territory but hope to build the necessary relationships with forestry companies to soon obtain coverage for all of Swan River First Nation's traditional territory.

AVI data includes information such as the age of a stand, percentages of dominant tree species, and percentage of crown cover. This type of information (and other information contained within AVI) can immediately alert consultation staff regarding what type of resources or sites may be found in an area. Vegetation ecologists can work with consultation staff to create tables linking AVI data to potential areas of key interest to First Nations making the pre-screening process of consultation straight forward. This pre-screening is based largely on western science and must be coupled with traditional knowledge in the form of site visits. The pre-screening process can be used as a scoping stage to help consultation staff determine which traditional knowledge holder(s) may be most appropriate for a visit based on mobility and knowledge of certain resources or practices.

The following section operationalizes the two models for land use plans set out above. A culturally sustaining land use plan is created for a core use area within Swan River First Nation's larger traditional territory and includes a map of land use zones as well as consultation guidelines. In addition to the culturally sustaining land use plan, a smaller scale local land use plan based on AVI data is presented for areas where AVI data was available (directly to the south of Swan River I.R. 150E). This local land use plan serves as a case study for the application of AVI data and traditional knowledge to land use planning whereby key resources and landscapes are identified in a local area.

Culturally Sustaining Land Use Plan

Land Use Plan Map

The following map outlines Swan River First Nation's interim culturally sustaining land use plan as demonstrated by the series of polygons representing areas of zero and low development (see Figure 7.7). Areas of zero development are also termed traditional use

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Contact Swan River First Nation Chief and Council for Figure 7.7

preserves. It should be noted that this land use plan has not yet been ratified by Swan River First Nation Chief and Council and Elders and represents a 'first draft'.

Consultation Guidelines

Consultation guidelines that accompany the land use plan map were created and provide guidelines for:

- consultation requirements for proponents;
- conducting archaeological and environmental assessments in Swan River First Nation's traditional territory;
- mitigation of traditional use sites; and
- information requests from proponents.

Guidelines for Consultation Requirements for Proponents

The following guidelines include expectations for field visits and operating procedures for proponents in each of the land use zones.

- Moderate industrial activity
    - Proponents required to complete the Swan River First Nation cross cultural awareness course
    - Desktop review based on AVI data and GIS database completed by Swan River First Nation
    - Funding from proponent to complete a technical review of environmental assessments
    - Standard Swan River First Nation field visit required (e.g., one day with 2 land users and consultation unit staff)
    - Mitigation recommendations table to be adhered to
- Low industrial activity
    - Proponents required to complete the Swan River First Nation cross cultural awareness course
    - Desktop review based on AVI data and GIS database completed by Swan River First Nation

  - Funding from proponent to provide a technical review of environmental assessments
  - Funding from proponents for the creation of a Swan River First Nation environmental protection plan
  - More intensive Swan River First Nation field visit involving a greater portion of membership in both interviews, group meetings, and field visits
  - Mitigation recommendations table to be adhered to
  - Swan River First Nation monitoring during construction and involvement in reclamation
  - Proponent to commit to reclaiming areas of industrial abandonment elsewhere in the region
  - Intensive proponent consultation with the community
- Zero tolerance for industrial activity/traditional use preserve
  - High level political actions to be taken to avoid development in these areas
  - Swan River First Nation to be considered cultural stewards of these areas

Guidelines for Conducting Archaeological and Environmental Assessments in Swan River First Nation Territory

The following guidelines apply to any archaeological or environmental assessment work that occurs in low or medium zoned development areas within Swan River First Nation's land use plan area. A review of the main points of Swan River First Nation's 2007 Cultural Heritage Policy is highlighted before outlining additional guidelines related to the culturally sustaining land use plan.

In 2007 Swan River First Nation created their Cultural Heritage Policy containing an archaeological protocol, policy, and permitting system. The policy states:

> "The Swan River First Nation asserts sole proprietorship and stewardship over all heritage resources within its traditional territory. The cultural heritage resources found within the Swan River First Nation traditional territory represents the essence of culture for the Swan River First Nation. This policy establishes the process by which the Swan River First Nation exercises its jurisdiction over cultural heritage resources and protects Swan River First Nation title and rights in the face of

> competing laws... The Swan River First Nation has an inherent right and obligation to maintain and preserve a distinct cultural identity and way of life for both present and future generations. The Swan River First Nation have a right to determine the manner by which Swan River First Nation culture, heritage and spiritual traditions are identified, protected, preserved and interpreted."

Key points within the policy relevant to consulting archaeologists include the following:

- Swan River First Nation will be notified about all archaeological survey and mitigation occurring in our traditional territory
- at least two Swan River First Nation community members will be present in the form of monitors on all crews performing archaeological survey in our traditional use areas

Based on the culturally sustaining land use plan a number of additions will be made to Swan River First Nation's Cultural Heritage Policy including the following:

- a Swan River First Nation permit holder will accompany all consulting permit holders in archaeological work completed in Swan River First Nation's traditional territory
- consulting archaeologists will demonstrate how they considered Swan River First Nation's traditional knowledge in their survey strategy and interpretation of findings
- Swan River First Nation has the right to request archaeological assessment even when not required by Alberta Culture and Community Spirit (or other Ministries to which these responsibilities are transferred)
- proponents will pay for a technical review of all Heritage Resource Impact Assessments completed in Swan River First Nation traditional territory
- proponents and the Government of Alberta shall recognize that areas of zero development/ traditional use preserves were selected based on past, present, and future land use by Swan River First Nation and thus contain a heritage component; industrial development in these preserves will be likened to a disturbance of the ancestors

With regards to the meaningful involvement of Swan River First Nation members in environmental assessments, proponents will have to fulfill the following criteria:

- Two Swan River First Nation members to accompany every environmental assessment discipline study within Swan River First Nation's traditional territory
- Environmental assessments must demonstrate how the project considered Swan River First Nation traditional knowledge from study participants
- Environmental assessment results must be presented to the community in an understandable and meaningful format
- All results must be given to Swan River First Nation in paper and digital format including shape files for maps
- Proponents will pay for a technical review of all environmental assessments

In order to protect Swan River First Nation's traditional knowledge a sharing agreement and protocol must be signed between the proponent and the band before archaeologists and other consultants engaging in environmental assessments with Swan River First Nation members can collect and utilize their traditional knowledge.

Guidelines for Mitigation of Traditional Use Sites

During site visits, traditional use sites are often identified and recorded by Swan River First Nation. Mitigation for impacts to TUS sites (e.g., mineral licks, fresh water springs, graves, raptors nests, bear dens, prayer flags) are linked to the zoning designation of an area. In areas of moderate and low development the following guidelines are used by Swan River First Nation to help define appropriate mitigation measures. These should only be considered guidelines as mitigation for many sites needs to be determined on a site by site basis.

Table 7.2 Mitigation Guidelines for Traditional Use Sites

SIGNIFICANT PLACES TO SWAN RIVER FIRST NATION		
Site Type	**Importance**	**Suggested Mitigation**
CULTURAL SUSTAINING PLACES		
Animal dens	medium	avoidance, 100m buffer

Raptor nests	medium	avoidance, 100m buffer
Mineral licks	medium	avoidance, 100m buffer
Old growth forests	high	avoidance
Lakes, rivers, creeks, springs	high	100m setback from all riparian areas, monitoring during construction and all crossings
Hunting areas	medium	avoidance where possible
Trapping areas	medium	avoidance where possible
Fishing areas	medium	avoidance where possible
Camping areas	medium	avoidance where possible
Rare resources	high	100m buffer, monitoring during construction
ANCESTRAL PLACES		
Named Places	medium	Avoidance and 100m buffer
Trails	medium	Avoidance and 100m buffer
Hearths, boiling pits, cache sites	medium	Avoidance and 100m buffer
Campsites or Cabins	high	Avoidance and 100m buffer
Culturally Modified Trees	medium	Avoidance and 100m buffer
Lithic tools or detritus	medium	
Rock pictographs, cairns, or alignments	high	Avoidance and 100m buffer
Resource procurement area (hunting, fishing, harvesting, trapping site)	medium	Avoidance and 100m buffer
SACRED AND SPIRITUAL PLACES		
Burial sites	high	Avoidance and 500m buffer
Fasting/vision quest sites	high	Avoidance and 500m buffer

Ceremonial sites (e.g., sweat lodge)	high	Avoidance and 500m buffer
Prayer flags	high	Avoidance and 500m buffer

Guidelines for Information Requests from Proponents

For every project scheduled for development in areas zoned low to medium development the question should always be asked: "What impact will the proposed project have on Swan River First Nation's Aboriginal and Treaty Rights?". This question can be approached through the following questions that can be proposed to proponents and require responses.

1-Are the resources available to sustain Aboriginal and Treaty Rights? What are the impacts of the proposed project to these resources?

Moose

Moose are considered a key cultural species to Swan River First Nation. We wish for [the proponent] to provide Swan River First Nation with answers to the following questions:

- What impact will the project have on moose habitat within the local study area (LSA)?
- What is the current moose population in the LSA?
- What other work has been done to assess the impacts to moose in the LSA (e.g., impacts on migration patterns)?
- How will impacts to moose in the LSA be mitigated?
- Are there areas impacted by the project where moose are currently more disturbed than elsewhere?
- Do some areas need to be protected from further disturbance? If so, how and why?

- What is the current moose population in the region (Swan River First Nation's traditional territory)?
- What is the general health of moose in the region?
- What is the current level of disturbance to moose habitat in the region?

Plants and Medicine

Blueberries, low-bush cranberries, mint, rat root, and diamond willow fungus are considered key cultural species to Swan River First Nation. We wish for [the proponent] to provide Swan River First Nation with answers to the following questions:

- What impact will the project have on the ecosites home to the above species within the LSA?
- What is the current percentage of ecosites containing each of these populations within the LSA?
- What other work has been done to assess the impacts to these species in the LSA?
- How will impacts to these species in the LSA be mitigated?
- Are there areas impacted by the project where plants and medicine are currently more disturbed than elsewhere?
- Do some areas need to be protected from further disturbance? If so, how and why?

- What is the current percentage of ecosites containing each of these populations within the region (Swan River First Nation's traditional territory)?
- What is the general health of each of these species in the region?
- What is the current level of disturbance of ecosites containing each of these populations in the region?

Water

Clean and abundant water is a key cultural component to ensure survival of Swan River First Nation. We wish for [the proponent] to provide Swan River First Nation with answers to the following questions:

- What impact will the project have on water quality and quantity within the LSA?
- What is the current quality and quantity of water in the LSA?
- What other work has been done to assess the impacts to water in the LSA?
- How will impacts to water in the LSA be mitigated?
- Are there areas impacted by the project where water resources are currently more disturbed than elsewhere?

- Do some areas need to be protected from further disturbance? If so, how and why?

- What is the quality and quantity of water in the region (Swan River First Nation's traditional territory)?
- What is the current level of impact to water sources in the region?

Monitoring and Adaptive Management of Potential Impacts

- How will [the proponent] make sure that its predications turn out to be accurate, and what measures will it take if impacts on moose and other cultural key resources are more serious than anticipated?

2-Can and will people harvest the resources and utilize the landscapes? What are current infringements to the ability to utilize resources and landscapes that are necessary to sustain Aboriginal and Treaty Rights?

Even if healthy and abundant resources and landscapes exist in Swan River First Nation's traditional territory it does not always mean that members can or will practice their Aboriginal and Treaty Rights in these areas. A number of infringements to this ability exist currently and a proposed project may serve to further confound these issues. Such issues include access, perception, and preference.

We wish for [the proponent] to provide Swan River First Nation with answers to the following questions:

Access

- What policy will [the proponent] use to ensure that there is not increased competition and pressure (non-Aboriginal) on traditional resources during and after construction of the project as a result of new access created for the project?
- What policy will [the proponent] use to ensure that there are no infringements to access or other restrictions on Swan River First Nation use of the LSA during and after construction of the project?

- Are there areas impacted by the project where access is currently more developed and used by non-aboriginal land users than elsewhere?
- Do some areas need to be protected from further disturbance? If so, how and why?

- What percentage of the region (Swan River First Nation's traditional territory) is currently covered by roads and cutlines created by industry?
- What impact have these roads and cutlines had on wildlife mortality/habitat fragmentation, vegetation quality (dust, invasive species), and water quality and quantity and, by implication, on the use of traditional resources?

Perception

- What impacts in the form of noise and aesthetics will the project have on the LSA?
- How will these impacts be mitigated?
- Are there areas impacted by the project where remoteness is currently more disturbed than elsewhere?
- Do some areas need to be protected from further disturbance? If so, how and why?

- What is the percentage of industrial disturbance in the region (Swan River First Nation's traditional territory)? What percentage of industrial facilities and other equipment (pumpjacks etc.) exist on the landscape in the region? What percentage of the region is affected by noise?
- What percentage of the region represents areas that provide a sense of remoteness? (Sense of remoteness refers to the feeling of solitude or peacefulness that is necessary for many ceremonies and spiritual practises.)

Preference

- How many traditional land use sites are going to be impacted by the project?
- How are each of these going to be mitigated (in a general sense)?
- What are the remaining key hunting/trapping/harvesting/fishing areas, how do the potentially impacted lands rate relative to other areas for these purposes, what will the project mean for the overall ability of Swan River First Nation members to

engage in these activities, what areas are prime candidates for habitat enhancement measures (i.e., restoring environmentally degraded areas) as a mitigation

- Are there areas impacted by the project that are or have been used preferentially?
- Do these areas need to be protected from further disturbance? If so, how and why?

- How many traditional land use sites have been destroyed in the region (Swan River First Nation's traditional territory) since 1950? What percentage of land use sites does this represent? (Unfortunately, given the available data sets, these two questions are difficult to answer. However this question demonstrates to proponents that we do not have enough information to be able to make informed decisions with regards to impacts to rights).

The following digital information (shape files) should also be requested from a proponent:

- Project footprint
- Any available AVI, LIDAR, air photo, or satellite imagery of the proposed area of development
- Shape files results of all environmental assessments

Local Land Use Plan

Earlier in this chapter a number of key resources and landscapes for Swan River First Nation were defined that include water, moose, fish, blueberries, saskatoons, mint, Labrador tea, rat root, diamond willow fungus and areas for travel, camping, and ceremony. Based on this information a number of parameters were placed on data to create a map highlighting areas essential to these key resources and landscapes for Swan River First Nation (see Figure 7.8).

First a 100m buffer was highlighted around all small permanent, intermittent, and ephemeral water crossings (shown with a yellow hatch buffer on Figure 7.8) and a 1km buffer was highlighted around all large permanent water crossings and bodies (shown with a pink buffer on Figure 7.8). Alberta Land Cover Classification data was used to identify muskeg areas (80-wetland, 81-wetland treed, 82-wetland shrub, 83-wetland herb) and these

Figure 7.8 Key areas for Swan River to Practise their Rights

Swan River First Nation

1:80,368

Produced By SpatialQ
October 19, 2010
www.spatialq.com

Legend

- High Elevation Areas
- Large Perm and Waterbodies
- Small Perm, Intermittent, Ephemeral Streams
- Pine Leading Stands - 'A' Density Crown Closure
- West Fraser AVI Data

Elevation Gradient
Value

High : 1197

Low : 0

areas were also highlighted with a 100m buffer (shown with a yellow hatch buffer on Figure 7.8). These buffers served to not only capture the water itself but also to contain mint, rat root, diamond willow fungus and fish habitat and important feeding and calving areas for moose. Next AVI data was used to highlight all sandy and open pine areas (areas where the dominant tree species is pine with an A (6-30%) crown cover classification) representing blueberry habitat as well as key landscapes for travel and camping (shown as green polygons on Figure 7.8). It was determined that saskatoons and Labrador tea habitat was too ubiquitous to include in parameters for this case study. Areas of high altitude were highlighted using a relative scale where the highest 10% of an area was highlighted using a digital elevation model as these regions represent areas used in ceremony (shown with a red hatch buffer on Figure 7.8). The following map thus represents areas on the landscape that, based on traditional knowledge and GIS data, are key to Swan River First Nation's ability to practise their rights.

Future development footprints could be overlaid on such maps to provide Swan River First Nation consultation staff with an immediate idea of potential impacts of a project before a site visit even takes place. This approach could also be used to complete high resolution land use planning on a territorial scale if AVI data was available for all of Swan River First Nation's core use area. Ultimately, LIDAR data (when publicly available) could be used to provide an even more detailed land use planning and consultation tool.

Another area where this model for local land use planning could be utilized is in Aboriginal consultation with forestry. Forestry companies in Swan River First Nation's traditional territory are obligated to consult First Nations but refuse to pay for site visits. With no funding available for site visits, Swan River First Nation has not been able to be involved in a meaningful way in consultation. Using AVI data and the approach described above, Swan River First Nation would then begin to be able to comment on the impacts of forestry plans on their traditional use without conducting a site visit. It is hoped that forestry will soon begin to pay for site visits but in the interim a desktop approach to looking at impacts to traditional use is all that is financially feasible.

Future Work

The culturally sustaining and local land use plans presented above should only be considered interim as many years more effort must be put into interviewing and ground truthing activities with Swan River First Nation members to finalize these plans. In light of impending threats to Swan River First Nation rights from accelerating amounts of industrial development, this interim culturally sustaining land use plan aims to provide Swan River First Nation with an immediate and preliminary plan to manage their territory.

The following are important questions to be answered in the future:

- How do we deal with traditional territory overlap? How does our land use plan affect the other Lakeshore Bands and other Treaty 8 Nations? Can multiple First Nations collaborate in land use planning?
- How should we consider succession in plans based on AVI data?
- How much land is required for Swan River First Nation livelihood?
- What are allowable thresholds for other land users?
- What might a Treaty Rights Impact Assessment look like?
- How should impacts be assessed and measured? Can this be standardized?

CHAPTER 8. PRESENT LAND USE & ARCHAEOLOGY

Applications of Traditional Knowledge to Archaeology

The following section begins with a general overview of how traditional knowledge can be applied to research within the academic discipline of archaeology. This is followed by a comment on the specific relevance of Swan River First Nation traditional knowledge to the archaeological record of the Lesser Slave Lake area. Next, the traditional knowledge presented in the results chapter on past land use (chapter 5) will be used to demonstrate how traditional knowledge can contribute to ethnoarchaeological research including evaluating factoring impacting the archaeological signatures of subarctic hunter gatherer land and resource use. Finally, Alberta's Aboriginal consultation policy with regards to archaeology (heritage resources) is evaluated followed by a brief review of and comment on the policies of other provinces and territories in western and northern Canada.

Applications of Traditional Knowledge for Archaeology

Loring (1998) argues that non-native archaeologists cannot hope to understand the world of northern hunters as archaeological interpretation remains closely linked with lifestyles, subsistence and behavioural strategies similar to those that occurred in the past. Although traditional knowledge has played some role in archaeological interpretation in the boreal forest in the form of ethnography and oral tradition, there are countless applications of traditional knowledge to archaeology that have not been fully recognized. This may in part due to the fact that many archaeologists "like to keep archaeology dead" (David and Kramer 2001:31).

The most obvious application of traditional knowledge to archaeology is that it can offer an interpretation from an Aboriginal perspective. Traditional land use information can provide archaeologists with locations of historic sites and trails. Traditional ecological knowledge can be used to identify high potential sites for archaeological survey (e.g., caribou migration routes, salt licks, fish spawning areas, water sources, birch groves) that may correspond to archaeological sites. The following section discusses some specific applications of traditional knowledge to archaeology.

Oral History

Oral history provides a context in which archaeologists can interpret archaeological sites. Information on a group's past movement, divisions and interaction can help archaeologists assign affiliation to sites across the landscape and make inferences about the sharing of cultural traits. More recent oral history on wars and epidemics may allow archaeological sites to be matched up with known events. Oral history, such as stories that include information on social norms and practices, is useful to archaeologists who want to know how peoples lived in the past. Because of the antiquity of oral history, it often contains relevant information about past behaviour and material culture.

Material Culture

Material culture refers to traditional knowledge associated with how to construct and use many of the tangible items (tools and other physical objects) found in archaeological contexts (i.e., bone fleshers for hide working) and those that would have been present but may have long since disintegrated (i.e., birch bark baskets). Traditional knowledge holders also have much to share regarding interpretations of artifacts from ancestral (archaeological) sites. Material culture is broader than simply tools and includes all aspects of constructed items including clothing, housing, and non-secular items.

Site Structure

Traditional knowledge related to site structure includes information on the significance of space and the distribution of artifacts and features within a site. Traditional knowledge about site structure can be very useful to the archaeologist interested in how people in the past used space. Among a range of different site types, traditional knowledge holders can provide information on where specific activities took place, where certain aspects of material culture were kept, and how the space was utilized by different genders or ages.

Subsistence Strategy and Utilized Resources

Archaeologists have much to learn from traditional knowledge holders regarding what species were harvested and specific information such as the portion, age, and variety. Traditional knowledge can also provide insight into how resources were harvested and the material culture and social organization necessary. Traditional knowledge can provide

information on distance of resources use areas from habitation sites and sites related specifically to resource extraction. Traditional knowledge on seasonal rounds would provide information on group movement across the landscape and flexibility of subsistence strategies.

Resource Management Strategies

First Nations peoples often hold traditional knowledge about a landscape's carrying capacity, animal and plant habitat and reproductive strategies, and forest ecology. This traditional knowledge then informs resource management strategies such as group mobility, selective hunting, burning, damming, and specific plant harvesting techniques. Such traditional knowledge can do much to overturn the perspective of hunter gatherers as passive players who do not modify their landscape. In fact, their detailed knowledge has allowed hunter gatherer societies to play a very active role in the productivity of their surroundings. For additional information on traditional knowledge and resource management strategies in the boreal forest please see the following: Lewis (1982), Parlee et al (2006), Berkes (2008), and Millar and Davidson-Hunt (2010).

Gender and Age

Traditional knowledge can help archaeologists link gender and age with specific resources, material culture, and use of space in the archaeological record. This is extremely valuable to the archaeologist who seeks to recognize gender roles and activities and age grades in the archaeological record. An example of how traditional knowledge about gender and age has informed archaeological patterning of land use can be found on the section entitled 'spatial organization of hunting by gender' in this chapter.

Worldview and Language

Traditional knowledge about worldview can help an archaeologist attempt to understand the religious and social beliefs that structure behaviour. In order to make assertions about why people from the past behaved the way they did, archaeologists require information on how people in the past understood and interacted with the world around them. Whorf (1956) argues that worldviews grow out of the structures of language, and that long and

deeply held ideas are frozen into ways of thinking and speaking. Thus traditional knowledge embedded in language may extend further back in time than other sources of traditional knowledge and may provide information about past lifeways that some traditional knowledge holders no longer consciously recollect. See Table 2.1 Selected Plant Resources of the Lesser Slave Lake Region and Table 5.4 Place Names.

Relevance of Swan River First Nation Traditional Knowledge to Archaeology

Many archaeologists continue to question the relevance of a community's traditional knowledge to archaeological projects unless western science can provide proof of the direct relationship between the living descendents and the people who left archaeological remains on the landscape. Many archaeologists would assume that Cree peoples in the Lesser Slave Lake area are newcomers who have little to contribute to the interpretation of the late pre-contact archaeological record of the area likely left by Athabascan speaking peoples. However, the following section demonstrates the relevance of Swan River First Nation traditional knowledge to archaeology in the Lesser Slave Lake region.

Although the archaeological record of the Lesser Slave Lake region from 10,000 B.C. to 1,000 B.C. is extremely limited there is more robust archaeological evidence available for the late pre-contact period (1,000 B.C.- 500 A.D.). This period includes both an influence from the Plains in the form of side notched points and an influence from Athabascan culture to the northeast as indicated by projectile points related to the Taltheilei (ancestral Dene) tradition (Le Blanc 2003:142). A complete lack of pottery (Selkirk-Composite (Meyer and Russell 1987)) in the Lesser Slave Lake area during this period suggests the absence of northern Algonquians, the direct ancestors of the Cree (Le Blanc 2003: 143-144). It is not until the contact era (500 A.D.–present) that there appears to be a complex history on the Lesser Slave Lake region involving the Cree and Dene (Beaver and Slavey) (LeBlanc 2003: 144). Much of this complex history comes to light through the use of early explorer and fur trade accounts but is even more illuminated when wedded with traditional knowledge from Elders.

Aboriginal academic Neal McLeod (2000) discusses how a recent movement towards tribal specific nationalism has resulted in a tendency to ignore the multi-layered histories of various communities that speak Cree today. Cree culture has come to dominant communities that are in actual fact genetically heterogeneous. McLeod argues that this has occurred for a number of reasons including the use of Cree syllabics by the Church, the presentation of monolithic cultures by ethnographers, and a decline in mobility resulting from Treaties and reserves. In the concept of 'Creeness', linguistic homogeneity mistakenly assumes the discrete nature of ethnic groups.

It is only when ignoring their cultural and genetic diversity in favour of 'Creeness' that Swan River First Nation members might be described by some (e.g., archaeologists) as relative 'newcomers' to the Lesser Slave Lake area. When viewed as a diachronic mosaic of the Aboriginal peoples who occupied the south shore of Lesser Slave Lake their history suddenly extends much further back into the past. This is an important foundation to construct if traditional knowledge is to contribute to the archaeology of the region as an argument used by many archaeologists is that some modern day First Nations peoples (i.e., Swan River First Nation band members) have no tangible connection to the people who left the pre-contact archaeological remains. Some archaeologists would argue that Swan River First Nation members are thus in no better position to speak of the past than an archaeologist. By viewing Swan River First Nation members as a genetically and linguistically diverse people whose very existence embodies a lengthy piece of the pre-contact history of Aboriginal peoples on the south shore of Lesser Slave Lake[7], many researchers may suddenly view their traditional knowledge as having greater relevance.

Because there is so little archaeological research done in the Lesser Slave Lake region, it is difficult to assess how traditional knowledge collected from Swan River First Nation can immediately contribute to regional archaeological issues. It is unlikely that it can offer any dramatic paradigm shifts in an area so scarce of dogma to begin with. It can however, do exactly what David and Kramer view as the goal of ethnoarchaeology as alerting

[7] This is not to say that Swan River culture is the only culture that has ever been present in the area but rather that this culture represents a portion of the pre-contact period.

archaeologists to the diversity of living cultures (2001). Through examining this diversity of living culture, Swan River First Nation traditional knowledge can be used to evaluate some archaeological signatures of subarctic land and resource use.

Contributions to Subarctic Hunter Gatherer Research

In the section below, traditional knowledge collected from Swan River First Nation Elders is used to evaluate factoring impacting the archaeological signatures of subarctic hunter gatherer land and resource use.

Where to make dry meat?

As discussed by Jarvenpa and Brumbach (1997), the decision to process the meat from a hunt in the bush versus village has led to a major change in the formation of archaeological sites. Where bush centered processing would leave an archaeological signature in a temporary camp near the kill site, the village centered approach would cause all archaeological signatures to be found within the village. The shift from bush centered to village centered processing has been linked to a number of variables by Jarvenpa and Brumbach including: a woman's life cycle (1997), seasonality, proximity to a major settlement, transportation technology, sexual division of labour and ideational factors (1983).

In the quotes below the Elders of Swan River First Nation discuss the variables considered when deciding where to make dry meat after a kill. Options include making dry meat in a temporary camping site near the kill site (bush centered) or making dry meat back home on the reserve (village centered).

1-*"When my Dad and them got it, that's different... They used to go out hunting... We'd go out in the bush for so long until, so that's where they were, Mom and them whoever, my Dad and I guess whoever else that came along they worked on this moose eh. And then they made dry meat and that meat was dried up there. And when they come back we got our dry meat, our meat, and come home eh... But at least the dry meat was already done. Me, I make my dry meat right here... A long time ago, ya, that's what they did. They did everything up there. Now they get it, they bring the whole moose here"* (#19D).

2-*"With my grandparents we made dry meat* [in the Swan Hills]. *But mostly with my grandparents, but my uncles of course shot the moose and brought it back"* (#8D).

3-*"If someone got a moose... They'd stay out there in the bush for two or three days and do whatever they're gonna do. I remember as a child... going up into Swan Hills and coming back with moose meat and dry meat... Now they'd bring it home and they'd do it at home. They have the vehicles to do so. Because then they worked with horses and wagons"* (#10D).

4-*"Two or three days or until you got a moose and headed back... find a little creek and set up camp... Well, if we stayed a few days, like if we shot two or three moose we stay there and make dry meat. We had no refrigerators in them days so. Well if it's not too far we'd just wrap it up in the hide and bring it home"* (#17D).

5-*"Sometimes we'd make it* [dry meat], *if we stayed long enough we'd make it out there. But other times he'd bring it to my grandmother and she made it"* (#7D).

Quotes one and two illustrate how the generational composition of a group affects if dry meat is made in the 'bush' or the 'village'. Where older people would make dry meat in the 'bush' the younger generation chooses to bring it back to the 'village'. The third quote describes how accessibility to vehicles influences decisions on where to make dry meat. If one had a vehicle they could make it back to the 'village' within hours making dry meat before the meat began to spoil as the meat may not last the two to three day wagon trip back to the 'village'. The fourth quote illustrates how both distance and the number of animals harvested influence the decision of where to make dry meat. If the kill site is close to the 'village' then the hunter may decide to return to the 'village' rather than make dry meat in the 'bush'. If a hunter(s) killed more than one moose the ability to transport it back to the 'village' is hindered due to the sheer quantity of and weight of the flesh. In such a scenario the hunter(s) may choose to make dry meat in the 'bush'. The final quote shows how time was a consideration when deciding to process the meat in the 'bush' or the 'village'. If a group needed to get back to the village for such things as wage labour, school, or church, meat from a hunt would be transported back to the 'village' for processing. If there were no such restrictions on time the groups may decide to stay in the 'bush' and make dry meat there.

Summary of variables affecting decision making regarding if dry meat is made in the 'bush' or the 'village':

- Age of group
- Transportation technology
- Distance from 'village'
- Number of animals harvested
- Time in the bush

These variables correspond to two of Jarvenpa and Brumbach's (1983) factors including "proximity to a major settlement" and "transportation technology". The variable of time can be linked to Jarvenpa's (2006) perspective that the shift from bush centered hunts to village centered hunts is linked to external political-economic forces such as schooling that tie women and children to the village for most of the year. These findings are helpful in understanding the factors that have led to a change to the archaeological signature of meat processing in the boreal forest from the 'bush' to the 'village'. Research in the pursuit of understanding the drivers of change to archaeological signatures is important in the discipline of ethnoarchaeology where we must be cognisant of not projecting the present blindly onto the past.

It should be noted that although these considerations were made by Swan River First Nation Elders when determining where to make dry meat, today hunters rarely make dry meat in the bush outside of special events such as culture camps. The number of Swan River First Nation members who continue to make dry meat is declining. Access to electricity and subsequently deep freezes has led to a major decline in not only the practice of making dry meat to preserve it but also fresh meat sharing among the extended family. Despite this, dry meat is still considered a favourite food by Swan River First Nation members.

Archaeological Signatures of Food Preservation and Hide Processing

In the past, fall hunts utilized bush centered processing to make dry meat and grease. It is described how "Pole racks were set up in multiple places and fires were kept smouldering at all times to dry the meat" (Kinuso 1979:269). The archaeological signatures of making

grease will first be discussed followed by those for making dry meat, berry preservation, and hide processing.

Grease

Ethnoarchaeological work done in the 1960s in the Cree community of Calling Lake, east of Lesser Slave Lake, sheds some light on the activity of bone breaking associated with making grease. The researcher, Zierhut, explains how:

> "2 large oval stones are placed on the ground 8-10 inches apart, proximal and distal ends are placed on the stones and the blunt end of an axe (before axes it would have been a fist sized stone held in the hand) is used to break the bone into two halves with just a few small fragments or chips detached from the point of impact, marrow is collected with the aid of a peeled willow stick. After marrow is removed one half of the broken shaft is placed on one of the stones and hit until broken into small pieces, proximal and distal pieces and all the small pieces of the shaft are then collected with the intent of making bone grease" (Zierhut 1967:34-35).

Based on what Zierhut learned from his consultants at Calling Lake, the archaeological signatures of bone breaking would be very difficult to see in a subarctic archaeological context as bone is unlikely to leave impact marks on the hammer and platform stones. It is also unlikely that any bone fragments would preserve in the acidic boreal forest soil. Boiling pits would also be an archaeological signature of making grease but no information on how this was done in the Lesser Slave Lake region is available.

Dry Meat

Dry meat hearths and associated drying racks would have been predominant features at a bush centered processing camp. In the quotes below Swan River First Nation Elders discuss dry meat hearths.

"Like they smoked the meat, but actually it got smoky because they used to use smoke to keep the flies away [from the meat]. *But it used to dry at the same time. They never had huge hot fires. They used to do just smouldering"* (#11D). *"The sun, the wind, and the smoke. Three things to make dry meat"* (#19D).

As discussed in the above quotes the fires used in meat smoking were designed to produce smoke not heat. An article by Werts and Jahren (2007) described how fire temperature can

be ascertained from archaeological hearth remains by using the carbon stable isotope composition of soil organic matter. This approach may help to differentiate between cool, slow burning dry meat hearths and hearths used for heat or cooking that had substantial heat and flame. High charcoal to ash ratios may also denote slow burning, smoky fires. Other strategies for identifying hearth function based on combustion temperatures can be found in Braadbaart and Poole (2008) and Mallol et al. (2007).

At a bush centered processing camp, one could expect that a dry meat hearth would have substantial ash and charred wood accumulations because of its long duration of use. Swan River First Nation Elders were asked what fuel they used to smoke meat as, in the event that charcoal preserved in this archaeological context, species identification of the charcoal could, among a suite of other characteristics, help interpret a hearth's role.

As outlined in the utilized resources section in Chapter 5, almost all of the Elders interviewed discussed using diamond willow or aspen poplar as fuel when making dry meat. Jackpine and spruce were never used for making dry meat. Thus if charcoal was preserved, one might expect one of the archaeological signatures of a dry meat hearth to be fuel remains of diamond willow or aspen poplar wood. In addition to the archaeological signatures of a dry meat hearth involving charcoal and ash, other signatures may include evidence of a drying rack, in the form of post holes that may frame the hearth.

Research with the Dene from English River First Nation (Dersch 2005:77-78) also revealed fuel preferences with regards to making dry meat. Elders who had grown up in the southern micro-villages close to the modern hamlet of Patuanak exclusively used aspen poplar wood to make their dry meat. Like Swan River First Nation, jackpine and spruce were never utilized for smoking meat.

Berry Preservation

Berries were an essential element in the Swan River First Nation diet as a source of carbohydrates, fibre, vitamins A and C, calcium, folic acid, and flavonoids (antioxidants). Preservation was necessary to ensure that supplies lasted through winter and into spring.

Berries like saskatoons, chokecherries, low bush cranberries, and blueberries were harvested in August and were preserved by being either frozen underground in caches or dried. The following quotes from Swan River First Nation Elders describe the preservation of berries and the material culture associated with pounding chokecherries that were then mixed with grease and pounded dry meat to make pemmican. Pemmican was a nutritious meal that would not spoil for very long periods of time.

"Saskatoons, I dry it. You know you put the big thing on there and dry them. I don't know how long it took boy. And after they were done you could tell you would just pick them up and they were just raisins. Little small raisins and I put them in a bag and hang the bag up somewhere inside. Then whenever I need some, I take some out and cook it and it's just like fresh" (#19D).

"With saskatoons, she dried some...And the chokecherries, in the fall we had to pick. She'd make sure that we got a bunch of them and then she would crush them. Like put them in a cloth and hit them on a rock, just crushing the stones and all" (#4D).

"She would put them [chokecherries] *in a bag or sack or else pound them on a flat piece of iron or rock with another rock"* (#5D).

"Chokecherry is ma noo ma na nah. Because, long time ago, people used to look for a flat log and they'd wash and clean it good and they'd put the chokecherries there and take another stone and smash them. And after they smash them, they also dried them. [Question: What did you use to pound it?] *A stone. If I didn't have a stone, I'd use a hammer. I'd buy a canvas and wash it about five times because you don't know what it's made of. You know the canvas you make tents with or a tipi. I'd wash it about five times and boil it too. And that's where I'd put the dry meat and wrap it up and pound it. You have to wrap it up or it would fly all over.* [Question: What did you use before canvas, did you use hide?] *Oh ya. My grandma did before it was tanned. When it was still stiff. She would sew it together just like a bag. With sinew, not thread, with sinew from the moose. And that's what she used to"* (#16D).

Based on Elders' testimony we are able to gain an understanding of the type of material culture used in crushing chokecherries and what surfaces would be appropriate to test for starch remains (see Zarrillo and Kooyman 2006). Either a hand held hammer stone or a metal hammer was used to pound the berries on a surface of wood, iron, or stone. The fact that the chokecherry pits were pounded bodes well for starch remains as the endosperm is full of starch. However the actual fruit does not appear to come into contact with either the

hammer or the pounding surface as they were contained in a bag of canvas or rawhide to prevent them from 'flying all over' while being pounded. It is thus unlikely that chokecherry processing can be identified archaeologically in the form of starch remains on hammer and platform stones in the Lesser Slave Lake area.

Hidès Smoking

The following description of hide processing and associated material culture provides a foundation for understanding the archaeological signatures of this activity.

"Well, you make a rack, real square. A big one with poles. And then you cut holes around the hide and you tie it to the frame there. And before it dries up you tie it real quick. Before it dries up on the meat side. And that's where you scratch all that meat or whatever that's on the hide. And then when you finish you set it up if you have dogs. If you don't have a dog you don't have to do that because dogs might like to eat it, you know. Set it up until it dries, dries real good. And then you turn it over and then you scrape all the hair off. When you are finished scrapping all the hair off you take it out of the rack and then you put grease, lard whatever on it and then brain from the moose head. You spread it there with your hands. And then you fold it up and you put something heavy on top of it for about three days until all that thing soaks in the hide. And then, when you think it's soaked, you put it in a great big tub of water, soak it there until it's soft. And then you take it out of the water and you wring it out. You make a, like a fence like that, and you put it over there and you use a big stick and you wring that. That was a hard job. And then you dry it up. And you keep stretching it until it is real dry. Because if you don't it will be small you know. Then you smoke it. [Question: What wood do you use to smoke the hide?] *Rotten spruce tree.* [Question: What tools did you use?] *It is made of bone...it has teeth...from a moose. The front leg...The ones I had, they were made out of a stick there. The stick had a head. And you stick that metal that heavy thing into that stick and you screw it in or tie it up, whatever. That's what you scraped the, and you sharpened that thing.* [Question: Where did you smoke your hides?] *I used to go in, we had a little bush behind the house there and my husband made a fire pit there, a hole, and he put sand so I wouldn't make a ground fire. There was two little trees like that. I put a stick across there and that's where I tied my hide"* (#16D).

"They had what I called the fleshers. The flesher was made out of, I guess it was moose leg bone. It would be dried up and then cut kind of on an angle like this you know...And then they would make little grooves like teeth on there. That's what she would use to flesh the hide with on the one side, on the meat side eh...For that side there was what they call a scraper. My Dad would make kind of a wooden handle and then he would get a strong piece of steel usually from a mower machine or something like that. Like real strong and he'd sharpen that right up. That's what they used for scraping the hair off" (#2D).

"Scraping the flesh first, then scraping the hair. Then soaking it in a mixture of water and brains from the moose and wringing it out. Stretching it and softening it on a rack made out of a piece of iron that had grooves in it to soften it. Soak it and stretch it. Getting a certain kind of wood, it was like decayed, rotten wood...we'd get that and put it in a tub and smoke the inside then turn it around and smoke the outside" (#5D).

Hide processing tools today consist of bone fleshers and metal scrapers and are highly curated. If this was also the case in the past then it is unlikely that fleshing and scraping tools would be recovered from an archaeological site. However, lithic precursors to metal tools used as scrapers would have undergone a great deal of re-sharpening and may have worn out quickly. Thus we may see re-sharpening flakes and expended scrapers in the archaeological record with usewear and residues reflective of hide scraping. However, the most likely archaeological remain left from hide processing would be the hearth used to smoke the hide. The final smoking process provides color and allows the hide to remain soft after getting wet. Like the dry meat hearth, the one used for smoking hides would also be a low temperature fire but would be, according to Swan River First Nation Elders, composed of rotten spruce wood rather than diamond willow. This is consistent with the fuel used by the Dene from English River First Nation who utilize rotten spruce and moss to smoke their hides (Dersch 2005:89).

Archaeological Signatures of Kill Sites

Kill sites of solitary animals such as moose are difficult to locate in the subarctic archaeological record for a number of reasons. Firstly, the small concentration of faunal remains is unlikely to preserve in acidic soils. Secondly, primary processing of solitary animals often left little archaeological signatures outside of tool re-sharpening flakes and the rare expenditure of worn out or broken tools. As described by Janes "there are purposeful human activities which occur at site specific locations that have no material correlates, such as kill sites from which the entire animal is transported back to the residential camp" (1983:109). Finally, "kill sites can occur at locations which defy prediction because an unknown number of them are fortuitous, resulting from the chance encounter of hunter and animal" (Janes 1983:109).

The section below employs Swan River First Nation traditional knowledge in an attempt to define factors that affect what faunal remains are left at a kill site and suggest some possible signatures of a solitary moose kill site.

One Elder discussed her dad's use of a horse in transporting the meat from the kill site back to a temporary bush camp before reloading the meat for the trip back to the 'village'. A small snack and washing of the meat took place at the temporary bush camp before heading back to the village.

"Camped close to the creek and kept the fire going while dad walked to a nearby salt lick, he would shoot a moose, cut the meat up into pieces he could lift, use one horse with poles and tarp, bring the meat to camp, wash it in the river, then covered the wagon in leaves, placed the meat on it and went home" (#20D).

Another Elder described how meat was packed from the kill site to the bush centered processing site by hand using the moose hide as a sled.

"My Dad and his partner...when they'd kill a moose especially and they had, you know in those days you had to go two or three miles out in the bush and they had to pack it. They used to wrap their meat up in the hide and then pull it that way...They'd just wrap it up in there, kinda lace it up a little bit so it wouldn't fall out, you know what I mean. And then they would tie that rope in front and just put it around their chests or whatever and then they would pull it" (#2D).

Two Elders retold stories about men who carried the meat from an entire moose from the kill site to the bush centered processing site. It is not certain if these are special feats of strength or relic tales of a time when it was adaptive for a single man to be able to butcher and carry meat in such a way that a he could transport an entire moose on his own from the kill site to the processing site.

"My wife said her grandfather packed a whole moose home. He de-boned everything, wrapped it up put it over his shoulder and away you go" (#17D).

"I know one guy here he used to pack a whole moose at once...put it there hand right over your shoulder and away you go...or pull it...yeah certain way you got to cut the meat though too" (#39B).

Today mechanized vehicles are generally used in hunting. As described by one young hunter the only parts of the moose left behind at the kill site include the head, some of the guts, the spine, and sometimes the lower legs (#54D). What is brought home are the delicacies (nose, hearts, liver), the four quarters, and the ribs (#54D). Another young hunter explained how she generally hunts with a truck and brings the entire moose back to the village for butchering. The only remains left at the kill site are the guts (#52D).

Further research is required regarding the specifics of the faunal remains left at kill sites depending on different scenarios. However, the immediate value of the above quotes is that they demonstrate that faunal remains left at a kill site vary according to a number of factors including: 1- seasonality (can pull meat in winter but have to carry meat in summer, can cache meat in winter and not summer), 2- number of people available to haul meat, and 3- transportation technology (horse, ATV, or truck). Thus there is likely no set faunal assemblage that is diagnostic of a kill site, rather a number of different scenarios are played out after a kill that depend on a number of variables. Having said that, in the absence of mechanized transport it is likely that some bones would always be left behind such as the skull, lower legs, and spine.

As discussed by Jarvenpa and Brumbach (1997), hunting generally has poor archaeological visibility when narrowly defined as killing. In other words, the individual kill site is essentially archaeologically invisible. However, traditional knowledge from Elders can at least provide information on where the kill may have occurred. Virtually every hunter described hunting moose incidentally but would also hunt at mineral licks in summer and in willow areas in winter, "*In the summer time we used to go hunt moose in the moose lick*" (#2D). '*Mostly in winter, I hunted moose in alder and willow areas and by the river*' (#49S). Some mineral licks have the potential to persist for several thousand years on the landscape and could thus be considered high potential areas for kill sites.

One Elder recounts a story about moose hunting that provides an archaeological signature for the location where the fatal blow to a moose it made. However, this location is not the

same area where the moose actually dies and primary butchering occurs. "*They tell me stories about how they used to hunt moose a long time ago aye... yeah, they used to dig a hole aye, dig a hole, used to go inside that hole, used to wait in that hole, used to call moose there, and that moose was right under him and...get him from the stomach, make him sick aye, and they track em right to wherever they goes south...I said well I was gonna run after it he said, no, no, stay here he said, you gotta give em time to lay down he said then he won't get up*" (#39B).

Spatial Organization of Hunting by Gender

In a 1997 article, Jarvenpa and Brumbach discuss how variability in the spatial organization of hunting is affected by gender in the southern Dene community of Patuanak. They explain three different types of spatial behaviour based on gender each with a direct archaeological consequence.

- All Male Teams as logistically organized collectors:
    - harvest resources in far flung zones, dozens of kilometres away and many weeks removed from their families and village, during mostly fall and winter
- All Female Teams as daily foragers from the central residence:
    - harvest resources year round, on a daily basis, a few kilometres from home or within a day or over night's travel from the village
- Male Female Teams:
    - harvest resources in areas intermediate between the previous two, husband wife pairs and their children, summer and fall, moose hunts for 2 days or 2 weeks, 10-45 kilometres from the village, is becoming less prevalent as a result of the shift from bush to village centered processing

Testimony from Swan River First Nation Elders largely supports this model of men as logistically organized collectors, women as foragers based near their homes, and male female groups that harvest resources at an intermediate distance.

All Male

The following quote illustrates a Swan River First Nation trapper as a far ranging and logistically organized collector who is a member of a small, all male group.

"He just stayed right out there. He had a cabin there. He'd go out there in the wintertime and go out there in the spring when he was trapping beaver...So he trapped everything from weasel and you know squirrels, and martens, mink. Everything that was out there, lynx, muskrat, beaver...You know sometime he would go out there for two or three months in the wintertime. And in the spring he would go there again for a month or until the season closed I guess...He had a partner that he used to do a lot of trapping with. It was his neighbour Bernard Potskin" (#2D).

In the Lesser Slave Lake area, a shift in pack animal used by some all male groups also had an impact on the spatial organization of these logistically organized collectors. This is outlined well by the following Elder's quote: "*Well years ago a lot of people had dogs, big dogs. That was their pack animal. My Dad used to own dogs when he went trapping. Instead of a horse, a horse you have to feed. Well the dog will eat your scraps*" (#17D). Elder Jean Marie Mustus discusses how a long time ago "They didn't have horses, but they used dogs" (TARR 1978:6).

Thus, for those all male groups that made the shift from dog to horse they had the new limiting factor of hay to contend with. This may have led to abbreviated or modified land use patterns as groups became more tied to hay reserves at the village or to hay meadows within their traditional territory.

All Female

The following quotes outline the role of women in procuring small game and berries near the home including rabbits and grouse that were very important dependable food sources. In addition to food, women also contributed to the cash earning of the family through fur sales of muskrat and weasels that they shot or trapped near their homes and sales of rabbits to mink farmers.

"My brother and I used to go with my Dad's mother...she had her little path where she goes. She had her twenty-two, and if she saw a rabbit running she'd shoot it. Then get the snares" (#10D).

"I used to go all over with me mom and I knew how to set snares [rabbits]*and how to set a trap for squirrels and weasels...We used to go trapping them* [muskrat] *at the lake. Or else, shooting them with a twenty-two"* (#9D).

"Mom used to set snares for rabbits, mom used small traps to catch rats (#23). "She set traps for weasels as well" (#2D).

"Well usually they shoot them but I'll tell you a story about how we got one once. I was there with my eyes wide open observing this. It was just right outside our house. There was a tree up there eh. Not real tall. My Mom had this long stick. She made a snare at the end of it, and I watched her put it over that little chicken's head and pull that thing and she got that partridge, there it was supper. I couldn't believe that. The dogs I think barking were keeping it up there. I don't know what it was but" (#1D).

'Mom and I would pack a lunch and blankets and take the train from Canyon Creek to Kinuso, we would get off at the water tank and pick saskatoons all along the tracks, had lunch there, would walk to town, then take the train home' (#20D).

However, there is a deficiency in Jarvenpa and Brumbach's (1997) model in that it would be erroneous to assume that this foraging pattern close to the central residence is solely a signature belonging to women. Swan River First Nation members often explained how as their grandfathers (*moosums*) aged, they limited their harvest of traditional resources to the area immediately around their home. Traplines in the Swan Hills were given to younger family members and *moosums* began small rabbit snare lines and trapped weasels near their homes and would largely limit their harvesting locations to areas on the reserve. One Swan River First Nation member remembers her *moosum's* snare and trapline behind their house where he marked his snares by placing used shot gun shells on branches (#54D). In addition, many Swan River First Nation members explained how they accompanied their mothers in tending snares and traplines near the home when they were young. Thus this foraging signature near to the village can also reflect the behaviour of children with their mothers. Thus not only gender but age (children and the elderly) can also affect the spatial organization of activities.

Male and Female

Many Swan River First Nation Elders told the stories of family (husband, wife, and children) berry picking trips for blueberries and low bush cranberries some distance from the reserve. This distance of travel and length of stay represents an intermediate position between all male groups and all female groups.

'Four families would go berry picking by wagon and pitch a tent, they would pick in the Sand Hills towards Swan Hills, picked blueberries and cranberries, I would look after the young kids, I would listen from my tent to the adults at night when they would tell stories around the campfire' (#23D).

"We used to go picking berries, go in a wagon, there'd be a few families, like, three families in a wagon and kids, and we'd all go out and camp for a week or so and just pick berries" (#41B).

"We used to go by a team of horses and a wagon. We used to go pick blueberries up there all day. It was just like a holiday. We'd roast potatoes, we'd cook up something eh...we camped ...It was kind of scary because where there is berries there is a lot of bears. It was fun. Just like lots of people used to go out there. You know we got to play" (#1D).

"We used to all go camping and pick blueberries. I sure used to like picking but after you do it for a week, you get tired. You have to pick three pound pails, and after you picked three of them then you could play. So we did fast the first two but the third one we couldn't so we used to put grass in there and we used to put berries on top but we used to get caught" (#7D).

"We'd go pick berries...we would go to the sand hills up here. And my grandmother used to come too...and she used to come and we'd all camp up there like. But this was oh families galore...Then the men would go and hunt. They'd have moose and deer. And we'd have a big feast out there you know. And bring home the dried meat" (#4D).

At these berry picking camps children played a very important role in berry harvesting likely accounting for a sizable portion of the harvest that was such a vital source of nutrition in an environment with very limited fruit resources. Although men did spend some time hunting while at berry picking camps, it is likely that they also contributed to the harvest.

Due to the geographical position of Swan River I.R. 150E an interesting pattern emerges where certain plant species are collected by foraging near to the village (the all female group) while others are harvested via collecting (the male female group). The village on Swan River I.R. 150E is adjacent to the following plant resources important to Swan River First Nation members: saskatoons, strawberries, raspberries, chokecherries, high bush cranberries as well as rat root and mint. However, this reserve does not contain any ecosites that contain the necessary conditions for blueberry and low bush cranberry growth as well as Labrador tea. To collect these very important resources one must travel some distance off the reserve. The result is that while some plants are foraged for other plants must be collected.

Although Jarvenpa and Brumbach (1997) defined the male female harvesting pattern largely based on a moose hunt with bush centered processing, the berry picking camps described by Swan River First Nation members demonstrate that this spatial organization is not restricted to hunting activity but should also be extended to include plant harvesting.

A very unique type of male female spatial behaviour was also described by Swan River First Nation Elders. This is the month long Christian pilgrimage done by families to Lac St. Anne, northwest of Edmonton. Even before Lac St. Anne became a popular Christian pilgrimage destination it was a lake of spiritual significance to the First Nations in the area who gathered there in the summer. This pilgrimage is still completed by thousands of First Nations and Métis peoples from Western Canada. The selected Elders quotes describe the pilgrimage to Lac St. Anne.

"We would head to Lac St. Anne. And they used to take oh any wheres from three to four weeks, three and a half weeks. But what would happen, on the way my Dad would hunt on the way. He would kill moose and my Mom would... make dry meat" (#2D).

"We'd go there on horse and wagon you know, all the way to Lac St. Anne....But then we'd leave here about a month early. We'd go hunt and everything else... You know sometimes if we see something you know when we were traveling on this old, you know the wagon train or something you know we'd shoot it. Or sometimes we'd be going there and sometimes you know these hunters would just go. Either ahead or back or someplace. You know because they knew the trail and where we were. You know they knew the woods and the

forests you know. Sometimes we wouldn't see them for a day or two or maybe something like that. And when they do come they usually have something for us" (#13D).

This spatial behaviour does not fit into Jarvenpa and Brumbach's (1997) male-female model, likely because this behaviour was spiritual or ceremonial and was not for resource extraction purposes (although limited trading does occur at such gatherings). However it does provide a glimpse of interesting behaviour of collectors/foragers who must return to a mobile home base. The pilgrimage route taken to and from Lac St. Anne was well defined and archaeological sites found adjacent to this trail may be interpreted as sites used for harvesting by First Nations during this pilgrimage.

Before contact and Christianity, summer rendezvous to resource rich areas were a common part of Cree seasonal rounds where kinship bonds were renewed, ceremonies held, and marriages arranged. Thus an examination of the spatial behaviours associated with the pilgrimage to Lac St. Anne can have applications to pre-Christian summer rendezvous. More research into this and other pilgrimages in the region may enhance archaeological understanding of how past rendezvous may have occurred and their archaeological signatures. Contributions from traditional knowledge may help in the interpretation of exotic materials and intra-site ethnic variation at rendezvous sites in the archaeological context.

Summary

Jarvenpa and Brumbach (1997) build on Binford's (1980) collector and forager model by showing how culture change in the southern Dene community of Patuanak has modified land use patterning and collecting and foraging according to gender. In the community of Patuanak, land use sites dozens of kilometres away from the central residence are the residues of male collectors, land use sites within a few kilometres of the central residence are left by female foragers, and intermediary land use sites are left on the landscape by male-female or family groups.

Swan River First Nation traditional knowledge was applied to this model to assess its validity. It was found that land use patterning and collecting and foraging during a period

of Swan River First Nation land use was also divided according to gender. During this period, the land use patterning of women was largely in the form of foraging within a few kilometres of the central residence where men left collecting land use signatures dozens of kilometres away from the central residence. Male-female or family groups left land use signatures that were intermediate to the all male and all female groups. In addition it was found that foraging signatures left by women may also be extended to include children and the elderly.

This model could be applied to the interpretation of historic Swan River First Nation archaeological sites from the era discussed by the Elders during collection of traditional knowledge for this dissertation. Using Swan River I.R. 150E as the central residence, this model could also be applied to Swan River First Nation traditional land use data to determine if mapped sites correspond to specific gender combinations based on distance from the central residence and mode of harvest (collecting or foraging). Further research could be done to assess land use patterns and signatures of Swan River First Nation members and address the following questions: How has infrastructure, transportation technology, wage labour etc. impacted land use patterns? Is collecting and foraging still patterned according to gender?

Seasonal Land Use Patterns

Swan River First Nation Elders' quotes provide valuable information on past land use patterns including seasonal harvesting that could be applied to predictive modeling for the location of camp sites.

Land Use Patterns

Long ago, people stayed close to the shore of Lesser Slave Lake during the spring and summer to harvest fish and waterfowl and moved south towards the Swan Hills in fall to harvest and then preserve moose and berries and stayed in the bush over winter. "*See in them days too like in the summer everybody used to go to the lake and just stay around the lake because of the fish. It was too cold to stay at the lake in the winter so they'd come where the trees are where the moose are in the winter*" (#17D).

One Elder recalls summer spent "*living by the lake in a tent...living on fish. Ducks and fish*" (#9D). Another Elder recalls how in winter they lived on '*dry meat, lard, and dried berries*' (#31T). Elder Jean Marie Mustus describes how: "Their main source of livelihood was from the bush or from the lakes. When they were in the bush they made tipi shelters of wood. They hunted and in the fall prepared [preserved] food, because there was no other place to go to" (TARR 1978:6). Elder Frank Twin recalls how, "Small bunches moved through the valley hunting and trapping in the fall" (Kinuso 1979: 372-373).

The following quote provides an indication of the distance travelled into the bush from the lake shore as being up to about 100km (assumes 12 km/day on foot). "The Indians constantly roved from one place to another, overrunning in the course of the year the whole of the surrounding country and extending their search from 3 to 6 or 8 days' march from the Lake" (H.B.C. Arch. B.115/e/4, Annual Report, 1823 in Baergen 1967:133).

Predictive Modeling of Camp Sites

Proximity to a water source and fuel were key elements in establishing a camp site. One Elder described how long ago her ancestors "*used to live along the lakes and the rivers*" (#12D). Another Elder stated the following, "*Well usually they would go set up camp in the summer or fall or spring where there would be some water, where it would be close to everything that was needed. You know whatever you need. You know. Where there would be wood too*" (#13D).

One Elder recalls a temporary overnight camp utilized when on route to the more permanent camp/cabin on his father's trapline. "*But you know when my Dad used to go out on the trap line we used to, it's two days to get there with a team of horses eh, we'd camp on the way...I used to sleep under a spruce on ah, there used to be one big spruce there. A lot of people going out there used to camp there. Just like a big house eh? The branches would just branch right out and people used to just sleep under there. In the wintertime, January and February I have done that with him a few times*" (#2D).

Elders discussed the preference for balsam poplar wood for fuel for overnight fires when sleeping outside, '*balsam poplar does not throw sparks, when outside and you have no choice but to sleep beside a fire you choose this because it lasts a long time and does not throw sparks*' (#2D). This is in contrast to spruce wood that produces a lot of sparks. If excavating a suspected temporary camp site one might expect that the hearth remains of the fire used for heat would contain the ash and charcoal from balsam poplar wood.

When using air tight stoves fuel considerations shift to exclude wood that: leaves soot in the stove pipe (spruce, jack pine, birch), produces a lot of ash (poplar), or ruins stoves due to producing tremendous heat (tamarack). It is interesting to note that before the use of stoves with canvas tents and cabins, spark production would have been an important consideration when selecting fuel for overnight both when sleeping out of doors or in a hide, bark, or brush covered lodge.

In addition to heath remains, harvesting of fuel may also be identifiable in the archaeological record in the form of culturally modified trees. Culturally modified trees are a type of evidence recording past use of trees for fuel, construction, food, or medicine (see Turner et al 2009). In northern Alberta culturally modified trees are usually in the form of paper birch trees with the bark having been removed for baskets, moose callers or canoes. However they can also be in the form of stumps and de-limbed trees signifying fuel use and blazes on trees used to mark important areas or trails.

Summary of Findings

In the discussion concerning 'where to make dry meat', the findings are useful in understanding the factors that contributed to a transition in the location of the archaeological signature of meat processing in the boreal forest from the 'bush' to the 'village' as brought upon by culture change. It was outlined above how grease making and berry preservation in the boreal forest do not leave robust archaeological signatures behind that would persist over great depths of time. However it was suggested that archaeological signatures of both dry meat manufacture and hide processing could be identified archaeologically through a careful analysis of hearth remains coupled with traditional

knowledge research on preferred fuels for specific activities. In discussing the archaeological visibility of kill sites, it was explained how a number of factors determine what faunal remains are left at a kill site. Research related to factors impacting primary processing at kill sites and decisions on where to make dry meat, is important in beginning to understand how culture change (i.e., use of vehicles) has impacted land use and subsequently archaeological patterning. Jarvenpa and Brumbach's (1997) spatial organization of hunting by gender model was shown to also be reflective of a period of Swan River First Nation past land use behaviour. However, it was demonstrated that land use patterning is influenced not only by gender but by age as well. Finally, there was a brief discussion of land use patterns and predictive modelling of camp sites including proximity to water and access to specific fuel sources.

Cree Land Use

A review of Bigstone Cree Nation's (located north east of Lesser Slave Lake) cultural land use and occupancy study provides some additional information of interest regarding archaeological signatures. For example Elders recall storing berries and birch syrup in birch bark containers underground in the muskeg (AINA 1999:54,70). Due to permafrost conditions, the structures of some of these 'cellars' may be preserved. They also discussed the construction of clay stoves in cabins, "some built mud stoves in the corner of their cabins, the stove was built using raw willow branches nailed to one wall, then using wet mud or clay, straw or twigs to pack and shape the stove, and opening is made where one builds a fire" (AINA 1999:73). This is interesting as most subarctic dwellings decompose to leave little to no trace but abandoned clay stoves may persist in the archaeological record.

Elders also discussed how "thumb bones from front legs [possibly the vestigial metapoidals of moose] were used for tipi pegs" (AINA 1999:84). In conditions with bone preservation and abandonment this traditional knowledge could prove valuable in helping to discern the dimensions of abandoned dwellings. Testimony was provided stating that "long ago when someone died the body was prepared and then left hanging in a makeshift platform" (AINA 1999:83). This has implications for archaeological interpretation of grave sites. Finally,

Elders described how "when you killed a moose, you couldn't feed the bones to the dogs" (AINA 1999:89). In conditions with faunal preservation this taboo could help archaeologists better interpret taphonomic processes including scavenging.

Information from Bigstone Cree Elders was also relevant to the earlier discussion regarding bush and village centered processing sites. "One time we were hunting moose, my brother killed about three moose, we gathered berries, and dried meat and made hides, my father built a cabin and a storage building there, we would put all our food in the storage for later" (AINA 1999:62). This quote demonstrates the use of a bush centered processing site for making dry meat, processing hides, and preserving berries. "Hunting in fall for winter meat supply, wherever the kill site was, that is where they buried their supply, in the winter months my uncle would go back to them as we needed them" (AINA 1999:86). This quote discusses the construction of cache sites adjacent to kill sites possibility providing an archaeological signature for an otherwise invisible site.

Warnings against Misuse

Traditional knowledge has a history of misuse in the hands of western scientists. In most cases traditional knowledge is cut from its context and pasted into a western paradigm. traditional knowledge is often employed for a purpose not supported or understood by the community from which the traditional knowledge derived. It is hoped that archaeologists employ Participatory Action Research when embarking on research projects that involve a community's traditional knowledge. This approach would involve the traditional knowledge holders and community as full partners on the project with an equal voice in research design and results dissemination.

Applications of Archaeology to the Understanding of Traditional Knowledge

It would be remiss in a chapter on the application of traditional knowledge to archaeology to not recognize the contribution of academic archaeology to traditional knowledge. Colonization has had a severe effect on traditional knowledge transmission as a result of epidemics, population displacements, the Indian Act (containment on reserves and outlawing of certain cultural practices), the residential school system etc. Archaeology can

thus serve to supplement traditional knowledge in areas where it had been lost due to colonization or simply due to culture change. In a general sense archaeology can be used by First Nations to support land claims via a demonstration of past land use that a nation may not have the ability to document themselves. More specifically, archaeology can help nations learn about past technology (e.g., lithic tools) that have different modern day counter parts. In an article by Downum and Price (1999) they outlined the broader applications of archaeology to First Nations as follows:

- land claims and repatriation;
    - e.g., The Indian Claims Commission was created in the United States to resolve conflicting territorial claims and were adjudicated using archaeologists as expert witnesses who presented material evidence of historical links between contemporary tribes and archaeologically defined territories.
- constructing cultural identity;
    - e.g., at the Ozette site, in northwestern Washington, archaeological excavation provided a wealth of organic objects preserved beneath a mudslide that are now housed at the museum of the Makah people who are descendents of the Ozette population. A Makah Elder describes how the museum is a source of revitalization for the tribe as it has brought back interest in the language, are, carving, and basketry (Friedman 1995).
- reviving ancient technologies; and
    - e.g., Archaeological data from Peru has provided construction details of 'raised fields'. Adoption of ancient these raised field techniques would greatly increase yields, reduce the amount of seed needed, lower the amount of fertilizer needed, and dramatically cut crop losses due to frost (Kolata 1991).
- cultural tourism.
    - e.g., The Blackfoot Crossing Historical Park interpretive centre, associated with archaeological excavations at the Cluny Fortified Village in southern Alberta, provides Sik Sika First Nation an opportunity for economic development through tourism.

Aboriginal Peoples and Archaeological Consultation

As shown in the previous section, traditional knowledge can greatly contribute to archaeological interpretation and as such it is important to include First Nations in archaeological assessments in their traditional territories. The following section evaluates Alberta's Aboriginal consultation policy with regards to archaeology (heritage resources). This is followed by a brief review of the policies of other provinces and territories in western and northern Canada.

Alberta

Part V of Alberta Tourism, Parks, Recreation and Culture (TPRC) First Nations Consultation Guidelines on Land Management and Resource Development (Government of Alberta 2007b) discusses consultation with First Nations regarding heritage resources. In this document the Alberta Government states that TPRC will address consultation issues through administration of the Historic Resources Management Branch's legislated responsibilities with respect to two types of historic resources: 1-Sites of Central Significance to First Nations and 2-Traditional Use Sites as Historic Resources. Sites of central significance are defined as follows: "In certain cases, historic resources may be of central significance to First Nations, and may have the potential to be directly connected with the practice of a First Nation's Right or Traditional Use. These sites will generally be known to the First Nation through oral tradition, ceremonial practices, or other cultural activities. These types of sites could be characterized as representing the defining and central attributes of the First Nation's culture. They are not easily defined, but would include major archaeological sites, landscape features or historic structures with a significant connection to First Nations oral tradition and history." Because Treaty Rights may be practiced through traditional use activities, the identification of traditional use sites is an essential component of TPRC's consultation strategy.

The obvious issue with this approach is that TPRC is often unable to determine if a site meets the criteria for consultation without first speaking or consulting with First Nations. The success of this system is thus based on communities having previously shared their traditional land use data with the Province, "TPRC will use traditional use sites on the Listing as a trigger mechanism for proponent-required consultation with First Nations"

(Government of Alberta 2007b). Many nations are reluctant to share this information out of mistrust and a fear that this will exclude them from consultation in areas within their traditional territory where they do not yet have their traditional land use sites recorded.

As touched on earlier, the very concept of completing a traditional land use study of an entire traditional territory including ground truthing is unreasonable if the study's intended purpose is for consultation. Given the population size of some bands and span of some traditional territories an amazing amount of resources would have to be thrown at such a project. Further to this, the study would be outdated as soon as it was completed as First Nations peoples are continuously utilizing new areas such as those based on access and resource availability. Thus the concept of utilizing traditional land use study databases is an unreasonable attempt by the Government of Alberta to limit First Nations power in the consultation process. A landscape rather than site specific approach must be taken to conduct meaningful consultation with First Nations in Alberta. Thus given that it is an impossible task to create a complete, ground truthed, and up to date traditional land use study, the absence of known recorded sites cannot be the basis for not consulting.

In some circumstances industry is going above and beyond TPRC requirements and responding to First Nations requests for their involvement in the assessment of heritage resources. For example Swan River First Nation has developed its own archaeological protocol, cultural heritage policy, and cultural heritage investigation permit. Their consultation office evaluates each proposed project and determines if archaeological assessment is required. They have been successful in getting industry to complete heritage resource impact assessments (HRIAs) in areas where the Government of Alberta did not require them and to complete further work when HRIAs are reviewed and deemed incomplete or inadequate. As with general Aboriginal consultation, it is thus becoming evident that the Government of Alberta's policy and guidelines are beginning to lag behind best practices. A sort of supra-regulatory process, with First Nations as regulators, is occurring where the Government of Alberta may be cut out of the process (Galbraith et al. 2007). If this occurred management of heritage resources in the province would suffer. It is

important that the Province improve their policies and guidelines to ensure that they continue to be part of the process.

An interim approach to First Nations consultation with regards to archaeology in Alberta would be for First Nations to provide Alberta Culture and Community Spirit with a copy of their traditional territory or 'area of intense use' map. When archaeological permits are issued within a Nation's area of interest they would receive notification from the Province and each nation could then decide for themselves the level of involvement they would like to have in the archaeological survey or mitigation and work with proponents to meet their needs.

The section below provides a brief outline of Aboriginal involvement in heritage resource management in Nunuvut, Yukon, Northwest Territories, and British Columbia.

Nunuvut

The Inuit Heritage Trust (Trust) is an Inuit organization established by and for the Inuit of Nunavut. The Trust is dedicated to the preservation, enrichment and protection of Inuit cultural heritage and identity embodied in Nunavut's archaeological sites, ethnographic resources and traditional place names. The Trust's activities are based on the principle of respect for the traditional knowledge and wisdom of their Elders. Article 33 of the *Inuit Land Claims Agreement* defines words related to archaeology, recognizes that Inuit have a special relationship with the archaeological record through spiritual, cultural, religious and educational ways and that Inuit and government both have a joint interest and responsibility to manage and conserve archaeological specimens. Also within this article it dictates that the Inuit Heritage Trust be created under the umbrella of NTI (Nunavut Tunngavik Incorporated) and be responsible supporting, encouraging, and facilitating the conservation, maintenance, restoration and display for archaeological sites and specimens in the Nunavut Settlement Area, in addition to any other functions set out in the Agreement. Under Section E- 'Consultation of the Archaeological Permit Application' it states that applicants must inform and consult with communities about their research proposals and provide the details of their consultation (including the name(s) of the individual(s) and organizations

contacted) concerning the proposed research project and attach copies of their correspondence (Inuit Heritage Trust 2003).

Yukon

The Yukon First Nations Umbrella Final Agreement (1993) outlines the role that Yukon First Nations play in heritage resource management in settlement areas. Selected objectives of the 'Heritage' section of the Final Agreement are outlined below:

- to involve equitably Yukon First Nations and Government, in the management of the Heritage Resources of the Yukon, consistent with a respect for Yukon Indian values and culture;
- to manage Heritage Resources owned by, or in the custody of, Yukon First Nations and related to the culture and history of Yukon Indian People in a manner consistent with the values of Yukon Indian People, and, where appropriate, to adopt the standards of international, national and territorial Heritage Resources collections and programs;
- to incorporate, where practicable, the related traditional knowledge of a Yukon First Nation in Government research reports and displays which concern Heritage Resources of that Yukon First Nation;
- to recognize that oral history is a valid and relevant form of research for establishing the historical significance of Heritage Sites and Moveable Heritage Resources directly related to the history of Yukon Indian People; and
- to recognize the interest of Yukon Indian People in the interpretation of Aboriginal Place Names and Heritage Resources directly related to the culture of Yukon Indian People.

To facilitate the objectives of the Final Agreement a Yukon Heritage Resources Board, comprised of ten members and composed of equal numbers of appointees nominated by the Council for Yukon Indians, and of appointees nominated by Government, was established. The role of this board is to make recommendations respecting the management of Moveable Heritage Resources and Heritage Sites to the Minister and to Yukon First Nations (INAC 1993).

Northwest Territories (N.W.T.)

The Mackenzie Valley Land Use Regulations (MVLUR) emerged from the Mackenzie Valley Resource Management Act. Both are applicable in the NWT with the exception of the Inuvialuit Settlement Region. Two sections of the MVLUR are relevant to archaeological sites and one is outlined below:

> "Where, in the course of a land-use operation, a suspected historical or archaeological site or burial ground is discovered...the Board or inspector shall notify any affected First Nation and the department of the Government of the Northwest Territories responsible therefore of the location of the site or burial ground and consult them regarding the nature of the materials, structures or artifacts and any further actions to be taken" (Government of Canada 1998).

With regards to archaeology within the Inuvialuit Settlement Region the following apply:

- Territorial Land Use Regulations, pursuant to the Territorial Lands Act apply to federal crown land
- The Inuvialuit Lands Administration Rules and Procedures apply to Inuvialuit private lands (Inuvialuit Regional Corporation 2005)

British Columbia (B.C.)

B.C.'s Heritage Conservation Act (HCA) requires limited consultation with First Nations regarding archaeology, "Before a designation is made under section 9, the minister must serve notice of the proposed designation on the following persons...the first nation or first nations within whose traditional territory the land to be designated lies" (Government of British Columbia 2010). This was only made a requirement after a court challenge was brought against the province of B.C. in 1995 by the Snaw-naw-AS causing the Archaeological Branch to institute a minimal level of consultation whereby First Nations with an interest in an area were notified before an archaeological permit was issued (Klassen et al. 2009).

Limitation of B.C.s HCA on First Nations interests have been described as follows:

> "The HCA is narrow in its interpretation of cultural heritage, as it only addresses physical evidence of past human activity, and only "automatically" protects those

> sites pre-dating AD 1846 (with the exception of rock art and burials). This definition excludes "post contact" places with tangible evidence, often referred to in B.C. as "traditional use sites" (such as trails, culturally modified trees, and "historic" camps or fishing stations). It also fails to automatically protect a wide array of heritage values and places that are culturally important to First Nations ranging from sacred sites to landscapes" (Klassen et al. 2009:205-206).

"The consequent lack of legal certainty over resources and title, and ongoing land claims and litigation, profoundly affects archaeological practice in British Columbia and the relationships of First Nations to archaeologists" (Klassen et al. 2009:202). Stó:lō is an example of a B.C. First Nation with extensive heritage policies that likely emerged in relation to recent case law in B.C. (see also Xeni Gwet'in, Haida, Gitga'at, and Heiltsuk First Nations). A number of B.C. First Nations have also developed their own heritage permitting process including: Heiltsuk, Kamloops, Musqueam, and Squamish. Illustrated below is the Stó:lō's heritage policy statement.

Policy Statement

- The Stó:lō maintain ownership of and jurisdiction over all Stó:lō heritage sites and objects.
- Stó:lō heritage sites and objects must be treated with respect.
- The management of heritage sites, objects and information must reflect ancestral Stó:lō values for the purpose of protecting and preserving our way of life into the future.
- Resource and land use must be planned such that they conflict as little as possible with Stó:lō heritage interests.
- We must make efforts to respectfully and accurately learn about and share our history with others (Stó:lō 2003).

From a First Nation's perspective, Alberta's Aboriginal consultation policy with regards to heritage resources is inadequate because it is based on a traditional land use site specific approach. In this approach nations are asked to record all of their sites and then submit this information to the Province who will then manage Aboriginal consultation on their behalf. Most Alberta First Nations people do not agree with this approach because traditional land

use is not site specific but rather dynamic and conducted on a landscape scale, and they would prefer to not turn over control of Aboriginal consultation to the Province. Nunuvut and Yukon provide examples of more adequate policies and guidelines. However, the policies and guidelines in these regions were developed under different political conditions. Unlike Alberta these areas did not have treaties and only recently reached agreements. In addition the population of Aboriginal peoples in these areas is far greater than that of non-Aboriginals. This is the exact opposite in Alberta where Aboriginal peoples make up less than 8% of the population. Despite these differences, First Nations people in Alberta should continue to push for greater involvement in archaeology recommending and referring to policies and guidelines from Nunavut and Yukon. As stated by Nicholas "Archaeologists must take a more proactive role in working with descendant communities- not for expediency or political correctness, but because the rights of these communities need to be recognized, and their traditional knowledge has a very important role in the development of a more meaningful and representative archaeology" (2006:371).

CHAPTER 9. FUTURE LAND USE & ARCHAEOLOGY

Traditional Knowledge in Archaeological Modeling

The following chapter demonstrates an example of a positive approach that could arise from more comprehensive Aboriginal consultation with regards to archaeology in the province. The section below outlines a methodology for modeling high archaeological potential based on linking traditional land use with vegetation communities. It is hoped that Albertan archaeologists will recognize the potential of utilizing traditional knowledge in archaeological modelling and employ such methodology in future archaeological research.

The first step in the creation of this model is the demonstration of the association between traditional land use and archaeological sites. The second step involves documentation of vegetation communities linked to archaeological and traditional land use sites. Finally a model of high archaeological potential is presented.

Association between Traditional Land Use and Archaeological Sites

The following site types are defined by Alberta Culture and Community Spirit:

- Isolated find: Consists of one item only.
- Scatter <10: Describes a locale in which less than 10 archaeological specimens are located on the ground surface with no apparent spatial patterning nor any evidence of subsurface occurrences.
- Scatter >10: Describes a locale in which more than 10 archaeological specimens are located on the ground surface with no apparent spatial patterning nor any evidence of subsurface occurrences.
- Campsite: Contains evidence of a fireplace or hearth (e.g. fire cracked rock, ash) and at least one other culturally modified material such as lithics, faunal remains, ceramics, and/or structural remains.
- Stone Feature: Describes any arrangement or formation of stone. Includes circles, rings, arcs, lines, alignments, cairns, drive lanes, marker lanes, effigies, medicine wheels, rock lined depressions or pits, vision quest features.
- Killsite: Describes an area where animals were killed and butchered. Killsites may vary from the remains of a single animal to a massive deposit of bone and

associated tools. Includes jumps, processing areas, traps, pounds, box canyon traps, etc.

- Workshops: Describes an area where lithic reduction has occurred with no other indications of cultural activity or habitations. Includes flaking areas, chipping stations.
- Quarry: Describes a site where lithic raw materials have been mined or extracted. Can be an outcrop or glacial till or alluvial source location.

It is hypothesized that some of these archaeological site types may correspond to the location of traditional land use sites. The following section defines what form certain archaeological sites may take in a traditional land use site context.

- Scatter<10: It is assumed that smaller lithic scatters may represent an area where someone was doing something for a shorter period of time (e.g., plant or small game procurement or processing).
- Scatter >10: It is assumed that larger lithic scatters may represent an area where someone was doing something for a longer period of time (e.g., big game procurement or processing).
- Campsite: It is assumed that archaeological campsites will correspond to traditional land use cabins or fish camps.
- Stone Feature: It is assumed that stone features will may correspond to currently utilized ceremonial or sacred areas.
- Killsite: In the boreal forest big game kill sites (especially of a solitary moose) are often difficult to predict because they are sometimes fortuitous. It would thus be unexpected to see a correspondence between archaeological kill sites and modern kill sites. Exceptions to this would be areas further north where barren land caribou have defined migration routes that have been utilized for thousands of years, natural geographic features that lend themselves well to the stalking or containment of big game, and mineral licks that persist for thousands of years.
- Workshop: It is assumed that there would not be an association between workshop and traditional land use sites as Swan River First Nation no longer makes tools from lithics.

- Quarry: It is assumed that there would not be an association between quarry and traditional land use sites as Swan River First Nation no longer quarries for lithic materials.

GIS software was used to identify archaeological and traditional land use sites that were within 500m of each other. The distance of 500m was utilized to correct for the fact that most of the traditional land use sites on the map were not ground truthed and thus the locations were liable to some degree of error. The results[8] support the hypothesis that there is an association between archaeological campsites and traditional land use cabins or fish camps:

- archaeological campsite GePv-1 is adjacent to a groundtruthed fish camp utilized by Swan River First Nation
- archaeological campsites GiPs-3 and GiPs-4 are adjacent to a groundtruthed fish camp utilized by Swan River First Nation
- archaeological campsites GiPv-6 and GiPv-7 are adjacent to both a groundtruthed currently utilized cabin and two older cabins all utilized by Swan River First Nation
- archaeological campsites GiPv-8 and GiPv-2 are associated with a groundtruthed fish camp utilized by Swan River First Nation

There is not enough data to assess associations between the other archaeological site types and traditional land use sites. This is due to the limited number of archaeological sites in the area and the fact that the majority of traditional land use data has not been groundtruthed.

Association between Traditional Land Use and Archaeological Sites and Vegetation Communities

This section discusses the possible association between archaeological and traditional land use sites and vegetation communities.

[8] These results could be strengthened by providing information on the number of archaeological camp sites not paired with traditional land use cabins or fish camps.

Based on Swan River First Nation testimony, camping is often done in sandy pine areas and near water. Having demonstrated a correlation between archaeological and traditional land use campsites in the previous section, it can be hypothesized that one could expect that archaeological campsites would also be located in sandy pine areas near water. To test this hypothesis a GIS analysis was completed. The results showed that of the approximately 45 archaeological campsites in the Lesser Slave Lake and Swan Hills areas that 15 or 33% of the campsites were found in sandy areas. The GIS analysis also showed that 39 of 45 or 87% of archaeological campsites in the Lesser Slave Lake and Swan Hills areas were associated with water.

However there was no discernable pattern with regards to vegetation community and location of campsites. This is largely due to the fact that the information on vegetation communities had to be derived from site forms that often included vague or insufficient vegetation data. It is hoped that once AVI data[9] is available for the entire area that this assessments can be redone with greater certainty. When AVI data is available reports can be generated documenting what plant community each site is located in and the results can be analyzed for patterns.

Testimony from Swan River First Nation members showed that high altitude areas were used for ceremonial and sacred purposes. It would be interesting to evaluate if stone features were associated with high altitude areas however no archaeological stone features have been recorded yet in the Lesser Slave Lake and Swan Hills area.

Model of High Archaeological Potential

In the model presented next (see Figure 9.1) the following areas are highlighted indicating high archaeological potential:

- Sandy pine (*Pinus contorta* and *Pinus banksiana*) areas
- Riparian areas
- High altitude areas

[9] The ability to acquire AVI data was very frustrating as legal implications of data sharing relating to consultation has stalled the process.

Figure 9.1 Model of High Archaeological Potential

Swan River First Nation

1:80,368

Produced By SpatialQ
October 19, 2010
www.spatialq.com

Legend

- High Elevation Areas
- Large Perm and Waterbodies
- Small Perm, Intermittent, Ephemeral Streams
- Pine Leading Stands - 'A' Density Crown Closure
- West Fraser AVI Data

Elevation Gradient

Value

High : 1197

Low : 0

Sandy pine areas were identified using AVI data (and thus restricted this map to cover areas where AVI data is available). Riparian areas were delineated using Alberta Ground Cover Classification and high altitude areas were demarcated using a relative scale where the highest 10% of an area was highlighted using a digital elevation model. It is no coincidence that this map is identical the local land use plan presented in chapter 7 because areas of importance today and in the future were also important in the past. Fortunately existing archaeological models (not based on traditional land use) are very similar to the one presented here and often also include modelling for elevation, slope, and aspect.

If this model based on traditional knowledge shows exactly what archaeologists are already modelling for then what is its value? The value is in showing that current traditional land use data can greatly contribute to archaeological practise. In other words the present can contribute to the understanding of the past. In fact this chapter only represents a very small portion of the potential that traditional land use data has for contributing to archaeological modelling. See also Ebert 2002.

Future work in archaeological modelling needs to consider the issue of succession with regards to plant communities. It is also hoped that in the future more extensive AVI data coverage and ultimately LIDAR data will become more readily available allowing for a far more detailed and accurate model to be created. Finally, further interviews with First Nations regarding traditional land use will contribute a huge amount of data that can be employed in modelling.

Other future work that would contribute to more refined modelling involves looking at the relationship between traditional land use sites and vegetation communities in greater detail. Originally it was hoped that the myriad of resource icons (e.g., blueberries, muskrat, elk) covering the various Swan River First Nation traditional land use maps could be overlaid on AVI data. By doing this it was hoped that the various vegetation community that each resource was preferably harvested in could be discerned. Unfortunately, because these traditional land use locations were collected in a desktop fashion and largely not ground

truthed it was felt that the value of this exercise would be low. Furthermore AVI data was only available for a small portion of Swan River First Nation's traditional territory.

Swan River First Nation is actively bidding on archaeological contracts in its territory and working hard for Swan River First Nation monitors to be involved in archaeological assessment with other firms. It is believed that the next five years will witness a dramatic shift in the Province's perspective of the involvement of First Nations in archaeology. It is hoped that the Province will consider viewing archaeological sites as ancestral traditional land use sites and take a more landscape (rather than site specific) approach to managing traditional land use sites and accounting for current and future use. It is also hoped that academic and consulting archaeologists will begin to see the value in working more closely with local First Nations communities in archaeological research.

CHAPTER 10. CONCLUSIONS

The specific objectives of this dissertation have been as follows:

1. To document how and where Swan River First Nation exercised their Treaty Rights to hunt, fish, trap, and gather in the *past*
2. To document *present* or baseline conditions regarding infringements to Swan River First Nation's ability to practise their Treaty Rights to hunt, fish, trap, and gather
3. To discuss the *present* context and issues associated with Aboriginal consultation in Alberta with regards to both infringements to Treaty Rights and archaeology
4. To apply Swan River First Nation traditional knowledge to subarctic ethnoarchaeology to enhance current or *present* archaeological interpretation
5. To create a Treaty Rights based land use plan to ensure that Swan River First Nation can practise their rights into the *future*
6. To create a methodology for modeling high archaeological potential based on traditional land use and vegetation communities to be used in future archaeological research

In a broader context it is hoped that this research has:

- demonstrated the application of the theoretical framework of Indigenous archaeology in northern Alberta;
- demonstrated the various contexts that traditional knowledge can be applied to including archaeology and land use planning; and
- provided an example of a research agenda that meets both the academic interests and requirements of the researcher and the vision and needs of a First Nation.

From the work completed as part of this dissertation Swan River First Nation has had their 'traditional land use study' completed. This book will assist them in consultation as it provides the documentation of use that the Province so often requires. More importantly this book will serve as an educational tool for future generations of Swan River First Nation members as well as for the non-Aboriginal population. It is hoped that this book will foster a better understanding of Swan River First Nation's way of life by government, industry,

and the average Albertan citizen that will lead to more productive working relationships and put an end to the ignorance that often fuels racism.

From the work completed for this dissertation Swan River First Nation also had an interim land use plan prepared. The cultural wellbeing of Swan River people is linked to the land and thus the 'management' of their traditional territory is of utmost importance to them. The Province has functioned without a 'land use plan' for over the past one hundred years and as a result the traditional territory of Swan River First Nation has seen significant negative impacts from forestry, oil and gas, the Swan Hills Waste Treatment Centre, transmission and transportation corridors, agriculture and tourism. The creation of this interim land use plan aims to protect Treaty Rights to hunt, trap, fish, and gather and to promote cultural sustainability. Because Swan River First Nation are land based people this is more than just a land use plan- it is a survival strategy.

Utilizing Swan River First Nation traditional knowledge, archaeological signatures of subarctic land and resource use were discussed and a methodology was created for modelling high archaeological potential. This is important work for a number of reasons:

- subarctic archaeology is poorly understood in Alberta;
- there continues to be large scale industrial development in northern Alberta requiring extensive archaeological survey and mitigation; and
- traditional knowledge holders are rapidly passing away without having transferred their knowledge to the younger generations.

As stated in the epigraph of this dissertation:

> "Indigenous peoples have the right to practice and revitalize their cultural traditions and customs. This includes the right to maintain, protect and develop the past, present and future manifestation of their cultures, such as archaeological and historical sites, artifacts, designs, ceremonies, technologies and visual and performing arts" (United Nations General Assembly 2007).

Just as in the above quote Swan River First Nation is striving to:

- maintain past land use as passed on from the Elders (and as identified via archaeology);
- protect present land use from industrial development, environmental degradation, and other infringements; and
- develop future land use in the form of a plan in the face of the Province's lack of stewardship over their traditional territory for which they signed a Treaty.

In this dissertation the topic of Swan River First Nation land use was examined in a way that:

- contained multivocality (western science and traditional knowledge);
- was interdisciplinary in nature (ecology, botany, zoology, archaeology, anthropology); and
- covered diverse temporal dimensions (past, present, and future).

Through this approach a number of diverse objectives were met that in isolation of time, perspective, or discipline could have never been accomplished.

Summary

In chapter 3 it was shown how archaeologists began to fill the 'vacant core' left by anthropologists in Canada when they started facilitating traditional land use studies with First Nations. It was through these experiences working with First Nations that many archaeologists, me included, became interested in Indigenous archaeology. To avoid the pitfalls of Indigenous archaeology (as outlined by McGhee (2008)), I utilized a collaborative approach where traditional knowledge and western science received equal weight and were not placed in adversarial contexts.

In chapter 6, traditional knowledge is utilized to explore current infringements to practising Treaty Rights (traditional land use) and the current context of Aboriginal consultation, charged with identifying and mitigating impacts to Treaty Rights, is discussed. This is built on in chapter 7 where land use plans, utilizing traditional knowledge and western science, are created. Severe infringements on land use (constitutionally protected Treaty Rights)

from industrial development, has had negative social, cultural, and physical impacts on Swan River First Nation. For Aboriginal consultation to be effective in Alberta, cumulative effects assessments at the traditional territory level and culturally sustaining land use plans are an imminent need. Consultation done on a site by site basis does little to assess impacts to Treaty Rights.

In chapter 8 some archaeological signatures of subarctic land use are discussed and the effects of culture change on these signatures are explored. It is demonstrated how the use of traditional knowledge within the discipline of ethnoarchaeology is an important arena for obtaining an understanding of the forces driving culture change and ultimately changes to archaeological signatures and land use patterns. Chapter 8 also discusses Aboriginal consultation with regards to heritage resources in Alberta, highlighting how the success of the current approach relies on nations having had shared important sites with the government who, in turn, then determine when and with whom consultation will take place. Until a more collaborative and meaningful policy and guidelines are created, Alberta Culture and Community Spirit should be providing notice to nations when a permit is issued in their traditional territory. Once notified the First Nation can then decide how they would like to proceed and contact the proponent if so desired. Chapter 9 outlines some of the ways that a First Nation may choose to be involved in archaeology including an analysis on the relationships between current traditional land use sites and archaeological sites and modelling based on landscapes and vegetation communities central to First Nations lifeways.

Next Steps

Traditional land use, which I believe to fall under the umbrella of Indigenous archaeology, is a relatively new field and few university archaeology undergraduate programs prepare students to undertake such research. A program designed to properly prepare students would require them to take a number of courses in addition to archaeology in such departments as botany, zoology, ecology, Indigenous studies, linguistics, cultural anthropology, and law. Fourth year classes and independent research projects would be highly interdisciplinary. Field school requirements would include (in addition to

archaeological survey and excavations) vegetation and wildlife identification and surveys, cross cultural awareness training courses offered on reserve, and traditional knowledge collection with First Nations communities both in the form of interviews and recording traditional land use sites. Cooperative placements would be designed to expose students to a combination of government, industry, and First Nations organizations to gain a diversity of perspective and create relationships for future employment.

Once students have received the proper training and experience, they may wish to find employment within the field of traditional land use and Aboriginal consultation with government, industry, or First Nations. In any of these positions they will likely find themselves being a bridge between different ways of knowing, different ways of understanding and different priorities. This will also be the case for those students who, through exposure to traditional and use studies, find themselves pursuing careers in Indigenous archaeology. The challenges that Alberta will face in the next fifty years regarding land use and the protection of Treaty Rights will best be met through meaningful consideration of diverse ways of knowing, understanding, and priorities. Fostering diversity is the best way to overcome the challenges posed by the future.

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APPENDICES

Appendix 4.A Ethics Clearance/Certificate

Appendix 4.B One on One Interview Guide

Introduction:

- Name
- Place and Date of Birth
- Family history (grandparents etc.)

Traditional Land Use:

- Sites
    - Camping
    - Fishing
    - Hunting
    - Plant collecting
    - Trapping
    - Ceremonial
    - Other
- Place Names
- Annual round
- Trails and Travel
- Impacts from other land users (forestry, oil and gas, agriculture)

Traditional Resources:

- Food
    - Big game, fish, fur bearers, waterfowl, chickens, rabbits, berries, roots, etc.
- Medicinal
- Spiritual
    - Ceremonies etc.
- Material culture
    - structures, canoes, sleds, tools and equipment, clothing, toys and games, crafts, fire

Cultural Wellbeing:

- Health
- Family
- Traditional Values
- Traditional Foods
- Language
- Residential School
- Amount of land required to allow for cultural wellbeing and suggested areas

Appendix 4.C Water Workshop Question Guide

- past water quality and quantity
- current sources of clean water
- what bad, dirty or contaminated water looks, tastes, and smells like
- areas where the water is bad, dirty, or contaminated
- changes to water quality and perceived causes
- changes to water quantity and perceived causes

Appendix 4.D Small Group Sessions Question Guide

- Where do you practice your Treaty Rights?
- What infringements to practicing your Treaty Rights have you experienced?