Aboriginal Land Use Patterns in the Boreal Forest of North-Central Manitoba: Applications for Archaeology

by

Jordyce A. Malasiuk

A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

MASTER OF ARTS

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University of Manitoba
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A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of Manitoba in partial fulfillment of the requirements of the degree

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ABSTRACT

This thesis presents a set of ethnohistoric reconstructions of Aboriginal land use patterns in the interior boreal forest of north-central Manitoba. In the boreal forest, the ways that people used the land varied seasonally. Land use could also vary for people of different cultures, and would change over time as those cultures changed. In order to highlight this variability, the seasonal rounds of the settlement and subsistence activities of both the Rock Cree and of the seasonally resident Caribou-eater Dené peoples are hypothesized for the Late Woodland Period (c. 1300 to 350 B.P.). Changes to these seasonal rounds in response to changing economic and social conditions of the European fur trade and to resulting changes in the resource base are considered in reconstructions of the Cree and Dené seasonal rounds during the Early Fur Trade Period (c. A.D. 1611 to 1820).

These reconstructions have been developed based on a detailed study of ethnographic, historical and emic sources of data on both the Rock Cree and Caribou-eater Dené and culturally similar Algonquian and Athapaskan peoples in similar environments. The details on land use activities and criteria for site selection contained within these diverse sources have been reviewed, evaluated for consistency and relevance to the study region, and synthesized to produce the reconstructions of seasonal land use presented.

Attention is paid to how different peoples were interacting with their environments, i.e. what activities were being located where, when and why. Thus, study of these reconstructions can help increase our ability to understand, explain and predict archaeological site distributions and the underlying systems of land use in a boreal forest environment. Suggestions are made for how this might be done through the use of predictive modelling. Minimally, these ethnohistorical analogues call attention to those types of locations that could be expected to have moderate to high potential for specific uses, but which have been traditionally under-represented in archaeological survey because of the "archaeological invisibility" of those activities and/or survey bias.

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DEFINITION OF TERMS

Area	Aside from its common use, 'area', in this study, is defined as the intermediate scale in the spatial definition of peoples' land use. Roughly equivalent to the "resource catchment" of an archaeological site (the area surrounding a camp, accessible within a specified distance or travel time, from which the residents acquired food and other resources). Defined, in part, by the distance individuals were willing and able to travel out from a camp site on a day to day basis in order to meet their resource needs.
B.P.	A measure of time: Years 'Before Present'. When radiocarbon dates are being referred to, 'present' is equivalent to c. A.D. 1950.
CDAP	The Churchill Diversion Archaeological Project. An ongoing, large-scale program of archaeological survey and mitigative excavation conducted along the shorelines of rivers and lakes affected by the diversion of the Churchill River into the Nelson River and related developments by Manitoba Hydro in 1976.
Early Fur Trade	For the purpose of this study, the Early Fur Trade Period is defined as that period beginning with the first direct contact of the Aboriginal peoples west of Hudson Bay with European traders (A.D. 1611). It encompasses the trade periods from the earliest, indirect trade west of Hudson Bay (A.D. 1611-1667), the period of regular trade on Hudson and James bays (A.D. 1668-1733), through the periods of early inland trade (A.D. 1734-1772) and inland competition between the rival Hudson's Bay, French, North West and XY Companies (A.D. 1773-1820). The Early Fur Trade Period is defined here as ending in A.D. 1820-21, the year of the amalgamation of the Hudson's Bay and North West Companies.
Ethnohistory	The use of a combination of historical and anthropological methods for the reconstruction, study and explanation of the history and development of a people. In North America, ethnohistory is often used for the study of the effects of the history of European contact on Aboriginal peoples.
HBC	Hudson's Bay Company (established A.D. 1670). The "Company of Adventurers" trade company based initially out of England.
Inland	Geographically, 'inland' is used in this study in a number of ways: Inland from Hudson Bay refers to that broad region outside of the coastal region of Hudson and James bays and their immediate surroundings. Inland lakes refer to those lakes not directly located on a major river system. Inland, with reference to any water body, is defined as the land laying between water bodies: that land located back from the shoreline and from a narrow band of land immediately adjacent to the water body (which may include the beach and terraces of a shoreline, for example).

Land Use	Human behavior which is at least partially patterned with respect to perceived characteristics of the bio-physical landscape, i.e. how people use the variable landscape and its resources for different activities, under variable conditions in time and space. In archaeological studies of land use, activities related to subsistence and settlement are commonly emphasized.
Late Woodland	Late Woodland aged culture composites have been defined as those late precontact archaeological cultures which can be traced to postcontact times and may be identified with historically-documented peoples, such as Cree, Dené, Ojibwe or Assiniboin (Historic Resources Branch, 1989: "Woodland Period"). In the study area, these cultures are estimated to date from approximately 1300 years B.P. to contact (c. A.D. 1611), and are represented primarily by the 'Blackduck', 'Selkirk' (both the 'Kame Hills' and 'Clearwater Lake' complexes), and 'Late Taltheilei' archaeological composites.
Location	In this study, 'location' is defined as the smallest scale in the spatial definition of peoples' land use. The specific place at which some item, feature or activity is located.
Model	In this study, models are defined as simplified conceptual representations of an existing or previously existing thing, system or process. Models may be empirically descriptive, or theoretical. In this thesis, the ethnohistoric reconstructions of land use presented are theoretical constructs, as the systems of land use represented are in the past and can no longer be directly observed and measured. Note: The activities hypothesized in the presented reconstructions can be tied into a real context, by identifying in the empirical landscape existing regions, areas and locations matching those hypothesized as having been used for specified purposes. In this way, these reconstructions have the *potential* to be developed into operational, and thus predictive, models. Without linking them into the existing landscape in this way, they remain non-operational.
NWC	North West Company (first established prior to A.D. 1780). A Canadian trade company based out of Montréal - chief rival of the Hudson's Bay Company west of Hudson Bay.
Postcontact	The period of time following the first direct and regular contact between the Aboriginal occupants of a specific region and newly arriving Europeans. The period for which direct observations of the Aboriginal peoples were made by the newcomers, for which written records exist. Roughly equivalent to the 'Historic' period in North American archaeology. The age of this period may vary from region to region.
Precontact	That period of time prior to European contact with or influence on the Aboriginal populations of a given region. Roughly equivalent to the label 'Prehistory' often used in North American archaeology.

Protocontact	That period of time following the arrival of Europeans in North America and the first (indirect) influence of their presence on Aboriginal populations within specific regions not yet directly contacted. For a given region, the Protocontact Period ends with the first direct contact between the Aboriginal occupants of the region with European newcomers. Roughly equivalent to the term 'protohistoric' in North American archaeology.
Region	In this study, 'region' is defined as the largest scale in the spatial definition of peoples' land use. A large tract or zone of land defined by broadly similar ecological characteristics and often defined by some bio-physical or socio-political boundaries (e.g. the territory encompassing the forested lands between the Churchill and Nelson rivers west of the Hudson Bay Lowlands).
Site	An archaeological site. For the purpose of this study, a site is defined as any location bearing physical evidence of past human activity.
XY Company	"Sir Alexander MacKenzie and Company". A Canadian trade company set up in opposition to the HBC and NWC in the years between A.D. 1794 and 1804.

1. INTRODUCTION

The boreal forest of north-central Manitoba is a densely wooded, subarctic landscape of vast proportions. Home today to many people of both Aboriginal and non-Aboriginal descent, it possesses a rich and complex history of human occupation and use, reaching back hundreds of generations into 'time immemorial.' This history cannot be denied. Literally hundreds of sites spanning thousands of years in time - ranging from isolated artifacts to rock paintings to large, complex, multi-component habitation sites - have been recognized and recorded throughout this region.

A huge amount of information reflecting the considerable extent and diversity of Aboriginal occupations of this region has been gained from archaeological survey, excavation, and analysis of the materials recovered. Much still remains to be understood, however, regarding the nature of those occupations. We have so far only begun to touch on all the details of how each of the culturally-distinct peoples lived in and used the boreal forest; how they interacted with their physical surroundings, with each other, and with the spiritual realm; how each site used by a group of people fit into the wider pattern of their regional land use; and how all this changed over the generations.

The study of archaeological site distributions has long been recognized as a valuable approach to interpreting site functions - both in light of their environmental context and their relationship to one another - and for recognizing their interrelationships as components of an often complex regional land use system. Because the ways in which people distribute themselves and their activities across a region vary with biophysical characteristics of the environment, with the technology and subsistence strategy of the people, their social system and their view of the spiritual world, the site distribution patterns reflecting their regional land use can be treated as a potential source of information about related aspects of human behavior (Trigger, 1968:54; 1989:282,284; Willey and Sabloff, 1993:172,173).

In order for such a study to be possible, however, a representative sample of sites from throughout the region must be discovered and documented. This is because people

practicing a hunter-gatherer economy, a mode of subsistence expected to characterize the precontact Aboriginal populations of the boreal forest, tend to be mobile. They choose to move in response to factors (social, spiritual and ecological) which vary across space and over the course of the year or years. Different activities are often carried out in different locations chosen for characteristics which they possess which are necessary or desirable for an activity or set of activities. Seasonal changes in the availability or quality of specific subsistence resources, in the activities which are to be carried out, and in the environmental conditions to be dealt with underlay the seasonally patterned movements which make up what is known as the annual or seasonal round of activities of the people.

Because of this mobility, no one archaeological site will ever represent the full range of activities carried out by any group, no matter how big and impressive the site happens to be (Binford, 1983:109). Because of the variability of site use at different locations, whole regions must generally be considered before a more complete picture of the cultural system - represented by a more comprehensive range of activities - can emerge to be documented and interpreted (Binford, 1980:12; Trigger, 1989:284). Because the way that people use the land varies over generations of time and for different cultures, a representative sample of activity locations should also be discovered or otherwise determined separately for each culture and time period of interest represented in the region. Such representative site samples are uncommon within the boreal forest.

The vast majority of known sites in north-central Manitoba have been recorded as part of the mitigative Churchill River Diversion Archaeological Project (CDAP), the largest-scale project to have been carried out in this region (Kroker, 1990:183,184). The encompassing surveys of the shorelines of a significant number of the major lakes and rivers of north-central Manitoba, and involving, to date, seventeen field seasons of survey and excavation, have been, perhaps, the most extensive and intensive archaeological project anywhere in Canada's boreal forest.

In spite of the intensity of the CDAP, survey has been limited primarily to the shorelines of those major lakes and rivers affected by flooding and erosion resulting from hydro-electric developments. It remains to be seen what might be found farther inland from the major water bodies and in other under-surveyed parts of the region, if there was time and budget enough for an even more thorough investigation of these locations.

Such bias is characteristic of most boreal forest surveys, however - not just projects like the CDAP which are restricted by their mandates to survey only the shoreline environment. The lack of representative site samples within the boreal forest can be attributed in part to characteristics of the boreal forest itself. Comparatively little work has traditionally been done in this particular ecological zone, for quite mundane reasons; surveying suffers because the dense vegetation of the forest and the boggy conditions of the muskeg make movement over the landscape in the summer months difficult, and the insects make it unpleasant. The same factors of dense vegetation and bog make discovery and excavation of archaeological sites challenging; site survey is typically limited to the shoreline environments and the occasional overland trail. The logistical difficulties and the common need for boat travel from distant communities can make extensive survey prohibitively expensive. Even under the most ideal of conditions, the large size and heterogeneous nature of the boreal forest makes it unlikely that representative coverage will ever be carried out for the region as a whole (Hamilton and Larcombe, 1994:53; Ives, 1982:95,100).

Regardless of the nature of the work done, additional problems for good archaeological understanding of the region can result from the effects of the boreal forest environment on archaeological deposits. This includes the slow rate of deposition of most boreal forest soils and the regular occurrence of forest fires. Organic materials (wood, bone, fish scale, leather, textiles and seeds, for example), which can tell us so much about the activities conducted at a site and the season of its use, as well as being the sole source of radio-carbon dates, do not preserve well in the boreal forest (Dawson, 1983:55; Hamilton

and Larcombe, 1994:53). Finds of even the tougher organics like bone and antler tend to be limited to those which were rapidly buried either by flood deposition, or through intentional burial or caching as in the case of grave goods (Brownlee and Syms, 1999:17,37; Syms, 1998).[1] All of this tends to result in an incomplete and biased archaeological record.

It is as a result of these limitations that there are so many problems of interest to archaeologists which have yet to be satisfactorily solved about the peoples occupying the boreal forest of north-central Manitoba and their ways of life. The solutions to these questions will continue to be elusive until a more representative sample of archaeological materials, in all of their temporal and spatial contexts, has been acquired, or can at least be envisioned.

Given the difficulties of discovery and interpretation of archaeological sites in the boreal forest, it is quite desirable to be able to make reliable predictions about the site distribution patterns of precontact and early postcontact populations in this region. One set of methods which has been suggested as particularly useful for this purpose is archaeological predictive modelling. These are models which "attempt to predict, at a minimum, the location of archaeological sites or materials in a region, based either on a sample of that region or on fundamental notions concerning human behavior" (Kohler and Parker, 1986:400).

Predictive modelling might be used not only to predict site distributions in this way, increasing the quantity and range of sites which can be discovered, but to also make sense of those distributions. If the predictions are based on ethnography or theory ("fundamental notions concerning human behavior"), that theory may be used in turn to interpret the land use activities and choices responsible for those sites and their locations. In the boreal forest, where it can often be difficult to discern the nature, function and seasonality of sites, such a method could be of considerable service (Hamilton et al., 1994:1,2; Hamilton and Larcombe, 1994:2,53; Hanna, 1974:3).

It must always be remembered, however, that predictive models are only hypothetical constructs. Before they can be used with confidence for predicting or explaining the locations of sites in a region, they must be assessed for accuracy and completeness. The most straightforward way of doing this is to apply the model to a test area which contains environmental variability comparable to that of the region as a whole. An unbiased survey of the test area, including careful investigation of a sample of locations representative of that environmental variability, is made and the predicted site locations are compared to those observed.

Still, tested or not, simply working out a predictive model based on ethnohistoric or general theoretical reconstructions of past land use systems can aid the development of archaeology in the boreal forest of north-central Manitoba. In looking beyond artifacts and sites, by delving into ethnohistoric research of the peoples of the boreal forest, or by considering more general theory on the nature of hunter-gatherer land use, archaeologists' perception of how people *may* have been living and interacting with their biophysical, social and spiritual environments in this and similar regions can be expanded. As stated by Trigger, "...(T)he best use that can be made of ethnographic analogy ... is to broaden the archaeologist's awareness of unsuspected alternatives in the possible significance of his data" (1971:324).

Development and use of such a theory-based model should help encourage archaeologists to think about the archaeological sites and materials in a more 'anthropological' way, in terms of their possible roles within a whole cultural system. Additionally, by expanding the perception of how people might have been using the land around them, a theory-based model could lead archaeologists to more carefully investigate environmental contexts which have traditionally been under-surveyed. This could potentially lead to the discovery of sites which would been missed if survey continued to be restricted to the shorelines (Dalla Bona, 1994b:2).

It is the aim of this thesis to present a reconstruction of Aboriginal land use which could then be used as a basis for making predictions of and interpreting archaeological site locations in the boreal forest of north-central Manitoba. Data from a variety of ethnographic, historical, archaeological and emic sources have been consulted, evaluated and synthesized in order to produce an ethnohistoric reconstruction of seasonal land use by the traditional year-round and seasonal residents of this region - the Rock Cree and the Edthen-eldeli or Caribou-Eater Dené (eastern Chipewyan), respectively - for the Late Woodland through Early Fur Trade (early postcontact) periods.

Although, by necessity, the sources consulted for the development of these reconstructions have included many that refer to peoples in the northern forests outside of north-central Manitoba, the latter was the intended area focus. One region of particular interest for this study is the land surrounding the Southern Indian Lake section of the Churchill River (56°20' - 57°40' N, 98° - 100° W), a region which has been the subject of intensive archaeological investigations in reaction to the diversion of the Churchill River. The large site inventory resulting from the activities of the CDAP provide an ideal opportunity for development of an observation-based predictive model which could be compared to, and used to complement, predictions which could be based on the reconstructions of land use presented here.

Because different peoples are expected to have used the land in different ways, separate reconstructions of land use have been presented for the Cree and the Dené peoples of northern Manitoba. And because land use patterns, like all aspects of human culture, change over time, separate reconstructions for each group have been presented for each time period considered. In order to keep the study manageable, these have been restricted to the Late Woodland (beginning about 1300 years before present and ending with European contact) and the Early Fur Trade (tentatively dated for this study from A.D. 1611 to 1820).

Limiting this study to these more recent periods is desirable as there do not seem to have been any significant long-term environmental changes in north-central Manitoba that

would have to be reconstructed and which would be expected to have resulted in significant change in the use of the region (Bryson and Wendland, 1967:279; Ritchie, 1983:168). Because sites assigned to the Late Woodland period and later can be identified with ethnographically known groups (for example, 'Selkirk' with Cree; 'Taltheilei' with Dené), this limit additionally makes the use of the area's ethnographic and historic record as a source of hypotheses about land use patterns more reasonable than if the reconstruction were developed for much earlier periods, since including the earlier periods may result in considerably more cultural change to be considered.

The ethnohistoric reconstructions to be presented here, of course, represent the results of only one stage in the process of predictive modelling of archaeological site locations - a process with the potential to describe, predict and explain site distributions in the boreal forest of north-central Manitoba. Likewise, being restricted to reconstructions of Cree and Dené land use during the Late Woodland through Early Fur Trade archaeological periods, they cover only a portion of the human history of the region.

Simply bringing together this sizable body of data on Aboriginal land use in the boreal forest, however, can be considered a significant contribution to this process and, potentially, to our ability to understand and appreciate the heritage of this region. Although hypothetical seasonal rounds have been presented in the context of archaeological reports of this region, these have been quite general; comparatively little detail has been presented in these to indicate the substantial variety inherent in the ways people may use the land for different purposes in different seasons and how this can vary across space, time and culture. By developing detailed reconstructions of land use and giving voice to some of this variability, a more complete picture of the human occupation and use of this region can emerge.

The ethnohistoric reconstructions presented, although designed specifically for use in the construction of theory-based predictive models of the Late Woodland and Early Fur Trade archaeological sites, could also be used as a starting point for the construction of

similar predictive models for other boreal forest peoples in other time periods. Land use, like other aspects of human culture, changes over time and so a reconstruction of those patterns for one culture period is unlikely to be wholly applicable to another. The testing of predictive models based on these reconstructions, on the other hand, would attest to how well or poorly the reconstruction applied to each culture period. Analysis of test results would, in theory, indicate how much land use has changed, and may even provide hints regarding the nature of those changes.

2. BACKGROUND TO THE STUDY.

2.1 Archaeological Research in the Boreal Forest of North-Central Manitoba.

The boreal forest of north-central Manitoba has been subject to considerable archaeological investigation over the past three decades. Most of this work has been mitigative - carried out primarily in response to hydro-electricity projects in various locations within the region which have threatened the local archaeological record. There was comparatively little survey or excavation work undertaken in the region until this time.

2.1.1 Archaeological Investigations to 1969.

The first published archaeological discovery made in the boreal forest of northern Manitoba consisted of an unanticipated find of some fragments of Aboriginal pottery found at the mouth of the Nelson River by Robert Bell of the Geological Survey of Canada in 1878. It was not until 1936 and 1937 that pottery discoveries from along Reindeer Lake and near The Pas were similarly found by P. G. Downes, a wilderness tripper, and made public (Kroker, 1990:35).

By the late 1940s, archaeological evidence of significant occupation of the boreal forest regions of Manitoba had begun to stack up. Manitoba Archaeological Society avocational activities - including the first archaeological survey in the region, conducted along the Hayes River by Walter Hlady in 1948 - led to the recording of over 40 shoreline sites in different parts of northern Manitoba. Some of these sites were test-excavated in order to reveal the then little-known chronological information. While these investigations were made over an extensive area, the first intensive survey and excavation activities did not begin in this region until 1961, with Mayer-Oakes's mitigative study of the Grand Rapids Reservoir impact area (Kroker, 1990:36,37; Mayer-Oakes, 1967:353,355).

J. V. Wright of the National Museum of Canada was also active in the region in the 1960s, surveying the middle Churchill River and portions of Southern Indian Lake. Between 1963 and 1966 he recorded thirty-six sites in the Southern Indian Lake area, and

excavated two of these (Kroker, 1990:37,38; Wright, 1971:1). Based on the findings of these surveys, he hypothesized that the well-represented 'Selkirk' composite (including, at that time, the 'Clearwater Lake' and 'Grass River' complexes) was associated with the ancestors of the Cree people who occupied the region at the time of first contact with the Europeans. This tradition goes back in the Southern Indian Lake region perhaps as much as 1000 years (Wright, 1971:1,3). The Selkirk-Cree association had previously been suggested by MacNeish in 1958, working in southern Manitoba (Meyer and Russell, 1987:25); the work of Wright further supported this hypothesis, extending it into the north. No evidence has since been found to dispute this Selkirk-Cree association or the long history of the Cree in the area (Meyer and Russell, 1987:25).

Avocational archaeological work continued throughout the 1960s in northern Manitoba. Wright also returned, this time focussing on the 'Shield Archaic' occupations around Gods Lake. Extensive surveys for rock painting sites were made along the shorelines of the Hayes and Churchill rivers, and around other bodies of water in the area. This makes up the bulk of the research conducted in Manitoba's northern boreal forest prior to the activities of the CDAP (for more detail see: Hlady, 1970:97; Kroker, 1990:37,38; Mayer-Oakes, 1967:353-355).

By the end of the 1960s, archaeological understanding of Manitoba's boreal forest consisted of broadly chronologically-ordered descriptions of cultural composites and complexes summarized by Hlady (1970): Shield Archaic, McKean, Laurel, Blackduck, Clearwater Lake and (the now defunct) Grass River. Description of the associated cultures was largely limited to lists of the types of artifacts found associated with each at the surveyed sites, estimates of their ages, and preliminary, general interpretations of their economies. Speculations on cultural influences from surrounding areas were made (e.g. Hlady, 1970:100) and some hypotheses were advanced concerning the geographic distribution and modern cultural affiliations of various complexes (Hlady, 1970; 1971). [2]

As an example, following his surveys of the Southern Indian Lake region, Wright

(1971:22) wrote of the Selkirk occupations there:

> The archaeological remains from the Southern Indian Lake region appear to be the product of locally nomadic Cree families who possessed a relatively limited and simple material culture as seen by archaeology. There does not appear to be any drastic change in their culture until the historic period, when the paste and surface treatment attributes of the ceramics were markedly altered. The overall impression is of very gradual changes taking place in a semi-isolated population, which was fully exploiting the local fauna with particular emphasis upon fish. It should be pointed out, however, that the apparent emphasis on fishing may well be a bias stemming from the virtual certainty that the archaeological sites described represent summer camp sites; the winter subsistence pattern may well have been quite different from that of the summer.

While archaeological knowledge of the region had increased greatly over twenty years, there remained much more to learn. A reliable and refined cultural chronology for the area was still to be established, and there was a lack of significant understanding of the lives of the peoples who had lived there and how they had changed over time. These became the academic aims of the mitigative Churchill River Diversion Archaeological Project activities (Dickson, 1972:20,35; Riddle, 1994b:1).

2.1.2 **The Churchill River Diversion Archaeological Project, 1969-1976.**

The largest archaeological project in north-central Manitoba, contributing the most data to the archaeological inventory and understanding of this region so far, has been the Churchill River Diversion Archaeological Project (or CDAP). This project was originally initiated in 1969, out of concern over Manitoba Hydro's proposal to divert waters of the Churchill River into the Nelson River through portions of the Rat and Burntwood rivers and intervening lakes (figure 2.1). The diversion, which was to increase the hydro-electric power output of the dams already in place on the Nelson, would eventually flood thousands of kilometers of lake and river shoreline in north-central Manitoba, resulting in the inundation and erosion of archaeological sites in the impacted areas (Kroker, 1990:14). The original CDAP activities continued on a yearly basis until 1976, when the diversion of the Churchill River was put into effect. Kroker (1990) has produced an extensive and detailed

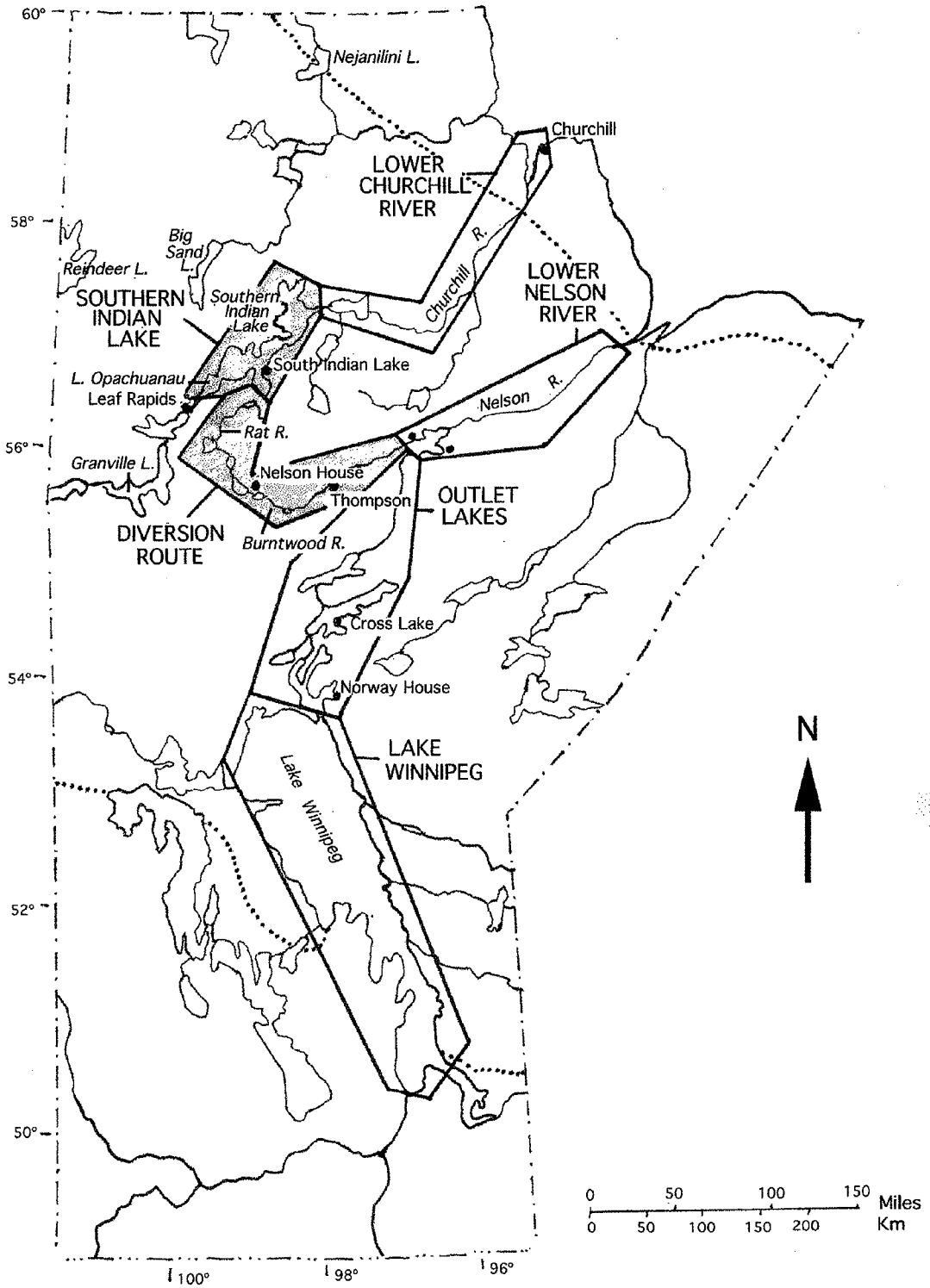


Figure 2.1 Churchill River Diversion Archaeological Project Study Region (after Kroker, 1990:8).

..... extent of boreal forest zones (after Shay, 1980:242).

summary of the activities and findings of the pre-diversion CDAP.

Like previous investigations, the CDAP surveys were concentrated along the shorelines of lakes and rivers. Being a salvage project, there was no leisure to survey beyond the level of the "highest anticipated inundation" of the diversion-affected shorelines. This became the boundary for the initial investigations (Dickson, 1972:7). The surveys were thus biased against any sites located above and inland of this boundary.

The greatest attention during these surveys was directed in many cases towards those types of locations along the shorelines which the archaeological crews and their guides, local people from the Cree communities of South Indian Lake and Nelson House, already considered to have the greatest site potential (for example, sand beaches and rock outcrop shorelines, points of land, near rapids or waterfalls, at the outlets of lakes, and at the confluence of streams). This somewhat selective surveying of high potential locations, with few exceptions[3] was a necessary evil given the huge area to be covered in only a few field seasons and the desire to collect as much site information as possible before the shorelines were flooded (Kroker, 1990:45; Wiersum, 1972:3). Additionally, the majority of sites were discovered through surface survey. As a result, there was a significant bias against finding any sites not exposed and thus not visible along these select shoreline locations.

Where time and conditions permitted, shovel testing of the terraces behind the beaches was also done, and mitigative excavations were carried out at 33 sites from among those endangered which appeared to have the most information to offer. In total, 315 archaeological sites were assessed or reassessed in the seven pre-diversion field seasons (Kroker, 1990: 145,146). This significantly increased the available archaeological data for the region. Kroker has estimated that 90% of these sites have since been adversely affected by flooding and/or erosion of the shorelines (Kroker, 1990:iii).

Between 1976 and 1990, only sporadic archaeological activity was carried out in north-central Manitoba. David Riddle continued to conduct small shoreline surveys of Southern Indian Lake irregularly, while visiting the community of South Indian Lake

(Riddle, 1994a:21). In 1984, 1985 and 1986, he also briefly visited Big Sand Lake on the South Seal River on the advice of William Dysart of South Indian Lake who had discovered more Aboriginal ceramics in the area (Kroker, 1990:40; Riddle, 1985:36). Aside from these opportunistic surveys, other archaeologists conducted a small number of archaeological impact assessments within north-central Manitoba during this period. Portions of the lower Nelson River were surveyed by Sid Kroker between 1985 and 1988. The Manasan Falls area near Thompson was investigated by Kroker in 1987, and, in 1990, an overland survey of a proposed transmission line was made by the same. Michael Kelly also investigated sections of the lower Nelson River, beginning in 1988 (Kroker, 1990:40,41). Additionally, data collected from the pre-diversion CDAP surveys and excavations were further analyzed and reported (Historic Resources Branch, n.d. [1998]:2; e.g. Dickson, 1983; Kelly, 1982; Tisdale and Jamieson, 1982; Wood, 1983; Wood and Wasnick, 1976).

While the majority of reports put out by researchers affiliated with the pre-diversion CDAP since its inception in 1969 were primarily descriptive (Pettipas, 1982:1), there was some attempt to interpret the nature of the occupation of the study region and the relation of site locations to people's hypothesized use of the resource base. For example, Dickson considered the resource base of the Kame Hills locality of Southern Indian Lake and suggested that it would have been "sufficient to support a high population density on a long term basis" (1972:47). This assessment was echoed by Wood for Southern Indian Lake in general, stating that the economic base was sufficient to support at least small groups of people year-round (1983:73).

Most commonly, connections were drawn between the productive fisheries of Southern Indian Lake and the apparently large, stable human population of the region. It was argued, on the basis of the significant clustering of sites from all time periods observed around productive fishing places, that fish had figured prominently in the subsistence of the residents of the boreal forest (e.g. Hanna, 1975:36,38; Mallory, 1975:2; Wood, 1983:23,27,73). It was also observed that large camps in the boreal forest tended to be

located where the people could take advantage of fish spawning runs (e.g. Hanna, 1974:8; 1975:38; Mallory, 1975:3; Tisdale and Jamieson, 1982:104; Wood, 1983:78), and that it was the reliable and rich fisheries of Southern Indian Lake, in particular, which allowed people to remain in that area for extended periods of time, rather than having to move from lake to lake (e.g. Tisdale, 1987:367). Likewise, the large sites surveyed at the north end of Southern Indian Lake were hypothesized to represent autumn gatherings of people. The presence of migratory caribou, waterfowl and spawning whitefish in this area was considered to be the favourable characteristic attracting large concentrations of people there in this season (Tisdale, 1987:367; Wood, 1983:78,79).

As noted, the economic base of Southern Indian Lake was considered adequate to support a regional band of hunter-gatherers year-round (Wood, 1983:73), and the ceramics of the Late Woodland Period did appear to represent the local dominance of a regionally distinct group of Cree in this region (Riddle, 1985:39; Wood, 1983:68,69; Wood and Wasnick, 1976:8). However, it was also recognized that Southern Indian Lake was likely only one portion of the territory used by this group, judging by the discovery of the characteristic ceramics in adjacent regions including lakes on the Rat and Burntwood rivers and Big Sand Lake on the South Seal River (Riddle, 1985:36,38,39). And while people may have been capable of economic self-sufficiency in the Southern Indian Lake region, it was evident that they also took part in an Aboriginal trade network which supplied them with high quality lithics and other materials from distant regions (Mallory, 1975:6,7).

Certain works were also produced which were intended to address specific questions regarding the nature of the occupation of the region. For example, what peoples were using the area, in which seasons, and how continuously? Studies were also made of how people in this region used the land as reflected in observed sites and artifacts or faunal materials, in order to learn more about the precontact economies and settlement patterns (e.g. Mallory, 1975; Orecklin, 1976; Tisdale, 1987; Wood, 1983). But none of these studies touched on any more than a portion of the range of land use behaviors documented

for living peoples and rarely attempted to address the wider cultural context of the regional land use system.

2.1.3 **Churchill River Diversion Archaeological Project, 1990 and onwards.**

In 1990, a burial recovery program was initiated on Southern Indian Lake by the Historic Resources Branch of Manitoba at the request of the community of South Indian Lake following discovery of a burial eroding from the flooded lake shoreline near that community. During surveys of the shorelines for other impacted and endangered burials, a number of archaeological sites not previously recorded were also observed. Realizing that the rapid, often selective surveys of the pre-diversion CDAP had been unable to discover all of the sites within the impact zone and that ongoing erosion was gradually revealing and destroying sites previously hidden from view, a new CDAP was begun by the Historic Resources Branch to continue this work.[4] In addition to allowing endangered burials and artifacts to be salvaged from eroding shorelines, these projects have once again added considerably to the archaeological database and so to the potential for understanding the history of the region (Historic Resources Branch, n.d. [1998]:3; Riddle, 1994a: 1,2,23).

Initially the new surveys concentrated on deep sheltered bays in Southern Indian Lake, i.e., 'high potential' locations which had not been extensively surveyed during the 1970s (Riddle, 1994a:26,27). Since then, the goal of the CDAP has been the more systematic reassessment of all impacted shorelines of selected portions of the northern diversion area (north of the Outlet Lakes locale), in order to provide an "inclusive inventory" of sites in the region (Riddle, 1994a:29; 1994b:6; Smith, 1995:1).

By the end of the 1993 field season, almost all of the affected shorelines had been re-surveyed more extensively than originally, so that in 1994 a shovel testing program was instituted to test for archaeological deposits in the backshore behind each surviving shoreline site (Smith, 1995). Additionally, mitigative excavation has been done at several sites endangered by erosion and identified through testing to be likely to provide more extensive data on the people who once occupied them. Surface survey of shorelines in the

CDAP region continues to this day (Historic Resources Branch, n.d. [1998]:3).

Between 1990 and 1997, 54 burial sites and an additional 413 archaeological sites were recorded throughout the northern diversion region (Historic Resources Branch, n.d. [1998]:3) (details for the 1990 to 1997 field seasons can be found in: François et al., 1995; Riddle, 1994a; 1994b; 1994c; 1994d; 1996; 1997; Smith, 1995). This has more than doubled the pre-diversion site count from 315 to 728 archaeological sites, attesting to the importance of this continued work.

Not only have the number of recorded sites recorded grown, but with re-survey of known sites, the number of cultural complexes recognized at previously recorded sites has, in many cases, increased. A number of previously unknown tool types or new variations of known tool types for this area have also been identified (Riddle, 1994d:40), including newly recognized styles of pottery, an increased variety of projectile points, and bone and antler tools such as bone harpoons (Historic Resources Branch, n.d. [1998]:3). In sum, the accumulation of new evidence for the precontact habitation and use of the boreal forest of north-central Manitoba is great. For this reason, a reinterpretation of the region has been called for (Riddle, 1994d:22).

It has become increasingly evident that the culture history of the boreal forest in north-central Manitoba is far more complex than previously realized (Larcombe, 1997a:12; Riddle, 1994d:22). Distinctive varieties of artifacts may reflect specialized functions of the items or idiosyncrasies of the makers (Larcombe, 1997a:27), but they are also sometimes identified with distinctive groups of people, particularly when those varieties occur regularly in association with characteristic assemblages and are quite localized, possibly reflecting a local technological or stylistic development by a distinct group or band of people within a wider ranging culture complex. Analyses of artifacts collected during CDAP activities (both before and after the diversion) have led to the identification of dozens of such distinct artifact classes - many of which had not been recognized in the region prior to 1990 (Historic Resources Branch, n.d. [1998]:3,4; Riddle, 1994d:22,40; e.g. Larcombe, 1997a:11;

Syms, 1998).

For example, based on intensive metric and non-metric analyses of 497 projectile points collected from the CDAP study region, Larcombe was able to identify 69 distinct varieties of point types (1997a; 1997b). Many of these varieties likely represent projectile points used for specific functions or activities, but it is also likely that there is greater diversity in the cultures represented by the points and by the artifact assemblages with which they were associated than previously recognized (Larcombe, 1997a: 13,27).

Another example of how the study of the increasing number and range of artifacts collected by the CDAP have increased our awareness of the complexity of the region's occupation history is Brandzin-Low's (1997) investigation and classification of Middle Woodland 'Laurel' pottery styles from regions throughout the Canadian Shield in an effort to work out the distribution and settlement dynamics of the people belonging to the Laurel culture composite. She has demonstrated that Laurel pottery is more abundant and diverse throughout north-central Manitoba than previously recognized.

As a result of these and similar studies of the artifacts and assemblages, "we can now recognize 39 different groups [of Aboriginal people in northern Manitoba], each with its own distinctive artifacts", while prior to 1990 only 14 such "cultural groups" had been identified within the region (Historic Resources Branch, n.d. [1998]:4). It is apparent that the technological and social dynamics within the region could not have been so simple as they once appeared.

Other studies include wide-ranging topics such as dietary reconstruction, analyses of the rarely-preserved bone and antler tools from burial caches, Aboriginal trade networks, and the spiritual or historical landscape in which people have lived. For example, Sherriff et al. (1995) carried out isotopic analyses of cooking residues on ceramic sherds in an attempt to determine what people were eating and what different functional styles of pottery (globular pots versus the flatter, oval 'plates' or 'lamps') may have been used for. The findings of this study further supported the hypothesis that fish formed a very significant

part of the diet of Late Woodland peoples in the Southern Indian Lake region.[5]

Study of cached items associated with burials removed from endangered shorelines have provided archaeologists with more detailed glimpses of the lifestyles and material cultures of peoples long ago. For example, Brownlee and Syms (1999) have produced a report on the possessions of a Cree woman who had been buried beside Nagami Bay on Southern Indian Lake, around 300 years ago. Many of the items left with her were made from organic materials which would normally not have been found on a boreal forest site. Investigation of the woman's possessions supported the idea that although "(a)ll of the necessities of life were provided for the Rock Cree in their territory" (Brownlee and Syms, 1999:5), the people occupying the Southern Indian Lake region were also involved in a far-ranging trade network, represented in this case by exotic stone from sources as far as 1600 km away (Brownlee and Syms, 1999:8). Similar evidence of an extensive Aboriginal trade network has been found through the analyses of items from other caches throughout northern and southeastern Manitoba, some of which date back thousands of years (Syms, 1998).

The Nagami Bay burial also provided an image of how European items were being incorporated into Cree life during the Protocontact Period west of Hudson Bay. It appears that a few European items were being added to the tool kits of the people, yet none of these were superseding Aboriginal material culture. Although new materials could be desirable, it is evident that the Cree were no more reliant on European trade at this time (direct or indirect) than they had been on the traditional Aboriginal trade which had provided them with higher quality stone materials and prestige items from far away (Brownlee and Syms, 1999:44,45).

Aboriginal rock paintings have been recorded along the steep rock shorelines of lakes and rivers throughout Manitoba, including sites within the CDAP study region. In 1981, Jones compiled a detailed description of the subjects and settings of all known rock paintings along the Churchill River. Steinbring (1998) later produced a similar but more

extensive work, his long-term study of rock art including all known sites in Manitoba. Theories on the origins and meaning of rock art, and interpretations of the subjects of the paintings, have been presented and assessed by Steinbring. By classifying the styles and subjects of the paintings and comparing these to previously dated petroglyph and pictograph sites elsewhere on the Canadian Shield, as well as comparing them to the art and symbols produced by historically documented groups such as the Midewiwin bark paintings of the Ojibwe, he also attempted to identify specific rock paintings with particular culture periods and ethnic affiliations.

Culturally important rock formations and other special sites from the Nelson House region have been dealt with from an Aboriginal perspective by Linklater (1994). Describing the cultural significance of such sites to the local Cree people, she demonstrates how these places are important or sacred because they are visible links to the ancient past: "they are natural features or landmarks at which some event in mythic time or in the near past has taken place. Together these events are timeless in their characterization of the land, providing a recognizable cartography through which stories are remembered, and by which one interacts with the landscape" (Linklater, 1994:1,2).[6] In her thesis, Linklater illustrates how a place may be of great importance to a people, even when there is no archaeological evidence to distinguish it from any other site. It is not the physical feature - the evidence of the historical event - which is most significant to the Cree people, but the place itself (Linklater, 1994:78).

As illustrated above, the activities of the CDAP, both pre- and post-diversion, have greatly augmented the amount and range of archaeological data available for interpretation of the history of this region. Although details remain to be further worked out, recent summaries of the archaeological history of Manitoba have begun to reflect some of the changing perspective on the history of the boreal forest (e.g. Manitoba Heritage Network, 1998). These summaries have been incorporated into the archaeological history of the study region, presented in Chapter 4 (Section 4.3.2). Still, the majority of studies made to

date have been concerned primarily with analysis and interpretation of artifacts, or descriptions and interpretations of specific, individual sites. Another source of information has remained relatively untapped: the study of the peoples' settlement systems and land use patterns, reflected in the distribution of archaeological sites across the region, and in their environmental settings.

2.1.4 **Questions Remaining to be Answered.**

For all the information that has been made available, there still remain many gaps in our understanding of the peoples who lived in this huge area in past times, of how they lived and how they changed over the generations. More in-depth study of site distributions and consideration of their meanings in light of history, ethnographic analogy, or theory applicable to the region could help to fill in some of these gaps. In particular, this approach could help answer questions concerned with the functional and/or seasonal interpretation of sites, and related to this, with the interpretation of the seasonal rounds of a people, the extent and intensity of their occupation of a region, and the nature of changes in peoples' land use over time or across space.

With regard to understanding past land use patterns in the boreal forest of north-central Manitoba, a number of observations on the nature and distribution of different types of recorded sites have been made over the years, and some preliminary interpretations of these have been suggested in CDAP reports. For the most part, however, these have been sporadic and have not been followed up by further study. As many questions as answers, it seems, have resulted from the information which has been gathered within this region. Some of these hypotheses and questions are summarized below.

Regarding the Late Woodland occupation of the region, it has been suggested on the one hand that the Southern Indian Lake area may have been almost exclusively used by a regionally discrete band of Cree who spent most or all of the year in various locations about the lake (e.g. Wood, 1983:7; Wood and Wasnick, 1976:8). Alternately, it is possible that the region might have been occupied by more than one culture group - perhaps precontact

Cree and Dené populations - alternatingly, or even contemporaneously (e.g. Bellhouse, 1971:14; Wood, 1983:10). In fact, given the recognition in many parts of the region of a variety of different styles of artifacts of both Late Woodland 'Selkirk' (Cree) and the parallel-aged Middle to Late Taltheilei (Dené) cultural affiliations (e.g. Larcombe, 1997b), this seems quite likely. Different annual rounds of activities practiced by different groups might result in these peoples' being, in any given season, in areas spaced widely enough apart that contact and competition for resources may have been minimal, allowing for their co-existence (Bellhouse, 1971:14; Wood, 1983:10). These patterns of seasonal land use have yet to be determined, however, as does the extent and intensity of occupation of the region by different peoples.

Attempted reconstructions of the annual round of subsistence-settlement activities practiced by the pre- and protocontact Cree throughout the boreal forest have been quite general. They often hypothesize a spring or summer gathering at a location with good fishing resources, followed by a dispersal of the population into smaller family groups to hunt and keep on the move during the winter months, with periods of variable hunting, fishing and travel in the spring and fall (e.g. Martijn and Rogers, 1969; Smith, 1981a). There have been some attempts to interpret the distribution and nature of sites in north-central Manitoba with reference to this pattern.

For example, Wood (1983:78,79) proposed that spring gatherings might be expected at locations of the spring pickerel spawning at the rapids on tributaries above Southern Indian Lake and suggested that large habitation sites might be found in such locations. He also suggested that the north end of Southern Indian Lake would have been an ideal location for a fall gathering. While people waited for the migratory caribou to come down from the barrens they could exploit the fall spawning runs of the whitefish in that part of the lake. The large and productive Kame Hills site (Dickson, 1972) at the north end of the lake may have been such a gathering site.

Large, multi-component sites are generally interpreted to be "seasonal habitation

sites" (Wiersum and Mallory, 1973:26), and they are expected to be found along the shores of lakes, perhaps slightly upshore from the beach (Riddle, 1972:8,9; 1994d:35). In contrast, any small and/or less productive site is often considered to be only a stopping place or a temporary travel camp, particularly when these are found along rivers and streams - considered more likely to be travel corridors than dwelling places (Riddle, 1972:9; 1994d:35; Wiersum, 1972:3,25; Wiersum and Mallory, 1973:7,26; Wiersum and Riddle, 1971:1; Wood, 1983:39, 63,64).

However, such issues as the season of occupation and the function of a site are difficult to determine from the archaeology alone. Dickson, for example, has noted that there is little to indicate whether the sites surveyed were only seasonally occupied or not, and if so, in which seasons (1972:37). This leaves unanswered questions: were large sites (whose existence were previously not even recognized in the boreal forest) the result of repeated seasonal use by a small group of people, or of an extended, continuous occupation, or of an occupation of short duration by a large group of people? And what was the nature of their activities there? (Dickson, 1972:46). It could not be assumed, for example, that all large, multi-component sites were seasonal base camps.

Without such information, interpretation of the nature of large sites could often only be speculative. Dickson called for further research into these and similar questions of site function and seasonality, which have not yet been looked into in as much depth as they could be. Until these issues are better addressed, the variability of archaeological sites and their inter-related roles within the larger land use systems will remain difficult to see.

As one example of observations made regarding issues of land use change and continuity within the boreal forest, several people have remarked on the association of fur trade post sites with large, multi-component or at least large Late Woodland sites. It seems to be generally agreed that the European fur traders located their posts to take advantage of the inevitable presence of the Native populations at customarily used aggregation sites or on the travel corridors to and from those sites (e.g. Meyer and Thistle, 1995; Smith, 1995:26).

In other words, it is expected that the traders took advantage of the continuity of land use patterns in the area. On the other hand, where a river locality exhibits greater amounts of postcontact materials than precontact, it has been suggested that people altered their routes of travel and seasonal activities in order to travel to fur trade posts not in their traditionally used territory (Riddle, 1972:3; Wood, 1983:63,64).

While the above statements are reasonable, the nature of the overall change in Aboriginal land use patterns with the introduction of the European fur trade is a debated subject. Some argue that there had been considerable continuity in certain patterns between the Precontact, Protocontact and early Postcontact Periods (e.g. Kelly, 1982:8; Meyer and Thistle, 1995). Others (e.g. Bishop and Ray, 1976; Hamilton and Larcombe, 1994:22; Ray, 1978; Trigger, 1989:390), while not necessarily refuting these claims, insist that more research is necessary before the possibility of significant settlement-subsistence change in the Protocontact Period can be dismissed. Continuity, they say, is something which should not be assumed, but should be demonstrated through investigation of the archaeological record, working backwards in time and tracing out any change or lack of it in the land use patterns.

These are all questions which could be addressed by an in-depth study of the distributions of archaeological sites in their environmental context, and an attempt to understand the land use patterns reflected, were there a representative sample of sites to examine. The activities of the CDAP, although biased towards the shoreline, have been considerably more systematic and extensive than any other attempts at discovering and documenting the heritage resources of Manitoba's boreal forest region. As already noted, the surveyed locations should be at least representative of a considerable portion of the types of locations found along shorelines of larger lakes and rivers and of the types of sites to be found in such settings. Still, there are no doubt gaps in the representation of sites. This only requires, however, that those gaps be identified so that future efforts might be made to fill them.

It is to these ends that theory-based predictive modelling could be usefully applied. Not only can these sorts of models be used to predict site location in regions without a fully representative site sample, but the theory or analogy on which their predictions are based can be used for the interpretation of those site distributions as well. Thus, predictive modelling becomes a tool for studying settlement and land use patterns as well. It has the potential to be quite useful in the boreal forest of north-central Manitoba . This approach will be further discussed in the following sections.

2.2 Predictive and Explanatory Modelling in Archaeology: History and Applications.

Study of the ways in which human populations distributed themselves and their activities across the landscape, as reflected in the somewhat regular patterning of archaeological materials both within and between sites, falls within the realm of what is known as spatial archaeology (Parker, 1985:173). This component of archaeological analysis has been developing for several decades.

The interest in the spatial context of sites arose largely in the 1940s and early 1950s in response to the increasing tendency to view the cultures of populations as adaptations to their environments. This view was influenced by Steward's Cultural Ecology in anthropology, and Clark's Economic Approach to archaeology. According to these paradigms, many aspects of a culture - including the peoples' decisions of where to locate their activities - were expected to have adaptive functions for the population's survival within a particular environment. Site distributions thus began to be studied in relation to their ecological contexts (Bettinger, 1980:190-193; Trigger, 1971:322,325; 1989:279). The broad theory that accompanied these initial approaches had some general explanatory power, but failed to consider the variability inherent in environmental systems or the complexity of the many possible cultural responses to these systems. They were unable to explain specific responses in specific contexts and, so, remained essentially non-predictive (Trigger, 1971:327).

Influenced by Steward and cultural ecology, Willey carried out a study in the Viru Valley of Peru (1953) which has often been cited as the first systematic survey of settlement locations in their regional context (Chang, 1972:1; Knudson, 1978:409; Trigger, 1971:331; Willey and Sabloff, 1993:172). Willey analyzed the site distributions in an attempt to determine the context and function of the different sites in their regional setting. He found that he could interpret not only ecological relationships between the site locations and environmental variables, but that he could also find patterns reflecting the economic, social, political and ideological relations between contemporaneous settlements. This convinced him of the great potential of settlement studies for archaeological interpretation of culture systems (Knudson, 1978:409,410; Willey and Sabloff, 1993:174; Trigger, 1989:279).

Spatial archaeology and settlement studies grew in importance following Willey's work. The emphasis on individual sites gave way to a more regional approach in which networks of sites in their wider social and ecological context became the focus. Representative samples of all types of sites in a region were the goal of surveys at this time (Trigger, 1971:330; 1989:284). The majority of settlement pattern studies during the 1950s and 1960s were primarily descriptive, however, with little attempt at the interpretation which Willey suggested could make settlement studies so meaningful (Dalla Bona, 1993:6; Willey and Sabloff, 1993:174).

In an attempt to remedy this lack of interpretation, economic theory was introduced from settlement studies in geography, which emphasized the ecological and economic variables affecting human subsistence and settlement decisions. The adaptive values of these choices were interpreted in terms of cost-benefit ratios and it was assumed that all human populations made the same 'rational' economic decisions regarding their use of resources and placement of their settlements. Sites chosen for settlements were expected to be those which allowed the inhabitants to optimize their resource gains in relation to the time and energy costs which they put into the procurement and processing of these resources (Bettinger, 1980:221,222; Dalla Bona, 1993:6).

In studies of peoples involved primarily in hunting and gathering for subsistence, cost-benefit analyses have often taken the form of Optimal Foraging Theory - a set of explicit and mathematical approaches to modelling and explaining subsistence and settlement choices of non-food producing populations of people. These are models adapted from behavioral ecology (Winterhalder, 1981a:13,14) and tend not to be able to account for any economically 'non-rational' behavior.

Another example of location studies developed in response to the call for more explanatory theory of site distributions included catchment analyses, pioneered by Vita-Finzi and Higgs in the 1970s. In catchment analyses, the resource potential of the accessible territory surrounding the site (their resource catchment) is evaluated in an attempt to explain why settlements were located in the general areas in which they were found. Systems analysis studies of hunter-gatherer settlement-subsistence are yet another example of explanatory analyses. These look at region-wide complexes of sites and their associated functions in an attempt to link them up into adaptive systems. The distinct functional and seasonal aspects of each site in a region are considered and complementarity of their uses are demonstrated in an effort to explain their locations and interrelations (e.g. Binford, 1980, 1982; Struever, 1968).

Such economic and geographic models for archaeological site distributions became quite popular and remain so today. They are, however, essentially explanatory models. They tend to be too difficult to operationalize for predictive purposes, particularly when the complexity and variability of human behavioral responses to any given environmental context is taken into account; they are normative and ignore this demonstrated variability. Additionally they often depend on some knowledge of the no longer observable subsistence activities of the people before settlement locations can truly be understood in sufficient detail to allow for precise and accurate predictions to be made. These factors make economic and geographic theories of these types only tentatively applicable for explanation and not particularly useful at all for predicting site locations (Bettinger, 1980:221; Warren ,

1990:94; Winterhalder, 1978:564,565).

By the 1970s, an alternate trend was in place. Some archaeologists continued to describe and attempt to interpret regional settlement patterns. At the same time, however, others came to realize that with the detailed locational data made available by the growing number of regional surveys, information was at hand from which predictive models of archaeological site location could be constructed (Altschul, 1990:226; Dalla Bona, 1993:7,8; Knudson, 1978:420).

Predictive models differ from most of the earlier works on settlement patterns in that they attempt to predict specific locations or the types of locations which are expected to have been chosen by people for use, rather than simply describing or interpreting patterns which have already been discovered through intensive regional survey. For this purpose, different types of variables have to be measured. In addition to, or instead of, evaluating the resource potential of the sites' catchments, or measuring distances to neighbouring, contemporaneous sites, archaeologists interested in making predictions of site locations in particular environmental contexts also need to evaluate what on-site characteristics were of importance to the people in that region during the time period being modelled (Warren, 1990:94,95).

Cultural resource management (CRM) archaeologists soon caught on to the potential of predictive modelling for helping to determine locations more and less likely to contain archaeological sites. This is useful in guiding the planning of development projects which might impact archaeological resources.[7] The primary interest of these archaeologists was not to explain subsistence and settlement patterns. It was and is to describe those patterns. For such purposes, correlations between archaeological site locations and various on- and off-site environmental variables are measured. The patterns that are discovered can then be projected onto a larger area of similar cultural and environmental characteristics in order to predict which specific locations have higher potential for containing archaeological materials.

Archaeologists have always tended to rely on their local guides for determining likely places to find sites, as well as on some intuitive sense of where to look based on previous experience in an area, but they rarely acknowledged the information received from their guides, or put their own assumptions and inferences down in writing. It was not until the 1970s that they began to make more explicit and thus testable statements about the environmental variables that were expected to be most influential on human decisions of where to carry out different activities (Altschul, 1990:226; Dalla Bona, 1993:9; Warren, 1990:94).

For example, Green's 1973 study of Mayan site distributions in Belize was one of the first formal predictive models of archaeological site location. Like most of the early predictive models of the 1970s and early 1980s, this study emphasized pattern recognition over interpretation. Correlations between a sample of archaeological sites and the associated environmental variables which were determined to be most relevant were empirically measured. This allowed Green to typify the locations most often selected for use by the ancient Mayan occupants and to then model the predicted distribution of locations with high site potential in adjacent areas of the study region (Altschul, 1990:226,229; Knudson, 1978:420). It is this sort of 'empirical correlative' or observation-based predictive model which dominates the existing literature (Dalla Bona, 1993:12; Warren, 1990:96).

Although most archaeological predictive models were, and still are, more descriptive of site distribution patterns than they are explanatory, a number of researchers recognized the potential of predictive modelling for explaining land use patterns. They recognized that if a theory was devised and used to make predictions about land use and site locations, testing those predictions could be used in turn to test the theory. If supported by accuracy of its predictions, the theory could then be used to interpret site distributions - to explain why archaeological sites were located where they were. Such explanatory power was particularly desirable because, as Kohler and Parker note, "(s)ites are not a worthwhile end in themselves, but the understanding of human behavior and development that can be

extracted from them is" (1986:442).

In the early 1970s, the Southwestern Archaeological Research Group developed numerous predictive models based on economic theory-based hypotheses about settlement decisions made by precontact peoples in the southwestern United States in an attempt to explain why sites were located where they were (e.g. SARG, 1974). These were among the earliest 'explanatory', or theory-based, predictive models (Dalla Bona, 1993:8; Knudson, 1978:421).

Since its introduction, predictive modelling of archaeological site locations has increased in use, although primarily for CRM work and less so for more academic research into settlement and land use systems (Dalla Bona, 1993:12; Parker, 1985:173). There has been very little alteration of the basic approaches; the primary methodological advances characterizing recent predictive model applications to archaeology have been the increasing use of Geographic Information Systems (GIS) and the use of various high powered (sometimes over-powering) multivariate statistics for evaluating the significance of specific combinations of environmental variables influences on past peoples' activity location decisions (Carr, 1985:116; Warren, 1990:94). It is difficult to discover any additional trends in archaeological predictive modelling as so much of the relevant literature is restricted to unpublished CRM reports (Dalla Bona, 1993:13; Kohler and Parker, 1986:400).

2.3 **The Value of Theory-Based Predictive Modelling.**

For observation-based models to be useful for predicting a full range of archaeological sites, they must be based on representative site samples. Models based on biased site samples will systematically miss predicting any activity location whose associated environmental characteristics do not occur in the selective sample of locations surveyed. When this happens, there will be an over-representation of some types of sites and an under-representation of others. This could lead to an unbalanced view of the different activities conducted by a group of people over space and time.

In archaeology, there are two major sources of statistical bias in samples which can limit the predictive and explanatory power of an observation-based model. The first source of bias, which cannot be confidently evaluated without actually comparing the existing sample to one probability sampled from the same region,[8] is the systematic bias introduced through non-explicit, intuitive survey sampling. The second source of bias is that resulting from differential site visibility, preservation and deposition. These latter biases are largely unavoidable, but may be corrected for if there is good understanding of the processes responsible for the bias (Read, 1975:48).

As already noted, most archaeologists develop their own, implicit sense of where to expect sites when surveying a region The intuitive bias of archaeologists will often cause them to direct their attention to certain types of landforms and environmental patches while ignoring others. Additionally, survey strategies can be statistically unbiased in design and yet still suffer from this intuitive bias. Even when other locations than those expected to bear sites are surveyed, individuals will tend to 'look harder' in some places than in others which appear to them to be less ideal (Dalla Bona and Larcombe, 1993:2). Unless surveyors are more open to the idea of finding sites in unexpected locations, they will continue to only find the sites which they expect to find, perpetuating the bias (Dalla Bona and Larcombe, 1993:2; Dalla Bona, 1994b:2; Hamilton and Larcombe, 1994:58; Ives, 1982:99).

For example, there had been a long-standing opinion held by many among the archaeological community that few archaeological sites - and no large sites - should be found in the far inland sections of the boreal forest, i.e., those locations not in close proximity to a significant water body. Until recently, large sites (indicating use by large groups of people and/or repeated use of particular locations over time and/or extended use of a site over a long period of time) were not expected to be found in any part of the boreal forest, for that matter (Dickson, 1972:45; Ives, 1982:99). This expectation was associated with the assumption that the boreal forest was for the most part only sparsely occupied by

people who spent most of the year in small family-sized groups, dispersed over the favourable locations of the landscape. These locations are expected to be close to the larger water bodies. Any camps used for seasonal aggregations of larger groups are commonly expected to occur in the shoreline zone at good fishing locations on navigable waterways (Hamilton and Larcombe, 1994:11,38,39).

When inland regions are cleared of their dense vegetative cover for development or by forest fire, however, these assumptions are suddenly called into question. [9] Locations considerably farther from water than previously anticipated to have been used at all, never mind repeatedly enough or by large enough groups to leave large sites, have been found to bear significant numbers of archaeological sites, some of which are of quite considerable size (Ives, 1982).

It is clear that the completeness of understanding of land use in the boreal forest (or any other region) is dependent on the representativeness of the sample. An observation-based predictive model built up on the existing sample of sites found in the boreal forest region of northern Manitoba is more likely to predict site visibility than actual site distributions for the region. It would be capable of predicting only those locations similar to those already surveyed, and the types of sites predicted would be quite potentially misinterpreted on investigation of the modelled patterns.

Surface surveys are generally more common than surveys using subsurface testing, since they are so much faster. Unfortunately, biases which are completely independent of those introduced by the surveyors in their choice of location sampling design can plague these visual surveys. This second source of statistical bias in archaeological samples is that introduced by the differential visibility, differential preservation, and erosion of the material evidences of past land use activities.

Archaeological materials will be more commonly discovered in those types of locations which contribute to or encourage their visibility. Vegetation cover, rate of sediment deposition, erosion, even the colour and texture of the ground surface can all affect

visibility of artifacts and features (Syms, 1982:120). As these factors might sometimes co-vary with the land use potential of locations, systematic bias against not only site locations but also the associated land use activities represented on these could be built into an observation-based model of site distributions.

All else being equal, recognition of sites also tends to be biased towards those which are more visible due to their larger size and/or denser concentrations of archaeological materials. There will inevitably be an over-representation of: 1) sites resulting from use by larger groups; 2) locations occupied over longer periods over time, either continuously or cyclically; and/or 3) locations used more intensively, resulting in a greater production of refuse and other material remains of the activities carried out there (Binford, 1980:7; 1982:16; Conkey, 1980:611).

In the boreal forest, for example, a large range of archaeological sites might exist. However, they will not be equally visible. Large seasonal gathering camp locations are far more visible than smaller, shorter duration hunting camps. Camp sites in general would probably be more visible than the numerous locations which were the sites of those certain activities which - though potentially highly significant - did not tend to leave much, if any, material evidence of their occurrence (vision quests, for example). There are therefore some things which observation-based models cannot predict, no matter how representative of the existing sites the sample on which they are based. While the bias of site visibility of existing deposits can be corrected through an improvement of surveying techniques and increased used of subsurface testing, bias in site representation due to the differential preservation, erosion, or even non-deposition of material remains is not something so easily remedied.

Numerous locations which might have been selected by people for use, even regularly, will contain no sites, or a significant under-representation of sites because of taphonomic processes which destroy the archaeological record in those environmental contexts. For example, sites located along the foreshore of subarctic rivers tend to be

eroded away by ice scour and spring flooding, leaving little or no remains behind in the place of their original deposition (Hanks and Winter, 1991:47). Similarly, evidence of any activities located out on the ice of a water body during the winter seasons would be lost during spring thaw, sinking down into the water. Activities leaving behind only organic remains are rarely found, as organic materials rarely preserve well in the boreal forest.[10]

Additionally, certain activities will leave little or no recognizable evidence behind to begin with and these activities will thus be under-represented in the archaeological record. For example, unless something is dropped, or the landscape altered by the people in their passing, there is rarely any archaeological evidence of people's travel; only at the places where they stop to do something would a site be more likely to be later observed. Yet these activities are as much a part of peoples' land use systems as those which are represented in surveyed sites.

Such archaeologically 'invisible' activities cannot be incorporated into an observation-based predictive model because there are no associated sites to observe. This is not a problem for purely CRM purposes. But if the goal of the predictive model is to not only describe site distributions, but to explain them as inter-related components of a land use system or to ultimately be able to reconstruct a relatively complete land use system, then observations alone will often fall short. Attention to the ethnographic record of boreal forest peoples, to their own oral histories, and to theoretical understandings of land use systems in general should help to fill in some of these gaps.

There is no guarantee that attempted reconstructions of past peoples' land use systems in this region will be fully applicable to the specific groups being modelled. Testing of these models, however, should highlight any problems with respect to the distribution of sites which do exist. As for any 'invisible' activities included in a reconstruction of peoples' land use systems to be used in the development of theory-based models, these ideas cannot be empirically tested, and so must remain hypothetical. Even untested, however, such reconstructions can at least help to expand awareness of the range

of activities - archaeologically visible and invisible - which may have been carried out in different contexts. It must be recognized that there are many things which the archaeological record simply does not reveal on its own.

Because they can be constructed independently of empirical samples, theory-based models can be particularly useful in regions with little or no previous survey work and in regions where the site sample is suspected to be biased. Like all predictive models, theory-based models must still be tested against real data before they can be considered valid for a region. An unbiased test sample is just as vital for these models as it is or the construction of good observation-based models.

It is hoped, however, that by highlighting the various activities which might not be so visible in the archaeological record, or which are expected to have taken place in locations traditionally under-surveyed, the potential for both types of statistical bias will be better recognized by the surveyors. This might in turn increase their sensitivity to evidence of these under-represented activities, ultimately leading to the ability to amass a more representative site sample. Aside from being used for testing the theory-based models, this improved sample can also be used for developing better observation-based models.

This is important because, while theory-based predictive models are inherently explanatory of the site distributions which they predict and can predict the locations of sites not so often readily observed in the archaeological record, they are generally more difficult to operationalize and assess than observation-based models, being more complex and often somewhat abstract (Hamilton et al., 1994:2). Probably the most useful approach is to use both observation-based and theory-based models together as complementary sources of predictions (Dalla Bona, 1994b:51).

2.4 **Site Distribution Studies in the Boreal Forest of North-Central Manitoba and Adjacent Regions.**

Predictive modelling is a relatively new method in boreal forest archaeology, and it

appears to have been largely restricted so far to cultural resource management (CRM) applications. While its use has been growing in neighbouring regions, the only published attempt at this type of analysis and modelling for the boreal forest of north-central Manitoba has been Hanna's 1974 article, Site Location in Lake Opachuanau.

One of the later aims of the pre-diversion CDAP involved the examination of settlement patterns in the study area for a more dynamic view of the archaeological cultures and as an aid for helping to locate new sites. It was hoped that the impressions that the field crew was gaining from what they were learning about land use from the local people (M.A. Tisdale, 1999: personal communication) and from their own observations about where sites tended to be located could be "formulated into a testable hypothesis, by defining the variables affecting site location as a polythetic set" (Hanna, 1974:3).[11] In other words, the researchers hoped to define a list of variables which tend to characterize those locations that people in the region would most often have been using, reflected in the distribution of archaeological sites (Hanna, 1974:5,7; Wiersum and Mallory, 1973:4). This analysis would help direct survey efforts to the highest potential locations - aiding in the locating of new sites - and would also provide data that could be used for the reconstruction of past settlement and subsistence systems (two major components of regional land use systems - basically those reflecting the distribution of populations across a landscape and how they go about harvesting food and other important resources) (Hanna, 1974:3).

From an assessment of the collected data on the environmental settings of surveyed sites on Lake Opachuanau, the following list of traits that tended to be associated with sites on the lake's shores were defined:

1) at or near a river/stream mouth (maximum distance approximately 1000 metres)
2) shelter from prevailing winds
3) a non-dangerous canoe landing
4) proximity to a major resource
5) situated on a point of land
6) a well-drained location
7) a relatively broad, flat surface (broad = minimum of 20 metres; flat = a slope of approximately 10° or less)

(Hanna, 1974:7). This set of criteria was to be tested by comparison to site distribution data collected from subsequent surveys. No official results of this test appear to have made it into publication.[12]

There is unfortunately no description of how this set of variables was arrived at, and with little accompanying attempt to explain why the sites tended to be located in such places, the presentation of this model contributed little beyond the descriptive level to the archaeological understanding of the region. Additionally, as an observation-based model, based on an admittedly biased site sample (Hanna, 1974:7), it could only predict the kinds of sites which the archaeologists were already intuitively seeking out. This is why Hanna made it clear that the polythetic set described in her article was "only a hypothesis, not a fact... additional, independent fieldwork is necessary to verify this hypothesis" (1974:8).

Outside of Manitoba, full-scale attempts have been more recently made at predictive modelling in the boreal forest. For example, Western Heritage Services Inc. has been developing a series of predictive models of archaeological site location for the forested regions of Saskatchewan, originally as part of the Cultural Resources in Integrated Management Planning (CRIMP) project - an attempt to build cultural resources into forestry management plans. Like that originally presented by the CDAP (Hanna, 1974), these models have been based on empirical observations of the locations of sites in relation to specified environmental variables. Ethnographic data have not been incorporated into these models which have been concerned primarily with the locations of sites - not their meanings.[13] And as is typical of boreal forest site samples, the samples from which these predictive models were developed had been restricted largely to shorelines of lakes and streams and to existing overland trails on which artifacts were more visible. Although the trails surveyed do cross a number of different environmental contexts, they are still not necessarily representative of the full range of variability in the boreal forest environment (Gibson and McKeand, 1996:1; e.g. Finnigan and Gibson, 1996; Gibson and McKeand,

1996; Western Heritage Services Inc., 1997).

The Centre for Archaeological Resource Prediction (CARP) in Ontario has produced an extensive report detailing the methods and theory of predictive modelling, together with the specific steps taken by that group for producing an archaeological predictive model for the boreal forest region of north-western Ontario, prepared for the Ontario Ministry of Natural Resources. Like Western Heritage Inc., CARP produced a model based on observations of the correlations between surveyed sites and certain environmental variables. However, they additionally investigated the ethnography of the region as part of their attempt to produce a second, theory-based model, the predictions of which could then be combined with those of the observation-based model. No attempts to differentiate between cultural periods or between different types of sites beyond winter versus summer camps were made in the model itself at this point, although seasonal variability was included in the description of the ethnography (Dalla Bona, 1994a; 1994b; Hamilton et al., 1994; Hamilton and Larcombe, 1994; Larcombe, 1994).

Observation-based predictive models have thus been developed for various portions of the boreal forest and have apparently been used with reasonable success for describing those types of locations in which sites are most often found within the surveyed area. Modifications are often required when the model is applied to a new area, due to environmental and cultural variations over space, but this is to be expected (Gibson and McKeand, 1996:3; Kelly, 1982:116). There is no reason to believe that this approach would be any less successful if applied to and tested in the boreal forest of north-central Manitoba as Hanna and the other CDAP researchers had begun to do years ago.

However, this type of model, as discussed, can only predict those sites found in the same types of locations already surveyed. The boreal forest is such an environmentally diverse region that surveys limited, as they have typically been throughout northern Manitoba, to the area along shorelines of larger lakes and rivers, rarely even as far as 100 m inland from the water's edge, can hardly be expected to be representative of the region as a

whole. Additionally, observation-based models only discover the correlations between site presence (or absence) and environmental features. They may be used to describe and to predict where people were; they do not themselves explain why the people were using those sites, nor for what purpose, or in what season.

It seems that if more assuredly representative site samples are to be gained from the boreal forest, and if any but the most basic interpretations of the sites modelled are to be made, archaeologists will have to go beyond simply identifying the correlations between environmental features and known archaeological sites. A more explanatory, or theory-based, approach must be employed as well. And for this, a reconstruction of the land use patterns assumed or hypothesized to have characterized the people in that time and place being modelled must first be proposed. Only then can theory-based predictions be made of "where archaeological site potential should be high if the underlying settlement pattern has been sufficiently and validly deduced" (Hamilton et al., 1994:2) . If supported by subsequent testing, the model and the reconstructions on which it was based could then additionally be used for as an aid for explaining observed site distributions and for identifying the function and season of use of sites.

3. METHOD AND THEORY.

3.1 The Use of Ethnohistory and Ethnographic Analogy in Predictive Modelling.

The aim of this thesis is to produce of a set of ethnohistoric reconstructions of Aboriginal land use in north-central Manitoba's boreal forest which could be used in the development of predictive and explanatory models of archaeological site locations in this region. The proposed predictive models will not themselves be produced here. It will, however, be described how the ethnohistory could be used in the development of such models.

The underlying assumption of theory-based predictive modelling approaches is that if human behavior can be explained, it can also be predicted (Dalla Bona, 1993:8; Plog and Hill, 1971:11). Theory-based, or explanatory, predictive models are those whose predictions are derived from hypotheses about why people used the locations that they did, i.e., what kinds of activities they were carrying out, in what sorts of locations, and why those locations were chosen? (e.g. SARG, 1974).

These models generally begin by proposing a general theory or reconstruction of land use for a specified time, place and population. This outlines the goals and criteria for the land use decisions made by the people. Working from this set of assumptions, explicit hypotheses are made regarding what characteristics would have been preferred in a location selected for particular sets of activities, in particular seasons, by a group of people of a particular culture, at a particular point in time. Archaeological sites are predicted to occur most frequently in these preferred locations. The predictions, and the hypotheses on which they were based, can then be tested by comparing the predicted site distributions to observed site distributions which have been probability sampled from the region (Dalla Bona, 1993:8,15; Hamilton and Larcombe, 1994:2; Hamilton et al., 1994:57; Kohler and Parker, 1986:432; Plog and Hill, 1971:11; Warren, 1990:90).[14]

When theory-based models are constructed, the modeller is essentially attempting to replicate the decisions about land use made by the people whose sites are being predicted. For this reason, it is useful to not only have a theory or reconstruction of land use to base the model on, but also a theory of how people made those decisions: what their criteria were for selecting a site, which of these criteria were most influential on their choice, how competing goals were dealt with, whether the sites chosen had to be 'the best' in a given area, or if any 'good enough' site would do (Kohler and Parker, 1986:432; Plog, 1971:49).

A variety of sources of information on peoples' land use patterns, criteria for site selection, and decision processes may be used in the development of a theory-based predictive model. Among these might be previous speculative interpretations about past peoples' land use based on investigations of the archaeological site distributions in regions similar to that being modelled. Interpretations of site locations are generally made with reference to the potential of the location for various activities.[15] Any location exhibiting potential for the same activities as those hypothesized for an observed site location, if the original interpretation was correct, may then be an equally likely one for containing a site, even if the particular variables of the locations differ.

General theory of human land use behavior such as subsistence-settlement system theory, and optimal foraging theory, for example, has often been used for explaining and predicting site location in relation to important resources (Plog, 1971:49; Plog and Hill, 1971:12; SARG, 1974:111; e.g. Jochim, 1976; Wood, 1978). The problem with much of this general theory is its lack of specificity. While useful for general explanation of observed patterns, general theory of land use behavior can be quite difficult to operationalize for the prediction of archaeological sites, particularly when the land use system and the specifics of the palaeoenvironment are not already well known (Winterhalder, 1978:564,565; 1981a:20; Wood, 1978:262). More common is the use of ethnographic or ethnohistoric analogy as a source of information of what variables may have drawn people to particular sites (Kohler and Parker, 1986:439).

Ethnographic analogy is a method used for the interpretation of past peoples' lifestyles and material culture with reference to the behaviors of an ethnographically or historically documented people for whom there is reason to believe lived in a similar way, producing similar patterns or materials as those observed in the archaeological record (Knudson, 1978:336). Ethnographic analogy can be used not only to explain observed site distributions in the archaeological record, by referring to observed patterns in land use behavior, but also to predict the site distributions resulting from these hypothesized behaviors (Hamilton et al., 1994:4; Hamilton and Larcombe, 1994:20).

A 'general comparative approach' to ethnographic analogy may be used for interpreting and predicting why archaeological resources might be found where they are. These analogies are drawn from a cross-cultural comparison of ethnographically or historically documented groups inhabiting environmentally comparable regions and exhibiting the same basic cultural patterns to those interpreted for the precontact group (for example, seasonally mobile hunter-gatherer adaptive strategies within the boreal forest). In this case, basic behaviors and patterns are sought which appear to be characteristic of all peoples of that culture type, within that kind of environment. For predictive modelling, general comparative analogy may be used to develop a general model of settlement and subsistence patterns (Hamilton et al., 1994:5; Hamilton and Larcombe, 1994:21; Kohler and Parker, 1986:439). These are bound to be of limited use, however - incapable of accounting for cultural diversity in land use practices and choices (Hamilton and Larcombe, 1994:20).

It is often considered preferable for the ethnographic data that are to be used to be selected from records of groups exhibiting a historical connection to those whose land use and site distributions are being modelled (Hamilton and Larcombe, 1994:20). Based on an assumption of cultural continuity between an archaeological population and their direct descendants, the historically-documented 'traditional' culture and behaviors of the descendants can then be projected backwards in time onto their ancestors. This type of culture-specific analogy is called the 'Direct Historic Approach' to archaeological

interpretation. It is common in North American archaeology due to the ability of archaeologists to identify at least the more recent archaeological cultures with living peoples in many regions (Hamilton and Larcombe, 1994:20; Knudson, 1978:337; O'Brien, 1991:52; Stahl, 1993:242).

Cultures do change, however, so the farther back in time an analogy is stretched, the less useful it is likely to be for explaining archaeological patterns (Hamilton and Larcombe, 1994:12,20; Knudson, 1978:337; Stahl, 1993:239,240,245). On the other hand, the investigation of the archaeological record by working back through time from the most recent deposits to increasingly more ancient ones will help to highlight those changes. The relative age of new innovations or changes in archaeological patterns can be determined and sometimes linked to changes in the physical or social environment which are similarly dated (Steward, 1942:339,340).

Once again, if observed changes in culture and behavior can be explained in this way, changes in site distribution and other patterns or materials can be predicted, based on cultural changes which are suggested to have happened. Testing of the predictions against the archaeological record would be a test of these hypotheses - just as it is for any theory or reconstruction of land use used in theory-based predictive models. Such evaluation must in fact be done before any theory of culture change or continuity can be assumed to be true (Hamilton and Larcombe, 1994:22; Stahl, 1993:246; Trigger, 1989:390). This is one way in which the use of the Direct Historic Approach may be used to address questions of land use change through predictive modelling.

Whether direct historic or more general analogues are to be used in the development of theory-based predictive models of land use patterns and resulting site distributions, it has been suggested that modellers focus especially on discovering details regarding "yearly and seasonal variability in patterns of movement, settlement size, and relative resource importance throughout the [region] across space and through time" (Hamilton and Larcombe, 1994:19). These and other ethnographically and historically documented

behavioral patterns may be used as sources of hypotheses regarding land use patterns and their archaeological reflections in site distribution (Hamilton et al., 1994:4; Hanks and Winter, 1991:49; Kohler and Parker, 1986:439).

3.1.1 **Ethnographic Analogy: Advantages and Limitations.**

There are a number of advantages to using ethnographic analogy as a basis for predictive and explanatory models. The benefits of a theory-based approach to predictive modelling have already been discussed: they are capable of not only predicting site distributions, but explaining them in terms of the underlying land use behavior and locational choices; they are capable of predicting sites in locations which might otherwise be neglected if predictions were based only on biased or incomplete site samples; and they are capable of modelling aspects of land use systems which would not normally show up in the archaeological record, and so are commonly ignored in interpretations of the past. Each of these valuable benefits are due to the fact that theory-based predictive models base their predictions - and explanations - not on observations of potentially biased and incomplete archaeological site samples, but on theories of peoples' land use behaviors, criteria and decision processes. As such, their predictive and explanatory capabilities are limited only by the specificity (and accuracy) of the theory or ethnohistoric reconstruction.

Because ethnographic analogues are among the sources of information on which theory-based models can derive their predictions, the benefits of theory-based modelling in general are also advantages of the use of ethnographic analogy. There are certain benefits specific to the use of analogy, however. Basically, these stem from the ability of ethnographic analogy to broaden the archaeologist's awareness of: 1) the many different ways in which people may have lived and used the land; 2) the various factors (ecological, economic, social and ideological) which could have influenced their land use behavior and choices; and 3) how these behaviors might show up in the archaeological record. All of this allows for a greater range of activity locations to be predicted and their meanings potentially understood (Dalla Bona, 1994b:2; Trigger, 1971:324). This will be illustrated in

the following examples.

Certain difficulties inherent in attempts to develop predictive models stem from the reality that people make land use decisions from within their perceived environments. They respond to perceived needs, choosing from perceived alternatives (Burch, 1971:148; Hamilton and Larcombe, 1994:18; Jochim, 1976:9; 1979:80,96,97; Wood, 1978:259). What might be the most rational choice for the decision-makers - in keeping with their cultural and personal goals (which are defined by value systems, and thus are also variable), chosen in response to perceived variables, and from locations with potentials as they understand them - might appear to be far from ideal in the world as the modeller perceives it (Jochim, 1974:9; Wood, 1978:259).

Predictive modelling is thus rather susceptible to errors introduced by the biases of the modellers' own perceptions of the environmental alternatives and their potentials and of their concepts of 'rational' behavior. Insight into the cognitive environment of the people being modelled is important, but unfortunately it is rarely accessible from archaeological observations alone. Study of the cognitive environments of more recent peoples occupying the modelled region, from ethnographic sources, studies of place names, oral histories, mythology and so forth (e.g. Brightman, 1993; Hanks and Winter, 1986; Wright and Dirks, 1983) could at least aid in at least expanding the modeller's appreciation of the variation in perceptions that might have existed, even if the data utilized do not necessarily apply to the people in the time period being modelled.

The most common approach to site location predictive modelling is an ecological one. This is an almost inevitable bias in observation-based modelling, as such models work by correlating site location with biophysical environmental factors. Yet even in theory-based models it is the subsistence and physical comfort potential of site locations which are most commonly cited as explanatory. This is largely due to the simplification in the modelling process that concentrating on environmental variables allows (Kohler and Parker, 1986:400,401); these variables are empirically observable, or at least potentially

reconstructible from empirical evidence, and often considered to be somewhat constraining on people's activities, so that patterns in land use will tend to co-vary with patterns in the readily-observed biophysical environment.

However, peoples' land use decisions are made not only for the commonly cited logistical and economic/subsistence goals, but also for social, political, spiritual and personal ends. While not all of these will have perceivably patterned results with respect to the environmental characteristics of the locations selected for use (Hamilton and Larcombe, 1994:7), ethnographic analogy may help to highlight some of those non-economic cultural goals and behaviors which do result in recognizably patterned distributions of activities and their material evidences. Again, awareness of these goals will lead to an increased ability to both predict and explain archaeological sites which might be missed if surveyors were only checking locations which offered economic or ecological benefits.

There are, however, a number of problems with using ethnographic analogy which should be considered as well. One of the most common criticisms of archaeologists' dependence on ethnographic analogues for sources of interpretation of precontact culture systems and behaviors is that this approach might limit understanding and interpretation to that range of variation documented for observed societies. If analogy is too rigidly adhered to, it will preclude the ability to understand and predict any behavior not recorded in the ethnographic record (Freeman, 1968:262; Hamilton and Larcombe, 1994:11; Wobst, 1978:303). When developing theory-based models, archaeologists must realize this problem and not depend solely on one-to-one relationships identified in either direct historic or general comparative analogues. So long as ethnographic analogy is treated as a source of hypotheses about land use and an open mind is kept regarding undocumented behaviors, this should not be a problem.

Similarly, uncritical application of ethnographic analogues can lead to inaccurate interpretations and predictions (Hamilton and Larcombe, 1994:58; Wobst, 1978:303). Unaccounted-for cultural change can leave direct historic analogy inapplicable, for example.

It is also possible that a selected analogue or general theory will not adequately account for regional variations. A model based on an analogy applicable to one area in a region, or to one group of people sharing a region with others, may not be equally applicable to the other groups. Weinstein (1976), for example, has documented the considerable variability inherent in the land use of people between and even within Native communities in the James Bay region of Québec and Ontario.

Other sources of error include the biases which may be inherent in the ethnographic descriptions commonly used as sources for the development of theory-based models. Ethnographers have, for example, traditionally tended to emphasize male activities and resource goals in their accounts of subsistence and settlement systems. These are the aspects of life which are the most likely to have been observed by the predominantly male ethnographers. Thus, while the importance of big game resources to subsistence and settlement is commonly over-emphasized in many ethnographic accounts (and in the models built up on them), the influence of plant resource location, fish resources, availability of firewood and many other 'mundane' resources and/or women's activities is systematically under-emphasized (Dahlberg, 1981:3; Hamilton and Larcombe, 1994:37). The locations actually selected for use might thus bear very little resemblance to those predicted based on ethnographic description of what was described to be 'really important' to a group of people in their land use decisions.

The same problem could arise when completely erroneous data have been incorporated into the ethnohistoric reconstruction. Any of these problems might weaken the predictive and explanatory power of a theory-based predictive model of archaeological site locations. However, testing of predictions based on these reconstructions of land use will lead to the recognition of any such weakness. Inapplicable analogues can then be rejected, and weak but generally applicable analogues can be refined. Attempts to then correct the problems by refining or replacing the model can lead to increased understanding of the past. This process of hypothesizing, testing, revising and re-testing is one by which new

knowledge may be acquired. It is this ability to refute or verify the validity of ethnographic analogues which makes their use in theory-based predictive modelling acceptable.

With reference to north-central Manitoba, specifically, one last potential difficulty for the development of a predictive model based on ethnographic analogy exists. This is the comparatively small body of ethnographic, ethnohistoric and archival data available for this region (Bellhouse, 1971:11; Dickson, 1972:21). What is available tends to be for comparatively recent periods; there is a lack of observations on Aboriginal peoples in northern Manitoba and Saskatchewan for any period before the mid-1700s (Russell, 1991:118). Thus, significant changes in their lifestyles may have occurred but have gone unrecognized.

Available sources are also often very general, lacking the type and amount of detail necessary for reconstructing land use location choices. Ethnographic analogy is most useful as a basis for predictions of site location when the records document not only information concerning land use practices, but also identify the influential environmental characteristics. This is uncommon in most traditional ethnographies (Ascher, 1971:269; Hamilton and Larcombe, 1994:11). In several cases, informed guesses may have to be made regarding what the influential variables were, based an understanding of what was likely required for the different activities that do tend to be documented.

Given the small amount of ethnographic and historical documents directly applicable to the groups present in the boreal forest of north-central Manitoba, it may also be useful to supplement this with the more extensive data available on people in adjacent regions who were expected to have possessed similar types of lifestyles - Dené in northern Saskatchewan and Cree in northern Ontario and Québec, for example. It is, in fact, often recommended that as many sources as are available regarding land use systems of past peoples be used in the construction of a theory-based predictive model (Hamilton and Larcombe, 1994:51; Jochim, 1979:103).

This, theoretically, is expected to help correct for biases inherent in one or more sources and to 'fill in the gaps' left in the picture of a land use system for a particular time, people and place. However, there is a danger in the uncritical lumping of sources in this way. Some location choices are bound to be based on the same criteria among different peoples and some may even be relatively universal. For example, people would be expected to prefer to camp on more level rather than steep ground. On the other hand, certain activities pursued by one group and not the other, or in different seasons, or in different combinations with other activities, are bound to result at least some of the time in different choices about the type of locations in which those activities are to be carried out.

As Stahl points out (1993:245,246), by utilizing *ad hoc* sources from a number of time periods, places,[16] and culture groups, the resulting model will tend to average over any variability that existed in reality. This will inhibit understanding, or even the recognition, of change in land use over time. It will eliminate appreciation of cultural variability and of adaptive significance of specific responses in specific contexts - just the sort of information which is important in modelling land use decisions.

For this reason, when ethnographic analogy draws on data concerning a number of different peoples in different time periods, special attention must be paid to any patterns in spatial, temporal and cultural variability in order to remain aware of any behaviors, goals or criteria specific to a certain group or time period. Rather than a problem for predictive modelling, this more critical use of multiple sources could, in fact, be a useful source of information on existing variability. This is the approach which has been attempted in the development of the ethnohistoric reconstructions to be presented in the following chapters.

3.1.2 **Sources for Ethnographic Analogy**.

Conventional ethnographies and ethnohistories are commonly used as sources of information about cultures and processes of culture change which may then be used in the construction of ethnographic analogies. They may be specific to the region to be studied, or more generally applicable to the broad environmental and cultural types represented in the

study region. When an ethnographically documented people can be demonstrated to be the descendants of the archaeological culture group to be studied, ethnographies and ethnohistories specific to this group can be used in the Direct Historical Approach to ethnographic analogy. These can then be additionally used to address specific questions regarding culture change in the history of that people.

Even when using accepted ethnographies and ethnohistories, however, caution must be used in the selection and interpretation of sources. Early ethnographies, as already noted, tend to be biased towards description of men's activities. Little attention was paid to the activities, goals and criteria of women and children, like fishing and plant collection, because these individuals were rarely interviewed or much observed by the predominantly male ethnographers (Dahlberg, 1981:3; Hamilton and Larcombe, 1994:37). Also, while ethnographers strive to be 'objective', there is no such thing as a completely objective description of culture, any more than there is a completely objective history (Brown and Vibert, 1996:x,xi). Ethnographies must be read in the context of their times. Consideration should be made of the prevalent prejudices, perceptions and anthropological paradigms of those times, in order to identify potential biases and outdated interpretations (Wood, 1990:88).[17]

Similarly, ethnohistories which have been based on biased historical sources or which misinterpret these early records will also be questionable. When such errors have been made in older ethnohistories, the long-standing tradition of continuously citing 'classic' ethnohistorical reconstructions rather than studying the original first-hand documents on which they were based can lead to the perpetuation of this error until it has been repeated so often that it becomes accepted as established 'fact'.[18]

Archival sources, such as unpublished trade post journals and business documents, explorers' journals, maps and letters can be a rich source of historical data. However, care must be taken when using these sources, as an uncritical use of historic documents often leads to misinterpretation. This may be due to changing semantics of language (e.g. Black-

Rogers, 1986; Brown and Vibert, 1996:xiii; Wood, 1983:91), or the inclusion of erroneous or falsified data in the original archival document (Wood, 1990:87). The same mistakes sometimes made by ethnohistorians, discussed above, can be made even more easily by archaeologists, like the author, who are less experienced in ethnohistoric methods of source evaluation.

The authors of historic documents often possessed particular biases and prejudices which strongly influenced their perception and recording of data. They often also had particular agendas for their records which would favour the emphasis of certain traits and the de-emphasis of others when describing the Aboriginal peoples. For example, fur traders often justified business failure by blaming it on lazy behavior or the poor condition of the Aboriginal customers; explorers (or their editors) regularly boosted the sales of popular narratives of their journeys by romanticizing the people described or embellishing incidents for added shock value; individuals with an interest in colonization or missionizing the territories justified these efforts by emphasizing the 'wretched' condition of the Aboriginal peoples (Black-Rogers, 1986:358; Brown and Vibert, 1996:x,xiv; Hamilton, 1991:4; MacLaren, 1991:25,26; Wood, 1990:92).

But all too often, archaeologists and ethnohistorians accept these early records as fact - being 'first-hand' data on the early postcontact cultures and history of Aboriginal peoples. The reliability, validity, authority and completeness of these records are rarely evaluated (Brown and Vibert, 1997:xii,xvi; Hamilton, 1991:4; MacLaren, 1991:26; Wood, 1990:82). Discussing the use of fur trade records by archaeologists and the biases which are often inherent in the data, for example, Hamilton (1991:4) writes:

> We can expect minimal recording of the activities of the labourers aside from their work, and only passing mention is made of the women and children who occupied the post. Finally, the majority of extended references to the Indian customers dwell upon trade problems, violent and confrontational situations, and the dangers of the alcohol trade, with minimal commentary on routine trade exchanges.

It is clear that when archival sources such as these are used, they must be considered in the context of the times in which they were written and with awareness of the audience for which they were written. Comparison of historical constructions based on archival sources to patterns in the archaeological record should help identify possible biases and errors in the historical data (Hamilton, 1991:21; Smith, 1987:439). Because the archaeological record does not reflect all aspects of past life, however, it is better to critically evaluate archival, historic, ethnographic and ethnohistoric sources such as these before incorporating them into ethnohistoric reconstructions to begin with. All such reconstructions must be acknowledged to be hypothetical, not factual, particularly when untested.

In addition to the more traditionally used ethnographies and ethnohistories discussed above, a number of more 'emic' sources of information on Aboriginal land use can be quite useful in the construction of both direct historical and general comparative analogy (Hanks and Winters, 1986:272; 1991:47). The knowledge of local informants can be extremely valuable; knowledgeable individuals can provide insight into where people went for what purposes and why. They can provide information which aids the understanding of the importance of the region and of specific locations for not only the present occupants, but also for the preceding generations of people about whose lives knowledge has been passed down in the form of oral histories (Hart, 1994; Riddle, 1975:5).[19] At times, "(k)nowledge offered by Native people has also served to challenge or correct archaeological interpretations of the function of sites, features, or tools" (Denton, 1997:105). Some potential problems, however, arise when local informants' knowledge do not go far enough back in time to be useful for applications to even the recent past, or when their perceptions of 'the old ways' have been influenced by ideas imposed from outside (Hart, 1994).

Local knowledge, often labelled Traditional Ecological Knowledge, is often recorded in contemporary land use studies (e.g. Hrenchuk, 1991) and in ethnoarchaeological surveys (e.g. Hanks, 1983; Orecklin, 1976). In the case of the latter, researchers obtain information

on the use of surveyed recent land use sites from local informants with direct or inherited knowledge of the people who used these sites, when, how and why. Observation of the materials left behind and the patterning of these sites can then be used to interpret similar materials and patterns observed in the archaeological record (Knudson, 1978:338).

Other often-neglected sources of information for use in theory-based modelling include oral histories, stories and myths (Denton, 1997:105; Hanks, 1997:178; Pettipas, 1994:32).[20] Each of these often incorporate experiential information on the kinds of activities that occurred and the settings in which they took place over a landscape (Andrews and Zoe, 1997:10; Hanks, 1997:184,185; Hart, 1994). Myths are especially interesting sources of data as these tend to offer legitimization in terms of the historic, underlying reasons for particular adaptive behaviors of a group, although this is often coded in metaphor (Helm and Thomas, 1966:16; Pettipas, 1993:34; Wright and Dirks, 1983:160).

This cultural coding of information makes it difficult for archaeologists brought up outside of that society to be able to interpret the 'meaning' of the stories. Too often, misinterpretation results from archaeologists simply not understanding the meaning of terms used. Other times, in trying to extract one specific element from its cultural context and using this to illustrate their own pre-conceived ideas, archaeologists separate the element from its cultural meaning (DeMallie, 1993; Denton, 1997:106,120).[21] If narratives are to be used as a source of information about past peoples, then this should ideally be done with the aid of the story-tellers. Short of this, considering a larger body of narratives may help clarify the cultural context somewhat (Denton, 1997:120), the hope being that increasing exposure leads to increasing awareness of the character and meaning of the stories and their elements.

Names given to particular places by Aboriginal peoples often reflect the importance of the locations. These can refer to significant events or activities which occurred at that location, to the particular resources which were important there, or even to the aesthetic attributes of the location. All of these can offer insight into the perception of a region held

by the people who named the places, providing a glimpse into the ever-elusive cognitive realm in much the way that myth might, as well as at how the people utilized their regional environment in the recent and perhaps more distant past (Hanks and Winter, 1986:272,273; 1991:54; Hart, 1994; Linklater, 1994).

3.2 **Methodological Approach of this Study.**

The ethnohistoric reconstructions of Cree and Dené seasonal rounds presented in the following chapters have been based largely on ethnographic analogy, both direct historic and general comparative. A wide variety of sources have been consulted, evaluated for consistency and relevance, and synthesized for the production of these analogies. The sources selected include those referring both specifically to the Rock Cree of north-central Manitoba and the Edthen-eldeli Dené or Caribou-Eater Chipewyan to the north, and more generally to Algonquian and Athapaskan peoples throughout the boreal forests of North America. Where data on peoples from outside of north-central Manitoba have been used, effort was made to include only aspects of their lifestyles and land use which appeared to be more or less universal among the culture groups in the boreal forest.

Where data were more problematic, such as when conflicting reports were found for the same people and time period, these were given careful consideration: the authority of the authors, the time in which they were writing, and the completeness of the data were evaluated. Because the seasonal rounds constructed in this thesis are admittedly hypothetical, details can and have been included about which some of these issues remained questionable. Where these have been included, however, accompanying discussion of the problem has been made in text or in notes.

A wide variety of ecological data were first reviewed for an understanding of the environmental context in which the Rock Cree and Edthen-eldeli Dené people and their ancestors were living. References to the regional ecology and its effects on land use patterns are made throughout the reconstructions of the seasonal rounds and are

summarized in the appendices. A more general description of the boreal forest environment of north-central Manitoba is provided in the introduction to the ethnohistoric reconstructions. This provides an environmental context for the land use systems described. This is accompanied by a descriptive chronology of the archaeological cultures represented in this region. The ways in which these cultures developed and changed over time have been linked, in part, to climatic and environmental changes to which they were often being adapted. This illustrates a variety of ways in which environment can affect human land use and distribution, and how this and other aspects of culture may change continuously through time.

It is hoped that through the synthesis of data from a large body of ethnographic, ethnohistoric, historic and emic sources such as those discussed above, a well-rounded picture of patterned Aboriginal land use in the boreal forest of north-central Manitoba can emerge. Unfortunately, due to the focus of the majority of such sources on economic patterns in land use, this detail has been somewhat over-represented in the following ethnohistoric reconstructions as well. Archaeological predictive models, both observation and theory based, do tend to emphasize this aspect of peoples' land use - it being the most clearly patterned with respect to the biophysical environment. However, it is still important to not lose sight of social and spiritual aspects of peoples' lives. In order to put the economically-biased seasonal rounds of settlement and subsistence behavior into a more complete cultural and historical context, environmental and archaeological summaries are followed by general descriptions of the ethnographically-documented cultures and postcontact history of Cree and Dené peoples. Particular attention is paid to those cultural aspects (technological, economic, social and spiritual) which are more likely to be recognizable in the archaeological record or patterned in some way with respect to the landscape.

Sources investigated and synthesized in this study have included both early and more recent ethnographic descriptions (e.g. Birket-Smith, 1930; Brightman, 1993; Rogers

and Rogers, 1959), ethnohistories (e.g. Bishop and Ray, 1976; Rogers and Black, 1976; Sharp, 1977; Smith, 1981c), and published and unpublished archival sources such as fur trade post journals, explorer journals and maps drafted during the Early Fur Trade periods which contain data relevant to the Aboriginal peoples of the boreal forest of north-central Manitoba (e.g. Duckworth, 1990 [1786]; HBCA, B.91/a/1; Hearne, 1971 [1795]; PAM, MG1 B14).

Additional ethnographic and ethnohistoric detail has been gained from published memoirs of Cree and Dené people of the boreal forest regions which detail day to day life in the recent histories of these people (e.g. Ahenakew and Wolfart, 1992; Boulanger, 1971; Bussidor and Bilgen-Reinart, 1997), from contemporary land use studies (e.g. Hrenchuk, 1991), and from ethnoarchaeological reports (e.g. Hanks, 1983; Orecklin, 1976). These tended to be more useful for providing detail on what types of locations people were using for different activities, and on more mundane details of day to day living than tends to be recorded in ethnography. For information on both past land use and on Cree and Dené perceptions of their physical, social and spiritual environments, a variety of published and translated oral histories and legends were read (e.g. Blondin, 1990; 1997; Brown and Brightman, 1988; Fiddler, 1985), and data on place names and interpretations of these were considered (e.g. *in* Hrenchuk, 1991; Linklater, 1994).

Additionally, for the reconstruction of precontact land use patterns, existing interpretations of archaeological materials of the Late Woodland Cree and Dené peoples have been considered and incorporated into the study as well (e.g. Gordon, 1975; Hlady, 1971; Manitoba Heritage Network, 1998; Meyer and Thistle, 1995; Petch, 1997b; Pettipas (ed), 1989; Steinbring, 1998; Wood, 1983).

With the exception of the archaeological, archival and some oral historical sources, the data collected for use in the reconstruction of Late Woodland and Early Fur Trade aged Cree and Dené land use tend to refer to more recent periods than those being reconstructed.

They do, however, describe a range of behaviors in various settings at various points in time, and so can be a useful source of ethnographic analogy, both general and direct.

Attention to fur trade history and Early Fur Trade period-specific descriptions of Cree and Dené in northern Manitoba has allowed for those changes which occurred in the cultures and land use of these people during the postcontact periods to be identified. Hypothetical reconstructions of Cree and Dené land use during the Early Fur Trade Period have been made based on these analogies with an attempt to work backwards through those documented changes to the periods before they occurred.

The cultural changes experienced by these peoples during the less documented Protocontact Period are less well understood, however. Seasonal rounds of land use practiced by the Late Woodland ancestors of the Cree and Dené within the study region have been reconstructed by working yet farther backwards in time from the Early Fur Trade through these hypothesized changes to the late precontact. Attention to fur trade history has inspired some of the hypotheses of continuity and change in Cree and Dené land use by considering what the earliest effects of the fur trade may have been, and how people would have reacted to these. Examination of existing interpretations of Late Woodland archaeology in the region, as noted, also figured into the hypothesized reconstruction of the precontact seasonal rounds, as has consideration of oral histories of Cree and Dené peoples. For the sake of chronological consistency, the Late Woodland seasonal rounds have been presented first, followed by those of the Early Fur Trade, even though the Late Woodland was reconstructed by working back from the Fur Trade.

3.3 **Criteria for Land Use: a General Theory.**

Permanent settlements are relatively recent developments in northern Manitoba, having their origins in the seasonal tent camps that sprang up around the trade post complexes of the later fur trade periods. Prior to this, Cree and Dené of northern Manitoba and adjacent regions moved regularly from camp to camp over the course of the year. They moved as their specific requirements in a camp site changed with the seasons, for resources available

in different parts of their territories at different times of year, to gather together with friends and family as conditions allowed, and to avoid exhausting the local resources around any one camp.

The choice of where to set up camp was important, affecting not only the comfort but even the survival of the group. First, they had to choose the region in which they would live for a particular span of time. Among peoples with hunting and gathering based economies, it seems that the region within their traditional, familiar territory that they could occupy in any given season would be defined largely by the ecological range of the large game species which were emphasized at that time of the year (Heffley, 1981:137; Jochim, 1976:55; Kvamme, 1985:229; Lister, 1988:78; 1996:80; Sharp, 1977:5).

Within this larger region, the particular area in which people would live was chosen based on the local presence of desired plant, animal and mineral resources (Hamilton and Larcombe, 1994:6; Hanks and Winter, 1991:54; Heffley, 1981:137; Hrenchuk, 1991:90; Jochim, 1976:55; Kvamme, 1985:229; Lister, 1988:78; 1996:80, 294,295; Sharp, 1977:5). Proximity to neighbours was probably another factor; people of the same regional band usually preferred to camp near each other in order to increase opportunities for socializing, information exchange, and mutual aid and protection; but enough distance would have to be allowed between groups to keep competition over vital resources down. This distance would vary depending on the sizes of the groups and the size and density of the local resource base. In contrast, people normally tried to keep a 'buffer' area between their own camps and those of people less friendly to them (Helm and Leacock, 1971:347; Jochim, 1976:65-69). Supernatural factors also could have an effect on where people chose to camp: in some cases - dream quests, for example - spiritual associations of a place might attract people to stay there (e.g. Brown and Brightman, 1988:191,192); in others, a harmful supernatural being or simply 'bad luck' might be reputed to occupy a certain place and the less bold would avoid that area if there were other choices (e.g. Blondin, 1990:78, 92; Brightman, 1993:83; Downes, 1943:38; Norman, 1982:13).

Once in or near an area that offered the resources and other features which they were after, people then chose the specific location for their camp based on the characteristics of the site and its immediate surroundings. A good camp was located on a site that was accessible, convenient, safe, and reasonably comfortable. These conditions were affected by a number of factors, including but not necessarily limited to topography, surficial geology, vegetation, distance to water, hydrology and view (table 3.1) (Hamilton and Larcombe, 1994:6; Heffley, 1981:137; Hrenchuk, 1991:90; Jochim, 1976:49,51,55; Kvamme, 1985:229; Lister, 1988:78; 1996:294,295; Rogers and Black, 1976:23-25; Sharp, 1977:5). The same general procedures would similarly be used for selecting the locations to be used for purposes other than camping.

Because people had different requirements for comfort and local resources in different seasons, periods and places, the conditions that characterized a 'good' site for a camp or some other purpose could vary over time and space. Different groups and different individuals also perceive their needs and surroundings in different ways (Jochim, 1976:9,52; Plog and Hill, 1971:13; Wood, 1978:259), so that a location acceptable to one might not be for another. The acceptability of a site would also vary according to its surroundings: for example, people often make at least temporary camps in uncomfortable or inconvenient locations simply because those locations are the best to be found within that day's journey (Ballantyne, 1971 [1879]:102,220; Hammer, 1993:73; Wood, 1978:263).[22] All this leads to variability in the types of locations chosen.

Further variability exists because sites occupied or otherwise used for different purposes are chosen based on separate sets of requirements, even within the same season. Good base camp locations, for example, in addition to being comfortable and safe had to be situated where there was access within a few kilometers, and preferably less, to most or all necessary resources - including water, fuel, plant foods and materials, game, fish and a seasonal route of travel (Kvamme, 1985:223,224,228,230-232; Rogers and Black, 1976:25;

Table 3.1 Commonly cited local factors affecting choice of camp and activity area locations.

Environmental Factors	Criteria Affected
Local topography: landform, local relief, roughness of terrain, slope, aspect	accessibility; comfort; shelter/exposure; defensibility; microclimate; effect on habitat
Surface geology: type/depth of surface deposits, if any; character/extent of exposed bedrock	drainage; stability of ground; comfort; availability of clay; availability of lithics; effect on habitat; effect on overland travel
Vegetation: species present, plant biomass, openness	shelter/exposure; habitat; availability of firewood, timber, fibres, bark, foods, medicines and other plant resources; effect on overland travel
Distance to water: distance (horizontal, vertical) to lakes, rivers, streams, springs	access to drinking water, fish, game, aquatic plants, and transportation routes; susceptibility to flooding; effect on habitat; exposure
Distance to travel route with connections to a wider area	isolation/accessibility of site for the people, their friends, and their enemies; access to resource areas from the site; access to other regions
Local hydrology: water depth, discharge, speed; presence of springs, rapids, eddies, confluences, shoals, etc.	effect on habitat; timing of break-up and freeze-up (affects travel and resource harvesting); maximum ice thickness (affects winter travel, winter fishing, etc.); effect on canoe travel; feasibility of use of fish weirs, fish nets
Distance to a vantage: e.g. a height of land, an exposed point	access to a view of surroundings: ability to detect visitors, game, etc.; ability to be seen
Aesthetic qualities	comfort; pleasure; spiritual associations
Open space available	space available for tents and other structures; exposure

(Dalla Bona, 1993:16; Hamilton and Larcombe, 1994:6; Kohler and Parker, 1986:409-410,489; Kvamme, 1985:215-217; Parker, 1985:185-186; Limp and Carr, 1985:134-135; Martijn and Rogers, 1969:147; Orecklin, 1976:104; Robertson and Robertson, 1978:28; Rogers and Black, 1976:23-25; Williams et al., 1985:28).

Wood, 1978:261,262). But usually this local area around a base camp did not offer everything that the people desired. More extended trips were, in these cases, required, and temporary camps would have to be established closer to the place that was to be visited, as well as travel camps along the way if the place was more than a day's journey away (Jochim, 1976:63; Rogers and Black, 1976:23,24).

Because these 'satellite' camps were only to be occupied for one or a few nights and because they were effectively special purpose, many of the criteria of comfort and convenience that were taken into consideration when selecting a base camp could be disregarded. Safe and comfortable sites were still preferred over less safe and uncomfortable sites, but people could usually settle for a less ideal location for their temporary camps than they would for a place where they were to live day to day for a more extended period. It was the proximity to the desired resource or feature that was of most immediate concern (Kvamme, 1985:223,228,230-232; Rogers and Black, 1976:23-25; Wood, 1978:261). And for each different activity or set of activities (for example, birch bark harvesting versus moose hunting versus lithic quarrying), proximity to a different resource or set of resources would be most influential on the location chosen for the satellite camp.

3.3.1 **Predicting Land Use Locations.**

Given the process of location selection outlined above, the distribution of archaeological sites within the boreal forest of north-central Manitoba should be - to at least some extent - predictable. First, the majority of sites used by a given people would be expected to fall within the *general region* which they occupied as their home territory. In archaeology, these territories must often first be reconstructed based on the distribution of known sites bearing evidence of those people. However, once such a territory has been defined, other sites of those people can reasonably be expected to fall within that region. They might also be expected to be found in significant numbers in areas adjacent to that

region: often, the known distribution of a people is expanded as more and more of the archaeological record is revealed through further survey (e.g. Riddle, 1985).[23]

Within the general territory used by a people, the *more specific areas* out of which they would have chosen to base their different activities at different times of the year could also be predicted. The areas to be occupied or otherwise used at a given point in time were chosen based largely on the presence of desired resources. And so, prediction of the specific areas in which particular types of sites might be found would require some knowledge or hypothesis of what resources were being sought for that purpose at that time of year. Once the types of resources and conditions sought have been identified in this way, the areas which were more likely to have been used by the people at different times of year, for different purposes, can be predicted based on resource potential. This in turn requires that the archaeologist have a reasonable idea of where the various resources - plant, animal and mineral - could have been found during that period.

With regard to the first requirement, the seasonal rounds of Cree and Dené land use activities which will be discussed in chapters 7 through 10 will present some expectations, based on ethnohistorical materials, of what types of resources would be sought in each season during different periods in history. There are, no doubt, at least some errors and omissions in the presented ethnohistorical reconstructions. However, these reconstructions would still be useful as an important beginning place for basing predictions of the types of areas most likely to contain sites of different kinds. Any subsequent independent testing of predictions made based on these reconstructions would help to identify where corrections and/or further work is needed.

The second requirement for predicting specific areas in which sites should be expected can pose some difficulties. While mineral resource locations (lithic quarries, clay deposits, salt springs, and so forth) would tend to be stable over relatively long periods of time, plant and animal habitats can shift quite regularly. Environmental changes may be

short term and cyclical, such as those resulting from an extensive forest fire, or longer lasting, such as global climate changes which produce significant shifts in ecological zones.

Palaeoecological studies can be done which may help to reveal changes in habitat over time. However, conclusions based on these studies tend to be quite general and rather tentative. Pollen studies, for example, rather than being location-specific, can only define changes in ecology over relatively large areas due to the potential for regional distribution of pollen grains borne on wind (C.T. Shay, 1998: personal communication).

The reconstructions to be presented in this study, beginning with the Late Woodland period, have focussed on roughly the past 1300 years in north-central Manitoba. This is a period of time during which no major climate change is believed to have occurred which would affect the study region in a critical way (Bryson and Wendland, 1967:279,281; Ritchie, 1983:168; Wood, 1983:32,33).[24] Any changes in plant and animal species distributions in this region since the beginning of the Late Woodland period would likely have been short term.[25]

One effect of the limited climatic fluctuations occurring during this time period which may have had a more significant effect on the use of north-central Manitoban territories was the north and south shifting of the treeline. Although pollen studies have not indicated that the northern treeline ever retreated as far south as the middle Churchill River during at least the past 1300 years, it has been as much as 100 km or more south of its present position (Sorenson and Knox, 1973:191,203). In turn, the northwestern transitional forest zone has also shifted southwards at these times, as would the plant and animal species associated with it.

For the most part, however, changes in species distributions and associated human land use through the study region due to environmental fluctuations most likely would have been more in location or extent, rather than in kind. Given this likelihood, it should be possible to identify what areas within a region would have had greater potential for containing select economic resources (the specific plants and animals varying with stages of

forest succession) based on an understanding of topography, hydrology, soils, local climate and resulting vegetation communities. These factors affect not only the comfort of locations for people, but also the suitability of the areas for plant and animal species useful to humans (Dalla Bona, 1993:16).

Once the types of areas useful to the people have been defined, *the specific types of locations* selected for the different land use activities within these can be predicted. It would be those local physical features affecting site accessibility and convenience, safety and comfort which tended to have the most influence on decisions of what specific sites would be used within an area. The explicit distance to various critical resources could also have been a factor in selecting one site over another within a given area containing those resources. In some instances - such as special-purpose sites like quarries and other resource gathering places, and even the associated satellite camps - the local presence of the targeted resource would take precedence over factors affecting comfort (Kvamme, 1985:228; Rogers and Black, 1976:23,24; Wood, 1978:261).

Social and spiritual influences not directly connected to any on-site physical variable could have been important factors in site selection as well (Dalla Bona, 1993:17). However, it is easier for those archaeologists who are not a part of or very familiar with the cultures whose land use is being modelled to observe the physical settings of sites than it is for them to understand the social or spiritual significance of those sites. As a result, archaeological predictive models of site location are commonly based dominantly or solely on observable, physical criteria (e.g. Dalla Bona, 1993, 1994b; Finnigan and Gibson, 1996; Hammer, 1993; Hanna, 1974; Kvamme, 1985; Parker, 1985).

In order to predict specific locations used by people for various purposes, the archaeologist must have an understanding of just what site-specific factors were in fact being sought. As has been discussed, predictive models based solely on observations of correlations between sites and their settings are prone to bias, omissions and over-generalizations and are more useful for describing than explaining site distributions (Dalla

Bona, 1993:14,15; 1994a:5; Kohler and Parker, 1986:399; Warren, 1990:90). Theory-based predictive models in which predictions of what sites would be chosen for use are developed based on some understanding or hypothesis of the peoples' patterned land use behaviors, goals and criteria (Dalla Bona, 1993:15; Dalla Bona, 1994a:5,6; 1994b:51; Hammer, 1993:40; Kohler and Parker, 1986:399,432,439; Warren, 1990:90,91) are the alternative.

Ethnographic analogy may again be useful for defining what these behaviors, goals and criteria may have been for different peoples, at different times of year. The sources on which the ethnographic analogies used in the reconstruction of seasonal land use patterns are based could be useful for not only defining what general areas these people may have preferred to use, but what specific types of locations within them. Unfortunately, while ethnographic analogy tends to be quite useful in defining what sorts of activities would be emphasized by people at different times, less often recorded are the necessary details on what environmental characteristics influenced people's choices of specific sites for these activities.

Any detail regarding how people chose their activity locations included in ethnographic, ethnohistoric and similar sources could be considered for use in developing a model for predicting site locations. Where such specific detail has not been found, however, it can become necessary to make informed guesses about what would 'logically' have made a good site for the different activities and purposes identified or hypothesized to have been carried out. Based on an idea of what the seasonal requirements would be for different activities, such hypotheses of where sites could be expected can be made with reference to the land use potential of different locations across the landscape. The land use potential of a location or area is defined as the range of potential uses to which a site or tract of land might have been put, based on the characteristics and resources of that site or tract of land (Vita-Finzi, 1978:80).

Such predictions, of course, must be acknowledged to be speculative. They run as much or more of a chance of being erroneous than those hypotheses based on specific detail in the ethnographic and ethnohistoric records regarding site selection. But again, testing of any predictions made based on hypotheses - whether inspired by empirical correlations, ethnography, or speculation - against actual site distributions discovered through independent and statistically unbiased survey would theoretically reveal any such errors. The first step, however, and the focus of this thesis, is to develop the hypotheses on which the predictions may be based.

4. NORTH-CENTRAL MANITOBA: THE ENVIRONMENTAL AND CULTURAL SETTING.

Because the ways in which people live are often directly affected by the nature of their physical, social and spiritual environment, it is important to begin any reconstruction of land use with a description of these factors. In this chapter, the biophysical setting of north-central Manitoba will be described. Where greater detail could be useful for prediction or explanation of specific land use activity locations (the habitat preferences of useful plants, for example), this is provided in appendices at the end of the thesis.

The historical development of a people also has an effect on how they come to live. For this reason, an overview of the archaeological history of north-central Manitoba is provided here as well.

A large portion of the North American continent is covered by boreal forest - northern woodlands dominated by coniferous trees. While there is some tendency to think of the boreal forest as a single basically homogeneous ecological zone (e.g. Wright, 1981:86), there are variations from region to region in the landscape and in the vegetation and animal-life represented. For this reason, when attempts are made to understand and model peoples' adaptations to and use of the environment around them, these regions are best considered case by case.

The area of most interest for this study is the region surrounding the Southern Indian Lake section of the Churchill River in north-central Manitoba (56°20' - 57°40' N, 98° - 100° W). The Southern Indian Lake region is part of the Canadian Shield physiographic province (Rowe, 1972:159) and falls within both the Northern Coniferous (or full boreal forest) and Northwestern Transition sections of the boreal forest (Flanders et al., 1973:3,4) (figure 4.1). The region is in the zone of discontinuous or widespread permafrost (Beke et al., 1973:4; Fisheries and Environment Canada, 1978: Map 32).

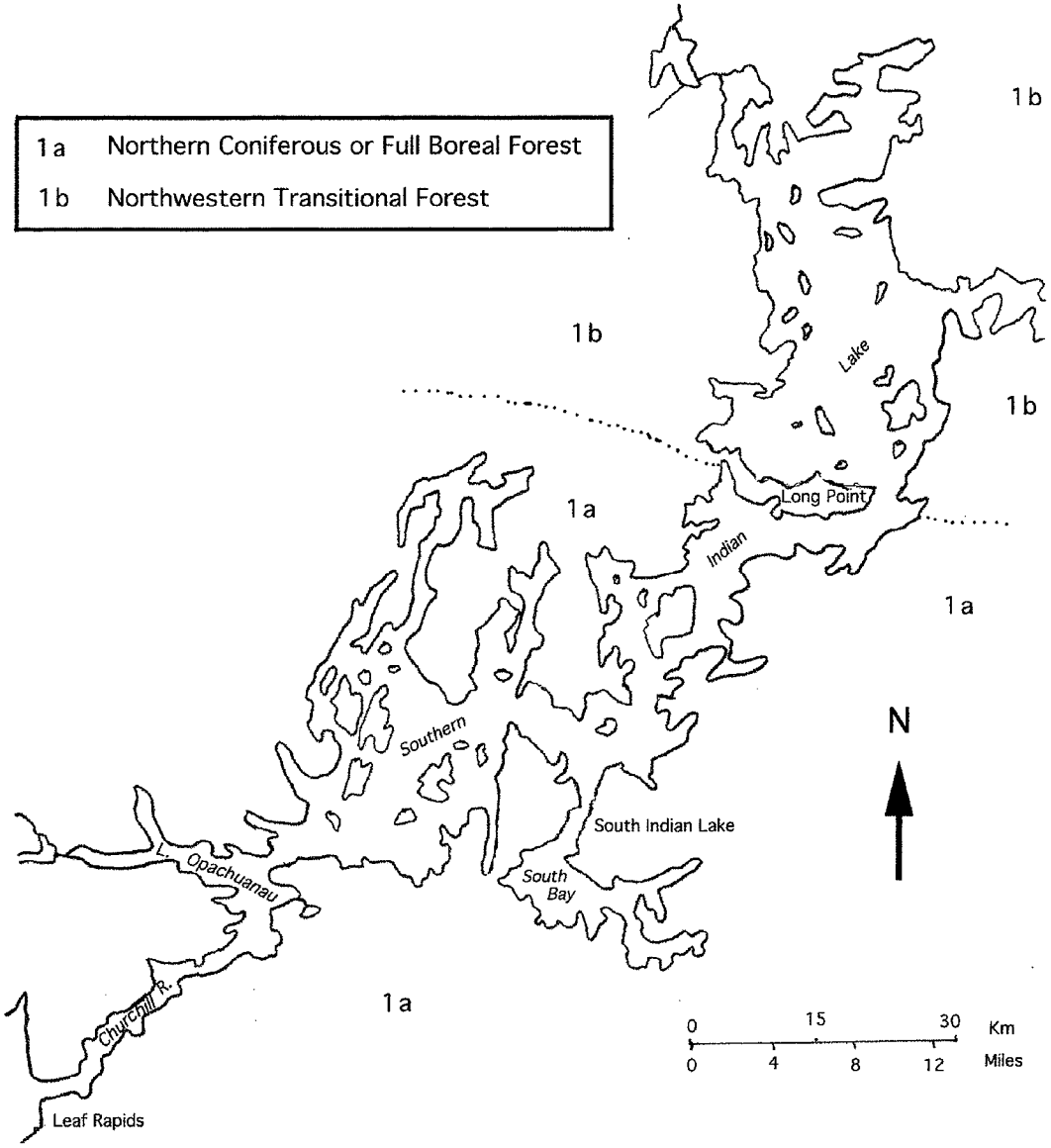


Figure 4.2 Approximate Boundary between Full Boreal Forest and Northwestern Transitional Forest in relation to Southern Indian Lake.

(Map traced from Kroker, 1990:54; forest boundary line based on Shay, 1980:242).

4.1 The Landscape: Physical Geography.

4.1.1 Environmental History.

The physical environment varies not only over space, but also over time. For this reason, a brief review of the environmental history of the Southern Indian Lake region is in order (table 4.1).

Table 4.1 Post-glacial climate changes in central Manitoba.

11,000 to 6000 years Before Present	Climate warming and drying	Glacier melts, Lake Agassiz drains northward; Grasslands expand northward
6000 to 3500 B.P.	Climate warm, increasing precipitation	Expansion of boreal forest north and southwards
3500 to 2500 B.P.	Climate cooling	Northern tree line retreats southward to near present location, and sometimes south of it
2500 to 1500 B.P.	Climate similar to somewhat cooler than modern	Forest similar to modern; tree line further sometimes south than present, such as around 1800 B.P.
1500 to 700 B.P.	Slight warming and drying of climate	Boreal forest shifts northwards
700 to 100 B.P. (to A.D. 1850)	"Little Ice Age": Cooling climate, with increased precipitation	Northern tree line retreats southward; lake levels increase
after A.D. 1850	Modern climate	Modern forest community

(based on information from: Bryson and Wendland, 1967; Lockery, 1984; Ritchie, 1983; Shay, 1984; Sorenson and Knox, 1973:203; Teller, 1984).

Many Aboriginal nations, including Rock Cree and eastern Dené (the 'Chipewyan' peoples, of which the Edthen-eldeli Dené represent the easternmost groups), have passed on histories about a great flooding long ago, sometimes telling that it had followed the return of summer that melted the ice and snow of a very long winter (e.g. Birket-Smith, 1930:84-86; Brightman, 1989:97; Linklater, 1994:31). [26] The present landscape of the Canadian Shield is largely a product of this long winter - the last glacial age - during which the region was covered for thousands of years by a sheet of ice up to 2 or 3 km thick. The mass was so

great that it caused the land to sink beneath the weight. Where the ice was thickest, above what is now Hudson Bay, the land may have been depressed as much as 1000 m below its pre-glacial level (Lockery, 1984:56; Teller, 1984:24, 25).

As the climate warmed, the ice began to melt and the glacier retreated. By about 11,000 years B.P., the ice was disappearing from the southwest corner of Manitoba (Dyke and Dredge, 1989:206,207; Teller, 1984:25). The margins of the ice sheet continued to shrink back, and by 8400 years B.P. all but the northeastern corner and the northern margin of the province were free of the glacier. Within about 400 years, the glacier had disappeared from Manitoba (Dyke and Dredge, 1989:206; Geological Survey of Canada, Map 1703A, sheets 2, 3).

The movement of the ice sheet over the land scoured the surface, wearing down the bedrock and carrying away clay, silt, sand, gravel and boulders which were spread out over the landscape as the glacier melted away. Left behind was the blanket of sediment that now covers much of the Canadian Shield, as well as kame hills and eskers: kames being hill-like deposits of sand and gravel, and eskers being the long, winding ridges of sand and gravel deposited by glacial melt-water (Teller, 1984:26,27,34).[27] The melt-water itself formed a glacial lake - Lake Agassiz - along the southern margin of the ice sheet as the water drained out from beneath.

With the melting away of the glacier, the land began to rise again - a process known as isostatic rebound (Lockery, 1984:56; Penner and Swedlo, 1974:105, 107). Freed of the weight of the ice, the land in the south rose rapidly relative to that in the north which was still glaciated. With the downwards tilting of the land towards the Hudson Bay region, melt-water accumulated behind the ice sheet rather than draining away. Rivers flowing towards Hudson Bay were also dammed by the glacier. As a result, glacial Lake Agassiz became a massive body of water in front of the melting ice sheet and drained gradually north and eastwards as the ice retreated. It flooded most parts of the province of Manitoba at one time or another until about 8000 years ago, when Lake Agassiz at last breached the

ice dam and drained into Hudson Bay (Dyke and Dredge, 1989:206; Geological Survey of Canada, Map 1703A, sheet 3; Teller, 1984:35).[28] The thin veneer of clay that covers many low areas of the Shield settled out of the water of the glacial lake.

As the weight of both the glacier and the lake were removed, the land in the northern parts of Manitoba then began to rebound as well. It has since been rising relative to the land in the south. Even today, the Hudson Bay region continues to rise at a rate of about 1 metre per century (Teller, 1984:25), and more land emerges from the waters of the Bay. With this tilting, the north ends of large lakes have been rising higher than their south ends and these lakes either expand or shift southwards, depending primarily on the location of their outlets (Lockery, 1984:57; Penner and Swedlo, 1974:108).[29] So while the present lakes and rivers of the Canadian Shield are part of a landscape shaped by glacial processes thousands of years in the past, they cannot be assumed to have kept the same form or position through all that time.

Since the end of the glaciation, the climate of north-central Manitoba has altered a number of times, with associated changes in regional vegetation. From pollen records, it seems that between about 11,000 until 6000 years ago, the climate of this region continued to gradually become warm and dry. The spruce forest that rapidly colonized the land following its deglaciation spread northwards, and more deciduous species appeared in the central Manitoba region (Bryson and Wendland, 1967:391; Ritchie, 1983:159,160,168; Shay, 1984:101,102).[30] With the increasingly arid conditions, fires were common and the grasslands reached their northernmost extent in Manitoba, around The Pas, by about 6000 BP (Shay, 1984:103). Surface water would have been less, and lake and river levels are expected to have lowered (Lockery, 1984:57).

Precipitation increased again after 6000 BP (Dyke and Dredge, 1989:214; Lockery, 1984:50; Ritchie, 1983:168) while temperatures continued to rise. Over the next 2500 years, the climate was at its warmest since before the ice age, and the spruce forest reached

its greatest northwards extent - about 250 km north of the present-day treeline (Bryson and Wendland, 1967:391; Dyke and Dredge, 1989:214; Shay, 1984:104).[31] The forest in the Southern Indian Lake region probably included a larger amount of deciduous tree cover at this time (Ritchie, 1983:168; Shay, 1984:102), and water levels in the lakes and rivers may have risen again.

After this warm period, the climate began to cool quite rapidly, approaching conditions similar to today's by about 2500 years ago. The northern treeline likewise shrank back to approximately where it is at present, and the forest in north-central Manitoba became dominated once more by spruce (Bryson and Wendland, 1967:392; Ritchie, 1983:167; Shay, 1984:104).

Since that time, roughly 2500 years ago, the climate and forests of central Manitoba have been relatively stable, with only minor fluctuations (Ritchie, 1983:168; Shay, 1984:105)[32,33]. Possibly there were some short periods of cooler temperatures. It has been estimated, for example, that the treeline retreated even farther south of its present position for a time following a decline in summer temperatures approximately 2500 years ago (Dyke and Dredge, 1989:214). Similarly, at 1800 BP the treeline again appears to have been farther south (e.g. Sorenson and Knox, 1973:203). Between roughly 1500 and 700 BP, the region was slightly warmer and drier than today, and the forest again expanded to approximately 100 km north of today's treeline. This was followed by cooling and by increasing precipitation that culminated in the 'Little Ice Age' of about A.D. 1550-1850 (Bryson and Wendland, 1967:294-296; Dyke and Dredge, 1989:214; Ritchie, 1987:94,95; Wood, 1983:32). This was the period of the treeline's maximum southwards retreat, to possibly 100 km or more south of the present forest fringe in northern Manitoba (Sorenson and Knox, 1973:191,203). Just as the treeline shifted north and south with warming and cooling temperatures, the level of lakes and rivers could be expected to have increased or decreased with an increase or decrease in precipitation, as would have the extent of muskeg in the region (Bryson and Wendland, 1967:294; Wood, 1983:32).

Overall, these more recent variations in climate would not be expected to have greatly altered the plant and animal life present in the Southern Indian Lake region. This is because Southern Indian Lake seems to have been south of the northern treeline and north of the grasslands in all periods since spruce first forested the region shortly after the retreat of Lake Agassiz.[34] Thus, the modern environment may be considered to have existed in the Southern Indian Lake region throughout the Late Woodland period. If there have been any significant changes over the region as a whole, these have most likely been in the distribution of migratory species like the barren-ground caribou which like to spend their winters just south of the treeline (Wood, 1983:33).

4.1.2 **Climate.**

Weather patterns fluctuate annually, but the overall climate of a region can be generalized for specific periods of time. For example, the climate of the Southern Indian Lake region today is characterized by relatively short, cool to warm summers and long, cold winters (Beke et al., 1973:3). The northern portion of the region is slightly cooler and wetter than the southern. The average July daily temperature is roughly 15°C, and in January, -25°C (Fisheries and Environment Canada, 1978: maps 14,15). Minimum January temperatures have been recorded as low as -49°C (Ecoregions Working Group, 1989:20,23).

An average of 380-430 mm of precipitation falls yearly over the region, only about one third of which falls during the colder months as snow (Cleugh, 1974:3). On Southern Indian Lake, snows are normally deepest by March, at which time there can be 70-100 cm of snow accumulated (Fisheries and Environment Canada, 1978: Map 11). Snow accumulates mostly in valleys and on the lee side of trees, ridges and hills. It is soft and deep in the closed forest, more packed in the open forest, and relatively hard-packed over the wind-swept ice. Exposed ridge and hill tops and some larger lakes often get swept bare of snow cover (Gardner, 1981:10).

Winds in the Southern Indian Lake region can be quite variable, but the most frequent, strongest and coldest winds come from the northwest direction (Fisheries and Environment Canada, 1978: Map 16; Williams, 1969:171). In general, the prevailing winds are those from the westerly quarter (Dickson, 1972:128).

4.1.3 **Geology and Physiography.**

> They refer to themselves the *assiniskwawidiniwok*, or people of the place where there is an abundance of rocks (or stones), i.e. the general area of the Canadian shield (Smith, 1975:174).

The region of Southern Indian Lake is located on Canadian Shield - an expansive plain of Precambrian granitic and gneissic bedrock, thinly mantled with glacial drift and lacustrine clays, and dotted with numerous lakes and extensive bog. As suggested by one name used to identify the Cree populations who have for generations been the principle residents of this region - *Assiniskwawidiniwok*, or 'Rock Cree' - the Shield is characterized by abundant bedrock outcrop, found along shorelines and as outcrop ridges and hills farther inland. The thick deposits of the drift and clay that cover the region accumulate between the outcroppings, subduing the local relief, so that the mostly granitic bedrock-controlled landscape tends to be gently rolling. Where local belts of gneissic or volcanic bedrock occur, however, it is more angular, with greater relief (Beke et al, 1973:16; Ritchie, 1962:15).

4.1.4 **Surface Geology.**

Although the Southern Indian Lake region is generally more hilly than much of the surrounding area, it is still overall quite low, with relief rarely much more than 20 m above lake level. The silts and clays that dominate the surface, especially in depressions and in the valleys between outcrop ridges, tend to be rather poorly drained, resulting in peaty, organic soils developing on top of the saturated clays (Klassen, 1986:4). Clay soils are better drained on moderate to steep slopes (Geotechnical Section, 1974:64).

While blanketing clays are common throughout the entire Southern Indian Lake region, they are thickest and most extensive at the southern end, where as a result there is comparatively less outcrop inland from the shoreline (Geological Survey of Manitoba, 1969:50; Klassen, 1986:14; McInnes, 1913:85). The shorelines of South Bay are of particularly thick clays, with low relief, and there is rather little sand beach (Geotechnical Section, 1974:237). The clay deposits thin somewhat to the northwards. Along the northeastern shore of Southern Indian Lake they are replaced by high sand outwash plains and hummocky ground moraine deposits which in contrast to the clays are better drained (Dyke and Dredge, 1989:201; McInnes, 1913:85,86, 116).

Kame and esker complexes occur sporadically throughout the region. Around Southern Indian Lake itself these are most prominent at the northern end where they tend to be oriented in a northeast-southwest direction (Bellhouse, 1971:3; Beke et al., 1973:18). There are also a number of small eskers in the Leaf Rapids locale, north of the Churchill River (Klassen, 1986:12; Ringrose and Large, 1974:55). Like the sand plains, these sand and gravel features are higher and better drained than much of the surrounding landscape.

4.1.5 **Hydrography.**

The Canadian Shield is a country of innumerable lakes and streams. The larger rivers have been carved into the bedrock itself, long before the last glaciation. McInnes (1913:4) remarked of the Churchill and Nelson rivers:

> The river valleys are moderately depressed, and are made up generally of chains of rock-bound basins which form series of lake-like expansions along the rivers, the water spilling over the lowest part of the rims and flowing from basin to basin with swift current or over a succession of rapids and falls.

Southern Indian Lake is the largest expansion of the Churchill River. Much of its shoreline is exposed bedrock or bedrock-controlled,[35] as is that of the adjacent Leaf Rapids section of the Churchill River (Beke et., al., 1973:128; Geotechnical Section, 1974:240).

Prior to the rise in lake level associated with the Churchill River diversion, Southern Indian Lake covered about 1900 km^2 of Shield, with over 3500 km of a very irregular shoreline characterized by numerous points, bays and islands. The level of the lake was about 837 feet (255 m) above sea level (a.s.l.), and its maximum depth was 37 m. Not a very deep lake overall, its mean depth was only 9.2 m (Cleugh et al., 1974:11). In particular, South Bay was quite shallow, with an average depth of 3.9 m prior to flooding, and as a result could be very wavy (Cleugh et al., 1974:8; Hecky, 1974:40).

The Churchill River Diversion Project produced an increase in lake level of about 3 m, to 846± feet (258 m) a.s.l. This caused the lower shorelines to be flooded, in some places a considerable distance back, resulting in an increase of roughly 44,500 hectares in lake area and significant changes to several portions of the shoreline (Kroker, 1990:10, 181).[36] This has been only the most recent change to the level and extent of Southern Indian Lake. As has been noted, lake levels in the region have increased and decreased with changes in climate. In addition, with isostatic rebound, Southern Indian Lake seems to have been expanding southwards. While this expansion will have slowed over time, it continues to this day. The southern shoreline of thousands of years ago has long been flooded, while its northern shore seems to be at roughly the same position as it was in its earliest years (Pettipas, 1976:62,64; Wood, 1983:47). The entrance of the Churchill River into Lake Opachuanau will have similarly been flooded back farther to the southwest over time. The gradient of the Churchill River is expected to have decreased overall, as well (Wood, 1983:47), which would result in a slower flow of water, with decreased erosion of the Shield and increased deposition of water-borne sediment.[37]

Presently, bottom materials vary over different parts of the lake, ranging from solid rock to fine clays, but overall, the deeper, offshore areas have sandy or rocky bottoms, while silts and clays dominate the shallower, inshore areas, including most of South Bay. In contrast, the channel of the Churchill River in the Leaf Rapids locality is mostly bare rock except for the sheltered bays where the sediments have accumulated (Hecky, 1974:4,5).

Particularly thick deposits of silts and clays are laid down where streams enter the river or lake, and marsh is common in these locations (Ringrose and Large, 1974:55).

As noted, the majority of shorelines along the Churchill River and of the lakes along its course are exposed bedrock or bedrock-controlled.[38] These can take many forms, however, from vertical bedrock cliffs to wide, low clay beaches providing diverse habitat for plants and wildlife in the area. A wide range of shoreline types had been classified for the Churchill River Diversion study area, prior to the diversion (e.g. Geotechnical Section, 1974; Orecklin, 1976; Webb, 1974; Wiersum and Mallory, 1973). These sources can be consulted for more detailed descriptions of the different shoreline classes and their pre-diversion distributions (see Appendix 1).

4.1.6 **Seasonal Changes in the Lakes and Rivers.**

Over the course of a single year, the levels of rivers and lakes in this region can change significantly. Prior to the regulation of Southern Indian Lake, the average annual range of its level was from a minimum of 834.1 feet (254.3 m) a.s.l. in the early spring before break-up, rising to a maximum of 842.6 feet (256.9 m) a.s.l. in the mid to late summer, a difference of roughly 2.6 m (Geotechnical Section, 1974:242). Upstream, comparable changes in the flow of the Churchill River in the Leaf Rapids locality occurred a few weeks earlier than those on Southern Indian Lake (Cleugh, 1974:79).

Even more important changes in subarctic rivers and lakes to the people that make use of them are the annual events of freeze-up and break-up. In the Southern Indian Lake region, ice cover begins to form around mid-October in a normal year, the sheltered bays and small creeks freezing up fairly quickly. The main body of the lake tends to be frozen over by mid-November except in certain narrows with fast water, such as that between Southern Indian Lake and Lake Opachuanau, which may sometimes remain open all winter (Cleugh, 1974:19; Penner, 1974:4,7,8). The Churchill River tends to take a week or two longer to freeze than the lake, and where there are major rapids, may not freeze over at all

(Cleugh, 1974:19). By late winter, ice on Southern Indian Lake has reached its thickest, up to 100 cm or more in some places (Cleugh, 1974:21). The ice begins to break earliest at the rapids and narrows, normally in early May. By early June, Southern Indian Lake is generally free of ice, the Churchill River normally having been clear for some weeks by this time (Penner, 1974:4). Ice can be unsafe for crossing for weeks before it actually breaks (Penner, 1974:8).

4.2 **Ecology: The Boreal Forest.**

4.2.1 **Vegetation.**

Vegetation in the northern forests is influenced by a number of regional and local factors, including climate, soil type and depth, and topography (which influences microclimate and soil characteristics). Because these vary from site to site, the boreal forest is a mosaic of patches of different communities of plants. These communities also vary over time, evolving from early stages characterized by plants that colonize an area soon after a major disturbance such as a burn or parasite infestation, to the climax stage at which they remain until the next disturbance, further increasing the 'patchiness' of the forest (Ritchie, 1956:25; 1987:149).[39]

In the Northern Coniferous forest the dominant climax forest is black spruce. Dense stands can grow where the soil is moderately well-drained, with secondary stands of birch, aspen and jack pine. Where the ground is very wet, a more open 'black spruce bog' (treed muskeg) will develop. In both moist and wet sites, sphagnum and feather mosses carpet the forest floor, and on the moist sites, shrubs such as Labrador tea, dwarf birch, cranberry and blueberry grow wherever the tree cover is open enough to let in adequate light (Flanders et al., 1973:6,20,24; Ritchie, 1956:528-530; Shay, 1984:109).

Dry sites, including thin-soiled outcrop ridges, eskers and sand plains, are more often dominated by jack pine forest, although over time, more and more black spruce will grow among the pine. Lichens, mosses and small shrubs including lowbush blueberry are

common in the understory of these dry forest patches (Beke et al., 1973:51; Flanders et al., 1973:20,24; Ritchie, 1956:538,541,542,555; 1962:24; Shay, 1984:109,115).

Deciduous and mixed stands of trees can be found along shorelines and on ridges or hills where the soils are rich and moderately well-drained. Trembling aspen and balsam poplar are most often found in the backshore of sheltered river and stream valleys, as are the culturally important white birch.[40] Balsam fir and white spruce can be found in similar favourable locations, especially those with southerly exposure (Bellhouse, 1971:9; Flanders et al., 1973:20; Ritchie, 1956:543,545; 1962:24).

In the Southern Indian Lake region, the Northwestern Transitional forest is still quite similar to the Northern Coniferous (full boreal) forest to the south. It tends to be more open in general, with smaller and sparser trees. Lichens (*Cladonia*) replace mosses as the dominant ground cover and tamarack replaces jack pine and aspen as the dominant species in early forest communities on dry and moist sites. Good stands of trees are generally limited to a band of about 30 m width along favourable shorelines, behind which is open black spruce forest in the moist sites, or treed and open muskeg in more saturated sites (Beke et al., 1973:5; Flanders et al., 1973:6,21,22; Shay, 1984:115).

Fires are quite common in these regions, so the forest is dominated by patches in the earlier stages of development (Ritchie, 1956:557).[41] The first plants to colonize an area after a burn are the grasses and herbs, followed by a shrub stage during which berries are plentiful. About a decade after the burn, young trees begin to dominate the area. On moist sites with good soil in the northern coniferous forest, these are mostly aspen, poplar and some birch,[42] later replaced by jack pine forest. On rockier and drier sites, a birch and jack pine forest develops initially, followed by a more continuous pine forest. Over the next few decades, black spruce begin to invade all but the driest sites and black spruce forest will eventually cover the area. Black spruce tends to be both the early and climax tree species on the boggier sites (Beke et al., 1973:35,125,128; Feit, 1969:113; Ritchie, 1956:559; Shay, 1984:96).

While archaeologists have traditionally emphasized the hunting component of 'hunting and gathering' economies, Aboriginal people living in the boreal forest regions have made considerable use of plant materials for food and drink (for important nutrients, variety, and as a staple when meat is more scarce), for medicines, fuel, and as raw materials for a variety of uses including tent poles, drying racks, cordage, fish nets, canoe coverings, containers, dyes, diapering materials, and many others (Black, 1973; Franklin, 1910:81-83; Leighton, 1986; Shay, 1980).

Black (1973:88,89) found that in the Shield regions, over 90% of all plants used by people were harvested from either moist to wet habitats and/or recently disturbed areas. Shay (1980:240) showed that regarding the many food plants presently found in the boreal forest of Manitoba[43] , "(w)etlands offer the greatest variety of underground parts and seeds; semi-open and mesic [moist] areas are rich in berries; and greens are divided between these and open and dry sites. The least productive habitats are apparently dense forest stands" (see Appendix 2). Of all the forest patches, the black spruce bogs, which are especially common in low areas in the northwestern transitional forest, are the least productive of useful plants except for the sphagnum mosses and willows which can be gathered from around their edges (Mallory, 1975:2; Shay, 1980:250,253).

Recently burned sites can be useful to people living off the land for, among other things: the large number of food and medicinal plants that favour such conditions; the wildlife, especially moose and bear, that are attracted by the lush fresh growth of greens and berries and by the salt deposits; and the supply of fire-killed timber around burn edges that makes excellent firewood (Hrenchuk, 1991:94; Lewis, 1982:49,50). Because of this, Cree and other Aboriginal people in the boreal forest have been known to not only visit accessible natural burns, but also to have intentionally burned and re-burned certain portions of their environment in order to maintain early successional stages in chosen locations. This was most often done in the springtime when conditions were still wet and mild enough to allow the fires to be more easily controlled (Lewis, 1982:49,51; Martijn and Rogers, 1969:19,20;

e.g. Hearne, 1971 [1795]:270; PAM MG1 B1, Ia:144,158).

4.2.2 **Wildlife.**

The patchy environment of the boreal forest provides diverse habitat for many species of wildlife. Kroker (1990:30-34) has compiled a list of those mammals, birds and fish that are present in the Southern Indian Lake/Churchill River Diversion region.[44] Essentially, the large game in the boreal forest are moose and woodland caribou, which are present year-round, and barren-ground caribou during those winters that their migrations take them south of the northern portions of the northwestern transitional forest. Black bear are also found throughout the forest. Other mammal species characteristic of the region include beaver, muskrat, river otter, mink, marten, fisher, weasels, wolverine, skunk, lynx, wolf, fox, snowshoe hare, porcupine and numerous smaller rodents. Birds are represented by a large number of songbirds, crow and raven, various owls, raptors, gulls, loon and shore birds. Particularly important to local hunters are spruce grouse and ruffed grouse, both year-round residents, and the waterfowl that pass over the boreal forest in the spring and fall, some nesting along the shorelines for the summer. Migratory waterfowl include Canada goose, a variety of ducks, and whistling swan.

As with plants, the majority of animal species in the boreal forest which have been considered most important to human populations can be found in two principle types of locations: shorelines and the moist forest bordering them, and the young vegetation communities of recently disturbed areas (Feit, 1969:61; Hamilton and Larcombe, 1994:13; Mallory, 1975:2). Marsh shorelines are particularly attractive to a number of important wildlife species, including moose, beaver, muskrat and nesting waterfowl (Webb, 1974:14-18). Detailed descriptions of the types of habitats used by different species of game, and their distributions around Southern Indian Lake are given in Appendix 3.

Although no major changes to the make-up of boreal forest wildlife are expected to have occurred over at least the past 2000 years (Wood, 1983:32), the make-up of the communities of wildlife present in individual forest patches change cyclically over the short

term with the evolution of forest communities following disturbances (table 4.2). In contrast, fish are not so directly influenced by forest community as mammals and birds, and so should be relatively stable populations in the boreal forest.

4.2.3 **Fish.**

Numerous fish species live in the northern lakes and rivers. Some of the more important species to people include whitefish, pickerel, jackfish, suckers, lake trout and lake sturgeon. Descriptions of the habitats and distribution of species around Southern Indian Lake are given in Appendix 4.

Fish generally spend the summer and winter in deeper water and are not very mobile. This makes it difficult to catch large numbers of fish in these seasons. Fishing is more productive during spring and fall, especially during the spawning runs. Spring spawning runs are usually extended, dropping off slowly over a period of months. Fall runs are more concentrated and are over in a matter of weeks. In spring, fish tend to either approach lake shorelines to spawn in the shallows, or ascend rivers and streams to a rapids or shoal, while fall spawners more often gather in offshore shoals in the lakes (Cleland, 1982:766,774-775; Winterhalder, 1978:363).

The runs result in large concentrations of fish in predictable locations for short periods of time. Such locations include the base of falls and rapids, stream and lake narrows, eddies formed by rock outcrop, and at stream mouths and confluences (Hanks and Winter, 1991:54; Rostlund, 1952:105). Water surrounding natural obstructions like these are, in fact, productive of fish in any season, because their food is often concentrated by the current in these locations (D. Bodaly, 1997: personal communication). Some offshore habitats used by fall spawners appear to be shoals, sudden drop-offs in depth, and the waters about islands and rock reefs (Martin, 1989:597).

Table 4.2 Game and furbearer presence by forest stage.

bare/ grass/ sedge	• small rodents may live in the area, and their predators may visit • moose visit to browse new greens • amphibious mammals: river otter may live along grassy shorelines or in marsh
early deciduous brush	• moose may visit • bear visit for berries • small game: hare are abundant, spruce grouse visit for berries • carnivores: fox may be present, lynx commonly hunt there • amphibious mammals: river otter and mink may live along shorelines
deciduous brush and tree	• moose may visit • bear visit berry patches • beaver and muskrat can move back to shorelines • small game: ruffed grouse and porcupine return, hare remain abundant • carnivores: fox and lynx present • amphibious mammals: river otter and mink continue along shorelines
closed deciduous forest	• moose most abundant here • bear resident • beaver and muskrat continue to occupy deciduous shorelines • small game: ruffed grouse abundant, porcupine common, hare reside • carnivores: lynx, wolf and wolverine may reside, fox declining • amphibious mammals: river otter and mink found along shorelines
climax coniferous forest	• caribou return • moose decline but are still present in the winter • bear hibernate here • beaver and muskrat decline, present only where already established (where beaver can maintain deciduous forest along shorelines) • small game: hare and porcupine decline but may be present in winter, ruffed grouse decline, spruce grouse common • carnivores: marten, fisher, lynx, wolf and wolverine resident, fox rare • amphibious mammals: mink decline, river otter may be present

(based on Banfield, 1974:81-83, 158-61, 198-200, 233-6, 290-2, 299-300, 305-7, 316-20, 330-1, 333-4, 341-3, 349-50, 385-7, 395-7; Feit, 1969:124; Godfrey, 1966:9, 47, 48, 55-83, 107, 109-110, 178).

With their low nutrient levels and cold waters, typical Shield lakes do not support very large fish populations. Owing to the warmer and more nutrient-rich source of the Churchill River, however, Southern Indian Lake and its neighbours have highly productive fisheries (Bellhouse, 1971:8; Hecky and Ayles, 1974a:8,9). Southern Indian Lake was particularly well-stocked in whitefish prior to the diversion of the Churchill River, especially at its northern end where the water was clearest. The one part of the lake which does not appear to ever have had a particularly good fishery is South Bay. Its clay shores and bottom produce murky waters in which few species of fish can successfully spawn. Additionally, the current of the Churchill River did not flow directly through South Bay. This portion of the lake thus received little nutrient input from the river (Ayles and Koshinsky, 1974:19; Hecky and Ayles, 1974a:8,9; Weagle and Baxter, 1973:24,53).

4.2.4 **Mineral Sources.**

There are a number of mineral and lithic sources in the boreal forest that have been important to Aboriginal people. Salt can be a sought after commodity, for itself and because salt deposits attract wildlife. The primary sources of salt are saline springs which people were known to have visited for these reasons (McInnes, 1913:134,135). Hematite-rich clay for red ochre can be mined from some stream banks (Williams, 1969:139). Clay for pottery is available from certain lake and river shorelines in abundance, although more ideal clays can be quite local. Granite to crush up for pottery tempering is also abundant, wherever the bedrock outcrops (Wood, 1983:26). 'Pipestone', a soft, sedimentary rock which was often carved to make pipe bowls, could be quarried from the shorelines of specific, well-known streams and lakes (Williams, 1969:139) such as Pipestone Lake.

Because the basalts and granites of the Shield are not very suitable materials for making most stone tools, finer-grained materials had to also be found. Local sources included rhyolitic outcrop, quartz veins in bedrock outcrop, and the desirable chert cobbles found in glacial till and redeposited river materials (Syms, 1977:27). Chert cobbles are

more common in the Hudson Bay Lowlands and around the lower Nelson River than around Southern Indian Lake (Wood, 1983:26). Known quarries for cherts, quartzes and other useful minerals have not been mapped for the Southern Indian Lake region (Wood, 1983:26), but people living in this area would no doubt have known good sites to visit for these materials.

4.3 **The Cultural Landscape.**

4.3.1 **Today's Communities.**

Communities currently located along the Churchill River in north-central Manitoba include Pukatawagan, High Rock, Granville Lake, Leaf Rapids and South Indian Lake.[45] While residents of these communities, with the exception of the town of Leaf Rapids, are predominantly Rock Cree (*Assiniskwawidiniwok*) (Brightman, 1989:1), the boreal forest of north-central Manitoba is home today to people of a number of First Nations, to Métis people, and to non-Aboriginals. At the time of first European contact, however, and for many generations before, this region was inhabited almost solely by Cree people (Gillespie, 1975:358; Russell, 1991:217; Wright, 1981:92). Edthen-eldeli Dené[46] neighboured to the north, and made occasional trips into the full boreal forest, but preferred to remain mostly within the northern portions of the northwestern transitional forest and the southern barrens (Smith, 1981c:135,136).[47] Today, nearby Dené communities are found at Lac Brochet and Tadoule Lake, both north of the Churchill River.

4.3.2 **Cultures through Time.**

Cree oral history states that they have occupied north-central Manitoba and surrounding parts of the boreal forest "since time immemorial" (François et al., 1995:2; Linklater, 1994:34). People could have travelled to these parts shortly after the land became free of the ice sheet and of glacial Lake Agassiz sometime between an estimated 8400 and 8000 years ago. Archaeological evidence indicates that there have indeed been people at

least visiting this region for thousands of years into the past.[48]

As the edges of the ice sheet retreated back towards its centre and Lake Agassiz drained north and eastwards, the ancient peoples who had occupied the Plains south of the glacier were able to expand into the newly emerging lands. As they migrated into new territories, and as the climate became warmer and drier over time, these people - whose cultures have been labelled 'Plano' by archaeologists - adjusted their economies and lifestyles in order to adapt to their changing environments. On the plains, Plano peoples and their predecessors probably emphasized the herds of giant bison for game (Bryan, 1991: 42; Kroker, 1990:148; Manitoba Heritage Network, 1988). They could, however, be as flexible as they had to be in order to survive and so they made use of many different resources (Bryan, 1991:41; Wright, 1995:37).

When the grasslands expanded north and east into southern and then central Manitoba, the bison herds expanded as well. This could have attracted the bison-hunters to these regions (Bryan, 1991:40,42; Kroker, 1990:148,150), much as they had been attracted to central Saskatchewan when it became free of ice roughly 9000 years ago (Bryan, 1991:42; Manitoba Heritage Network, 1998). It appears that by about 8000 years ago, as they continued to increase their range, some of these people had left the plains for the fringe of coniferous forest to the north. These 'Northern Plano' peoples were likely drawn into this new environment by the herds of caribou which flourished there (Manitoba Heritage Network, 1998; Wright, 1995:86,99); the locations of known Northern Plano sites (primarily found on eskers and at caribou water crossing places in Keewatin) suggest that the people were now focussing their economies on migratory caribou (Manitoba Heritage Network, 1998; Nash, 1975:165; Wright, 1981:87; 1995:111). They made other adjustments to their new surroundings, reflected in their changing tool kits as they adapted to the conditions of the northern forests and the tundra (Wright, 1995:103,104).

With the expansion of the grasslands as the climate warmed and dried, some Plano peoples were also moving eastwards just as others were expanding to the north. This took

some to the eastern margin of the plains at that time, somewhere around the Winnipeg River region (Pettipas (ed), 1983:38). The warming climate of this time was making bison on the plains less dependable. So, although they continued to hunt bison when they could, these people also made use of boreal forest resources, adding moose, caribou and small forest game to their diets, for example. Over time, they moved farther into the forests and became better adapted to this lifestyle (Manitoba Heritage Network, 1998; Pettipas (ed), 1983:40-42).

While there is some evidence of peoples of the Plano cultures in north-central Manitoba (Larcombe, 1997b:85,88),[49] they do not seem to have been numerous. Evidence of Eastern Plano peoples in the boreal forest, for example (e.g. the Caribou Lake archaeological complex of southeastern Manitoba) has not been detected in north-central Manitoba at all (Manitoba Heritage Network, 1998), probably because much of this region was still under the waters of Lake Agassiz when Plano peoples first began expand north and east.[50] It was not until the lake had drained away and some of the Northern and Eastern Plano peoples had more fully adapted to the boreal forest that people expanded into most parts of the Canadian Shield, including north-central Manitoba (Kroker, 1990:152; Manitoba Heritage Network, 1998; Pettipas (ed), 1983:77; Wright, 1995:121,261).

Based on the archaeological record, it appears that the earliest people to have regularly made north-central Manitoba part of their homeland after the retreat of the glacier and of Lake Agassiz were members of the first culture complexes adapted specifically to the forested Shield environment. As a group, these have been labelled 'Shield Archaic' or 'Early Shield' and 'Middle Shield' - belonging to the most ancient peoples of the Canadian Shield (Kroker, 1990:152; Manitoba Heritage Network, 1998; Pettipas (ed), 1983:77; 1989:28; Wright, 1981:88; 1995:121,261).

The Shield cultures seem to have grown out of those of Northern and Eastern Plano peoples who were spending increasing amounts of time in the boreal forest environment and adjusting their subsistence and settlement patterns accordingly (Manitoba Heritage

Network, 1998; Wright, 1995:97,99,104,121,261). Archaeologists have used the adoption of the spear-thrower by the Plano peoples in this region - reflected in the introduction of new, lighter and smaller styles of projectile points into the archaeological record - to mark the beginning of this new culture period (Manitoba Heritage Network, 1998; Wright, 1995:97,116). In the Shield regions of Manitoba, these points range in age from roughly 4500 to 2000 years (Kroker, 1990:152; Pettipas (ed.), 1983:77; Wright, 1995:263).

This was a period of growing human population and diversification of cultures. As groups of people spread out over the Shield and surrounding regions, they adapted their lifestyles to the local conditions and resources of the particular areas in which they settled. The older culture complexes, which appear to have been quite similar even over broad regions, thus gave way to a number of more localized, distinct archaeological culture complexes (Larcombe, 1997a:9,11; Manitoba Heritage Network, 1998; Wright, 1995:116,175,262).[51]

The warm and dry conditions of the later Plano Period had caused the bison herds to decline as drought conditions on the Plains became more and more common (Manitoba Heritage Network, 1998; Pettipas (ed), 1983:49), peaking around 6000 years ago. This is perhaps what led people into the forested regions in the beginning. There they could find more reliable sources of food and water. The move into the forests more or less full-time, however, required that the Shield peoples shift to a more generalized economy than their predecessors had apparently lived by.[52] Rather than following herds of one specific type of game, these people probably moved from place to place in search of different resources in different seasons - an important strategy in the boreal forest. Based on site locations and on the limited faunal evidence, it appears that Shield peoples continued to emphasize large game, especially caribou, but also hunted a variety of smaller game (including beaver, porcupine and hare), hunted waterfowl and fished. They also most likely collected plants for food (Kroker, 1990:152, Manitoba Heritage Network, 1998; Pettipas (ed), 1983: Wright, 1995:261,262,279).

They evidently made extensive use of waterways for travel, much like those people who came after them. It is likely that canoes, snowshoes and toboggans were used by Shield peoples for this travel, as these items are very nearly vital for long-term survival in the boreal forest (Manitoba Heritage Network, 1998; Pettipas (ed.), 1983:78; 1989:28; Wright, 1995:261,265). Shelters constructed by Shield peoples varied in form, probably with season and function. Evidence of large, semi-subterranean dwellings has been attributed to the Shield peoples (Wright, 1995:262). Hide- or bark-covered conical and domed lodges had been the main type of habitation used, summer and winter, by subarctic peoples at contact (Helm and Leacock, 1971:346; Orecklin, 1976:69,70), and similar types of lodges were probably being used also by the Shield Archaic peoples, although these are difficult to detect in the archaeological record (Wright, 1995:262,265).[53]

By this time, if not earlier, people were also burying their dead with some ceremony. Special items were being left in the grave with the person, or cached nearby (Manitoba Heritage Network, 1998; Wright, 1995:262,286,287). The Victoria Day site (GkLr-61) on Three-Point Lake in north-central Manitoba is one example of a burial dating to this period and, dated to roughly 2300 B.C. (c. 4300 years of age), the oldest known in this region (Historic Resources Branch, n.d. [1998]:4,5; Manitoba Heritage Network, 1998; Syms, 1998). Included in the associated grave caches were many harpoons and other tools of bone and antler, and a medicine ball (a power object) (Manitoba Heritage Network, 1998; Syms, 1998). Although they cannot be firmly dated, it has been suggested that the earliest rock paintings on the Canadian Shield could have been created during this period as well (Manitoba Heritage Network, 1998; Steinbring, 1998:50,127).

It was the various Shield peoples who were the full-time residents of the boreal forest of north-central Manitoba during the period between roughly 4500 and 2000 years ago. The cultures of peoples outside of the forested regions were also undergoing change and diversification at this time, and several of these cultures may have had some effect on the Shield peoples. Although evidence of presence of peoples from the plains and the arctic

regions in north-central Manitoba is slight, it seems likely that these people were at least sometimes visiting parts of the Shield. Projectile points very much like those of the Plains cultures called Oxbow, Besant, Pelican Lake and Duncan/Hanna/McKean have been found at sites in north-central Manitoba (Kroker, 1990:150-153; Larcombe, 1997b:22,53,68,77,91; Wright, 1995:291,306,307,329). Although more common farther north and along the Hudson Bay coast, the early Arctic cultures - represented by what has been called the 'Pre-Dorset' or 'Arctic Small Tool tradition' - have also been detected in northern Manitoba (Manitoba Heritage Network, 1998; Wright, 1995:409). Overall, however, there appears to have been relatively little cultural exchange between the Shield and the Plains peoples and next to none between the Shield and the Arctic peoples during this period (Wright, 1981:89; 1995:411,444). Still, through even occasional contact, the different groups could have introduced new ideas to each other, traded materials and otherwise impacted the development of each other's cultures.[54]

In time, the populations of the Shield grew, and their cultures evolved as they continued to adapt to life in the boreal forest, which was once again shifting southwards in response to a cooling climate. Most visibly, pottery was introduced for cooking and storage of foods, as was the bow and arrow for hunting. Throughout the boreal forest regions, these technological innovations mark the transition to what has been named the Woodland Period (Manitoba Heritage Network, 1998; Pettipas (ed), 1989:61; Wright, 1981:89). The people who first left behind traces of these technologies in north-central Manitoba lived in or visited this region about 2000 years ago and produced items belonging to a Middle Woodland culture composite which archaeologists call Laurel (François et al., 1995:10; Pettipas (ed.), 1989:62).

These people, like their predecessors, appear to have been at least seasonally mobile. In the boreal forest, they probably spent their summers in large, relatively sedentary groups, focussing on fishing for food. Toggling harpoon heads have been found on Laurel sites, likely used for spearing fish (Brandzin-Low, 1997:30; Manitoba Heritage Network, 1998;

Wright, 1981:90). Additionally, stone net-sinkers have been identified on some sites of the closely-related 'Saugeen' and 'North Bay' Middle Woodland culture complexes (Brandzin-Low, 1997:34; Wright, 1981:90), and this would suggest an increasing emphasis on fish on parts of the Shield at this time. The people would likely have broken up into smaller groups for the winters, dispersing over the landscape in order to harvest more dispersed, variable game (Manitoba Heritage Network, 1998). The Laurel sites so far recorded in north-central Manitoba - less common than those in the south, but still far from rare[55] - are generally small, scattered, and represent short-term use (Brandzin-Low, 1997:215). It has been suggested that Laurel peoples were only using the northern parts of the boreal forest for seasonal excursions (Brandzin-Low, 1997:1,2,224).

As the climate warmed about 1500 years ago, some people from the aspen parkland began to follow the forest edge north and made incursions into north-central Manitoba. People of the 'Blackduck' culture composite, as they have been called, ranged over a large territory, including the southern half of Manitoba. By about 1300 years ago, these southern Woodland peoples were apparently visiting parts of the Nelson River drainage and occasionally even Southern Indian Lake, although traces of these people are rare there (François et al., 1995:10; Lenius and Olinyk, 1990:79; Pettipas (ed.), 1989:62-63). Through even occasional contact, the Blackduck peoples could have influenced the local Laurel culture in the north by introducing innovations and practices from their own.[56]

Peoples of the Blackduck composite, like Laurel, are recognized in Manitoba primarily on the basis of their distinctive pottery styles. While Blackduck people residing in the north seem to have merged culturally with the original occupants, the two archaeological culture composites continued to co-exist side by side in the region until about 1000 years ago by which time new complexes had emerged, having developed locally from the earlier traditions in that part of the Shield as early as 1200 years ago.[57] This has been taken to mark the beginnings of the first locally developed culture complexes in north-central Manitoba, those of the ancestors of the Woodland Cree, called 'Clearwater Lake'

and 'Kame Hills' after the locales in which their pottery were first found (François et al., 1995:10,36; Meyer and Russell, 1987:22,24; Pettipas, 1989:63).

The people who made Clearwater Lake Punctate pottery were widespread throughout the boreal forests of Manitoba, Saskatchewan and northern Ontario, and were most concentrated along the Saskatchewan and Nelson River systems. Kame Hills pottery is closely related to Clearwater Lake Punctate. It is, however, part of a distinct archaeological culture complex, particularly regarding the presence of vessel forms like ceramic cups, bowls, pipe bowls and plates/lamps not represented in Clearwater Lake assemblages. Kame Hills pottery is found predominantly in the Churchill River basin around Southern Indian Lake (Historic Resources Branch, 1989; Pettipas (ed.), 1983:161-171), and also in the Rat-Burntwood rivers system (E. L. Syms, 1998: personal communication; Wood, 1983:65). It has been found in smaller amounts as far north as the north end of Big Sand Lake on the South Seal River (Riddle, 1985:36). Its makers were probably members of a relatively self-contained regional band or similar group that was centered in the Southern Indian Lake region (Meyer and Russell, 1987:22; Wood, 1983:7; Wood and Wasnick, 1976:8).

These peoples continued to live off the resources of the boreal forest and must have been well-adapted to this life as rather little that was basic to their material culture assemblage seems to have changed until new economic forces were introduced with the European fur trade (Wood, 1983:30). Archaeological evidence suggests that they were seasonally mobile. They probably spent much of the year dispersed in small groups spread out along water routes on which they focussed most of their hunting and gathering activities, and came together annually into larger communities for social, spiritual and co-operative subsistence activities (Hlady, 1971:16,64). Fishing appears to have been particularly important to the diet of Clearwater Lake and Kame Hills peoples, especially in the Southern Indian Lake region. This was followed by the hunting and trapping of a diversity of forest

game and the collecting of available plant foods (Hlady, 1971:22; Mallory, 1975:2; Sherriff et al., 1995:105,106). Stone tools were made mostly from locally available quartzes, quartzites, cherts and basalts (Hlady, 1971:23). Birch bark was an important material for the construction of various items (Hlady, 1970:114) ranging from canoe coverings and lodge coverings to baskets and drinking vessels (Williams, 1969:129). The presence of dog bone in Clearwater Lake-aged assemblages at the Grand Rapids site indicates that domestic dogs were being kept by at least some groups by this time for hunting and as pack animals. They may have also been used for pulling the toboggans (Orecklin, 1976:18), although dog-pulled toboggans do not appear to have been used by Cree when they were encountered by early European explorers and traders (Honigmann, 1981:221).

Kame Hills sites on Southern Indian Lake date to as early as A.D. 760, and the associated pottery continued to be used there until the introduction of copper kettles early in the fur trade, at which time Cree were resident in the area (François et al., 1995:36). Similar continuity exists between Cree occupations and Clearwater Lake, Kame Hills and related wares (which, as a group, have been labelled the 'Selkirk' composite) in other parts of the boreal forest.[58] The distribution of Selkirk pottery corresponds roughly with the territories occupied by the Cree at contact (MacNeish, 1958:47-49; Meyer, 1987:187,192,194; Meyer and Russell, 1987:25,26; Wright, 1971:21). On some sites, specifically recorded to have been occupied by Cree people during the earliest years of the western Fur Trade, Late Woodland aged pottery and the other artifacts often associated with these complexes have been found together with early fur trade goods (MacNeish, 1958:47-49; Meyer and Russell, 1987:25; Wright, 1971:3,4; 1981:92). Together, these lines of evidence point to the Late Woodland Cree as makers of the Selkirk pottery (François et al., 1995:10; Hlady, 1970:121; 1971:64; MacNeish, 1958:47-49; Meyer, 1987:196; Meyer and Russell, 1987:25,26; Wright, 1971:23; 1981:92).

Based on this continuity of occupation, it is apparent that this region was homeland of Cree people for at least the past 1200 years (François et al., 1995:36; Hlady, 1971:114;

Meyer and Russell, 1987:25; Wright, 1981:92) and probably of their ancestors for another 3000 years earlier. The Selkirk composite, including the Clearwater Lake and Kame Hills complexes, seems to have its roots in Laurel and Blackduck composites. Laurel in Manitoba appears to have developed in turn out of the local Shield Archaic with influences from neighbouring woodland regions (Wright, 1995:261). As already noted, according to their own oral histories, Cree have lived in the northern forests of Manitoba since ancient times: "time immemorial" (François et al., 1995:2; Linklater, 1994:34).

Regardless of their self-sufficiency, the Cree of north-central Manitoba were not isolated. People and/or materials travelled from region to region throughout and sometimes beyond the Shield along traditionally established trade networks.[59] For example, Cree in the Southern Indian Lake region and their predecessors seem to have traded for such materials as basalts from the Hudson Bay Lowlands, Gronlid Chert from the area around The Pas, Swan River Chert from southwestern Manitoba, Catlinite or pipestone from southwestern Minnesota, and a high quality chalcedony called Knife River Flint from western North Dakota. While they were not needed, these rocks were superior to the local quartzites for tool-making and so were desired (Brownlee and Syms, 1999:8,39; Historic Resources Branch, n.d. [1998]:4; Mallory, 1975:6,7). Similarly, Native copper implements were sometimes traded into north-central Manitoba. Many of these copper items came from the Lake Superior region (Brownlee and Syms, 1999:6; Riddle, 1994b:25), although it is possible that copper could have been traded down from the Coppermine River region in north-western North America as well (Lister, 1999). Other exotic materials and items like shell beads from east coast of the United States have also been found on sites in north-central Manitoba (Historic Resources Branch, n.d. [1998]:4).

Contact between the peoples of the Shield and the arctic cultures is thought to have been rare (Wright, 1995:411,444). By the time people began to make Kame Hills pottery in the Southern Indian Lake region about 1200 years ago, however, they had likely had at least some contact with the arctic peoples. For example, the flat ceramic vessels characteristic of

Kame Hills pottery assemblages appear quite similar in form to the oil- or fat-burning stone lamps made by Inuit peoples. It has been suggested that the Kame Hills 'plates' may have been modelled after these lamps and used in the same way (François et al., 1995:36; Wood and Wasnick, 1976:5-7). [60]

North of the full boreal forest, the Dené and their predecessors - labelled the Taltheilei composites by archaeologists - have seasonally occupied the transitional forest of northern Manitoba since at least A.D. 200 (Manitoba Heritage Network, 1998), and possibly were at least visiting the region for up to 700 years or more earlier (Larcombe, 1997b:87). The barren-ground caribou were central to their whole lifeway, and Dené people travelled each year between the southern barrens where they summered and the northwestern transitional forest where winter was spent in order to hunt the migratory caribou year-round. While normally the caribou remained north of the full boreal forest, in some winters an increase in population size, particular weather conditions or some other environmental factor would cause the herds to range farther south, into the homeland of the Cree. In these years, Dené could also be found in the full boreal forest (Manitoba Heritage Network, 1998; Nash, 1970:78; Smith, 1981c:136).

Most known Taltheilei sites have been found along or north of the Seal River, but a few have been found considerably farther south. For instance, Taltheilei peoples visited sites along the northern and western shorelines of Southern Indian Lake (Kroker, 1990:154; Wood, 1975:9), the Leaf Rapids locale of the middle Churchill River (Smith, 1995:171), Wapisu Lake (Riddle, 1994b:25), Wuskwatim Lake and others (Larcombe, 1997b). These sites might represent those winters that the caribou ranged farther into the boreal forest, or they might date to periods during which the climate was cooler and the treeline (and also the northern transitional forest) was pushed farther south, encouraging the Taltheilei people to expand southwards as well (Gordon, 1981:4; Pettipas (ed.), 1989:49). Taltheilei projectile points found at the north end of Southern Indian Lake are similar to styles elsewhere

ranging in estimated age from A.D. 300 to contact (Kroker, 1990:154). One type in particular is very similar to a style previously dated to 650-500 B.C. (Larcombe, 1997b:87). It would appear then that the ancestors of the Dené peoples have been using this area periodically, at least, throughout the Late Woodland Period and possibly earlier.

Like most subarctic hunter-gatherer peoples, Taltheilei people were at least seasonally mobile and likely gathered together into larger groups at various times throughout the year. Based on the location of most Taltheilei sites - the major sites occurring primarily on eskers at water crossings and at good fishing places - it appears that they lived in much the same way as their Dené descendants. While the mainstay of their economy appears to have been the barren-ground caribou, fishing could also be an important activity, and other game no doubt supplemented their diet (Historic Resources Branch, 1989; Manitoba Heritage Network, 1998; Petch, 1997b:73,74,78; Pettipas (ed.), 1983:84, 191-197; Wright, 1995:398).

Gill nets are referred to in Dené oral histories (Pettipas, 1994:49), and as fishing could be important to their Taltheilei ancestors, it is expected that these were used far back into their history (Rostlund, 1952:98). Net sinkers have in fact been found elsewhere on Taltheilei sites (Wright, 1995:394). Snowshoes and toboggans would have been just as important for life in the transitional zone in the past as in recent times, and canoes or other watercraft would have been needed for crossing rivers (Wright, 1995:398). However, Dené did not travel extensively by canoe in the early fur trade years (Hearne, 1971 [1795]:91,97), and presumably not before contact either (Manitoba Heritage Network, 1998). It has been pointed out that the river systems of the transitional forest and southern barrens are winding and not very continuous, so that there was little encouragement for the development of canoe travel in these regions (Gillespie, 1976:8-9; Smith, 1982:12). Dogs seem to have been kept by some Dené, but only rarely and mostly for hunting or sometimes as pack animals (Rogers and Smith, 1981:133; Smith, 1982:12), but were not normally used for pulling toboggans until the later fur trade (Sharp, 1977:38; Smith, 1982:12). Hide- or bark-covered

lodges were again probably the type of dwelling most often used (Manitoba Heritage Network, 1998). Bow and arrow technology had been adopted by the time Taltheilei first came to the Southern Indian Lake region, but spears continued to be important for hunting caribou at water crossings, even after the fur trade (Noble, 1981:103). In fact, there is little archaeological evidence of any major material changes to the lifeways of the Taltheilei in the years that they were present in northern Manitoba - evidence again of successful adaptation (Pettipas (ed.), 1989:49).

Taltheilei people do not seem to have made pottery (Manitoba Heritage Network, 1998), and many of their tools were made of bone and antler, which do not preserve well in the boreal forest. As a result, the most diagnostic artifacts which they left behind in this region were their stone projectile points (Le Blanc, 1997) which are rather rarely abandoned. As a result, their presence south of the present treeline may have been underestimated.[61]

The Cree people found living in the Southern Indian Lake region at the beginnings of the European fur trade had a long history of local, relatively continuous cultural development. The same can be said of the Dené, their neighbours to the north. The resulting societies and economies which these peoples had developed over time were well-suited to life in the northern forests.

5. THE PEOPLE OF THE NORTHERN BOREAL FOREST.

5.1 Social Organization and Spatial Relations.

Helm and Leacock (1971:347) have described the basic social and spatial organization of most Aboriginal populations in the Canadian subarctic as follows:

> Large areas were inhabited by small autonomous regional groups that commonly numbered a few score members each. They were usually loosely related to surrounding groups through intermarriage, economic dependence in terms of local scarcities, linguistic affinity, and some feeling of ethnic identity.
>
> A large kill from a herd of caribou or an extensive fish run enabled the regional group of one hundred or more to stay together for a period; but when game was scarce or scattered, the people separated into smaller groups of perhaps only three or four nuclear families and spread out to cover a larger area. Such groups were in touch with each other and ready to help one another in case of trouble. The shifting of 'membership' between groups was apparently easy and common, and people felt free to hunt outside their usual areas in times of shortage.

Subarctic populations would gather and disperse with seasonal conditions. During the seasons of dispersal, the more widely scattered groups could range in size from one to several extended families, and in the central subarctic seem to have included from less than ten to more than fifty individuals (Leacock, 1986:151; Rogers, 1966:30,31). When the resource base allowed, the regional band could come together, numbering from 100 to 300 or more in the forests (Leacock, 1986:151; Meyer and Thistle, 1995:433, 435; Rogers, 1963a:76; 1966:31), and even more among hunters of the barren-ground caribou (Hearne, 1971 [1795]:279,280; Smith, 1981b:276). The spacing between the sites of these gatherings seem to have been quite regular, perhaps reflecting the size of regional band territories (Meyer and Thistle, 1995:427). Meyer and Thistle (1995:427) have noted that in the days before the fur trade, major gathering sites along the game-rich Saskatchewan River valley were spaced roughly 80 to 100 km apart, only occasionally more distant.

Subarctic peoples also tended to follow what has been called a 'restricted wandering community pattern'; families or larger groups would travel from location to location within

a given known territory, usually following some regular seasonal round of activities. Their movement depended on the location of resources and conditions required for these activities (VanStone, 1974:38).

These general patterns were characteristic of both local Cree and Dené people in northern Manitoba at contact (Smith, 1981a:259,260; 1981b:275,276). This was a form of social and spatial organization that was flexible and allowed people to get what they needed for life throughout the year in spite of the spatial and seasonal variations of resource availability in the boreal forest.

Families tended to use the same range of territory each year, familiarity with an area being important for successful hunting and resource gathering, but these territories were not 'owned' as Registered Trap Lines are today. Both Cree and Dené were free to move on to other locations, at least within the overall range of the regional band, when local shortages made this necessary (Brightman, 1989:4; Smith, 1981a:259; VanStone, 1974:40).

5.2 **Cree-Dené Relations.**

In contrast to the relative freedom of movement experienced by Cree and Dené people when travelling within their own Nation's territories, they could count less on non-hostile reception when entering land occupied by the other Nation. While neutral or even friendly relations no doubt existed between at least some individuals and some bands, Cree-Dené relations during the fur trade were marked largely by distrust, dislike and periodic raiding, and this pattern was set long ago in their past. In Dené oral histories, Cree are portrayed as the enemy (Jarvenpa, 1982:284), and even their word for Cree people, *ena*, means 'enemy' (Smith, 1981b:271).

All the same, there seems to have been little reason for Cree and Dené people to come into regular contact with each other throughout most of their history. The Cree were at home in the full boreal forest, while Dené rarely came much south of the northern parts of the northwestern transitional forest. The southern portions of the northwestern transitional

forest has been said to be poorer in resources than either the transitional forest closer to the treeline or the full boreal forest and was apparently not used heavily by either group (Gillespie, 1975:362; Yerbury, 1986:130). It has been suggested that only in those winters when the barren-ground caribou came farthest south would the Dené have had reason to enter territory regularly occupied by Cree (Smith, 1981c:136).

Dené had traditionally avoided Cree when in the boreal forest and rarely camped where they could be easily seen (Brumbach and Jarvenpa, 1989:33; Jarvenpa, 1982:285; Smith, 1981c:140). The Cree had perhaps even less reason to travel north into Dené lands. When they did, however, they do not seem to have applied the same level of caution (Jarvenpa, 1982:285). Instead, Dené were on their own guard against Cree raids. They remained alert, maintained a network of surveillance sites and avoided areas where Cree and other enemies were present in larger numbers (Blondin, 1990:84; Bussidor and Bilgen-Reinart, 1997:18; Jarvenpa, 1982:285; Smith, 1981c:140).

5.3 **Economies.**

The subarctic forests have long been considered by outsiders to be poor in food resources, to be hard environments in which to try to make a living year-round (e.g. Ray, 1974:45). But people have successfully done just that for centuries.[62] One key to survival in these regions of seasonally and spatially variable plant and animal life was flexibility in diet and in settlement. When target game species were concentrated, human populations could come together. When the food source was dispersed, the people dispersed. When a species left an area or was hunted out, people could either travel to a new area or concentrate on other species. As a result, there was no one single boreal forest economy at any time in history. The diet of most northern hunter-gatherers was largely a product of what edible species were available in an area at the time, although cultural and personal preference played a part as well.

Cree people living in the boreal forests sought a wide variety of animal and vegetable

foods over the course of the year, emphasis shifting with the seasons and changing as the forest community evolved. Of all these, the moose was the animal most valued by the Rock Cree for meat and for non-food resources; for example, bone, antler, hide and sinew. Other important large game included the woodland caribou which were available year-round and the barren-ground caribou when their southerly migration brought them into range (Brightman, 1993:8,9; Gillespie, 1981a:15; Glover, 1962:83,84; Orecklin, 1976:75; Smith, 1981a:257). Black bear was ritually important to many Cree, had heavy pelts that made warm winter bedding, and good, rich meat. They were still only occasionally taken owing to the danger of hunting bear and to the relative scarcity of these animals (Gillespie, 1981a:15; Rogers and Smith, 1981:132; Smith, 1981a:257).

Cree hunters considered hunting these large animals to be a more efficient subsistence strategy than small game hunting or trapping, offering more meat and materials per kill (Brightman, 1993:10), and so they were often sought even when other food could be found more quickly (e.g. Hanks, 1982:112). There was rarely enough moose or caribou, however, for the population to live off alone. Other foods had to supplement the diet of Cree people.

Among the more important small game were beaver, which were valued for both their meat and their pelts long before the fur trade (Helm et al., 1981:150; Pettipas, 1980:198,199; Rogers and Smith, 1981:133; Williams, 1969:9). Also prominent were hare, muskrat, lynx, porcupine, and the game birds - grouse and ptarmigan. Geese, ducks and swan could be important during their spring and fall migrations[63] (Gillespie, 1981a:16,17; Glover, 1962:64). Otter were eaten when they could be caught, and their pelts were used among some peoples for medicine bundles and for water-retarding clothing (W. Pruitt, 1998: personal communication). Marten, fisher and wolverine are some other furbearers whose meat has been eaten (Brightman, 1993:8,9,248; Drage, 1982:19-23; Gillespie, 1981a:16,17; Hrenchuk, 1991:89; Smith, 1981a:257; Williams, 1969:9-22) but which probably became more important to Cree economy with the fur trade; the meat of these

animals tends to be unappealing. Eggs of gulls and other shorebirds had also been collected to supplement the diet, when available (Ballantyne, 1971 [1879]:239; HBCA, B.91/a/2:16d; Rogers, 1963a:71).[64]

The importance of fish in Cree diet has often been underestimated in descriptions of Cree economy, probably because Cree men preferred to be seen as hunters (Brightman, 1993:9). Fishing was vital, however, to year-round living in the boreal forest, particularly in those seasons or years that large game was unavailable (Gillespie, 1981a:15,16; Helm and Leacock, 1971:345; Rogers and Smith, 1981:133; Steegman, 1983:255). In the Southern Indian Lake region - an area with better fish resources than moose or caribou - fish appear to have dominated the diet which has been indicated by the archaeological record (Hanna, 1975:36,38; Mallory, 1975:2; Sherriff et al., 1995:105; Wood, 1983:27; Wright, 1971:22).

The fish most valued by Cree were the whitefish and sturgeon, these having rich flesh.[65] Lake trout was caught when it was available, and the suckers were also eaten. Pickerel, perch, jackfish and burbot are lean fish and so were less desirable for food, but were still taken - the burbot mainly for its liver (Franklin, 1910:86; Gillespie, 1981a:17; Glover, 1962:60; Orecklin, 1976:16,17; Rostlund, 1952:28-30, 34,38,39; Winterhalder, 1978:363). They could always be fed to the dogs, which subsisted largely on fish, when better fare was available for human consumption (Boulanger, 1971:46; Rogers, 1963b:36).

Surplus meat and fish were often preserved by Cree women and these dried or frozen provisions could become important in leaner seasons (Brightman, 1993:10; Honigmann, 1955:44; Rogers and Black, 1976:13). These foods could be either cached away in strategic locations or carried with them when they travelled (Rogers and Smith, 1981:135; Steegman, 1983:252). Unfortunately, even dried meat can be heavy and bulky to carry in large quantities (Brightman, 1993:358-360) and caches could not be depended on by mobile peoples; even dried meat can go bad in little more than a month during the warmer seasons so that only meat taken and dried around or after the freeze would keep for a longer period (Smith, 1982:17). Caching meat by burying it in the cool ground or storing

it in caverns in bedrock cliffs could extend its shelf life some (e.g. Petch, 1993a:3; 1993b:90). However, even when the meat kept well, these caches were often raided by animals or used by other families in need before the site was revisited by the people who had left the food (Brightman, 1993:358-360).[66]

A number of foods were eaten only when there was little else to count on. These 'starvation foods' included the meat of wolf, fox, weasel, mink, squirrel[67] and even the dogs, the stomach contents and entrails of large herbivores, leather items, and carrion (Honigmann, 1955:41; Mason, 1967:12; Steegman, 1983:254; Williams, 1969:20). Although in most years a family could get what food they needed from the land around them, many of the game species underwent regular population fluctuations. Strange weather conditions could also make getting game more difficult in certain years. Once every decade or so a family could expect to face a particularly hard winter as a result (Ward, 1995:75), and if conditions existed which made it too difficult for them to move on to a more productive area, such as intense winter cold, sickness, or hostile neighbours, then starvation could threaten (Black-Rogers, 1986:357; Smith, 1982:67).

Animal protein is commonly emphasized in descriptions of subarctic diets, but the importance of plants in the Cree economy should not be underestimated. They were important enough to affect peoples' choice of camp locations and seasonal movements (Black, 1973:70). In the diet, edible plants added variety and were a vital source of nutrients not available in meat. Plant parts such as sap, berries, seeds and starchy roots could also have considerable caloric value, and so were not only a significant supplementary food, but could be the staple of the diet when game and fish were scarce or seasonally unpalatable. For these reasons, plant foods were likely also often preserved for use in seasons during which they were not available fresh (Black, 1973:60; Pettipas, 1979:41; Shay, 1980:261, 265,266,269).

Shay (1980:246) counted 89 plants in the boreal forest which have been used for food or nutritious teas, the parts used ranging from berries, seeds and flowers to greens,

roots, sap and cambium (see Appendix 2). Sixty of these plants have been found around Southern Indian Lake (Wood, 1983:25), many of which people still harvest today. Among those most commonly harvested in recent times are the cranberries, gooseberries and currants, blueberries, pin cherries, raspberries, rosehips, the rootstocks of bulrushes and cat tails, sap from poplar and birch (especially farther north where maple trees were not common), fiddleheads (young fern greens), water and cow parsnips, Labrador tea, mints, and balsam fir buds and twigs for teas. In times of real food shortage, old berries could be taken off their bushes, rock tripe (an edible lichen) could be used to thicken soups and stews, and the inner bark (cambium) of trees including balsam fir, spruce, pine, birch and poplar could be eaten (Ahenakew and Wolfart, 1992:151-155; Black, 1973:59,75,77,78; Franklin, 1910:81.82; Glover, 1962:59,60; Hrenchuk, 1991:94; Leighton, 1986:27,32,45,52,60; Shay, 1980:259; Wood, 1983:25).

Many plants in the boreal forest had medicinal value and were harvested and preserved by Cree for these uses (Black, 1973; Zieba, 1990). Plants to be used as medicine were most commonly collected in the fall, after they had matured, although flowers and roots might be taken in late spring or summer (Pettipas, 1980:259; Zieba, 1990:64).

Plant materials were collected for many other uses as well. Firewood collection and cutting was a time-consuming but very important task for survival. Dry wood from poplar, aspen, birch, spruce and pine have all been used successfully for fuel in the north (Franklin, 1910:81; Glover, 1962:59; Hrenchuk, 1991:93; Tanner, 1979:60). Fresh evergreen boughs were collected from around the camps weekly to cover and insulate tent floors. Spruce and fir boughs were preferred for this use (Drage, 1982:12; Rich, 1949:102; Rogers and Rogers, 1959:136; Tanner, 1979:38). Sphagnum mosses were excellent for anything requiring a soft, absorbent, sterile dressing. They were commonly used for diapering babies, women's menstrual pads, and for covering wounds, and a constant supply was required. This supply of moss could be taken by the women from the edges of muskeg areas, dried and cached for later use (Ahenakew and Wolfart, 1992:151,223; Flannery,

1995:31; Franklin, 1910:76,77; Smith, 1981a:260; Van Kirk, 1980:20). Willow bark made a strong cordage and this was used for making fish nets, rope, snares, tool bindings, and other such items (Evans, 1969:7; Linklater, 1994:90; Rostlund, 1952:100). Spruce root was similarly used at times (e.g. Martijn and Rogers, 1969:96), and was also important for sewing birch bark canoes and other items (Black, 1973:80; Rogers and Smith, 1981:138; Taylor, 1980:9). Other strong plant fibres were probably also used for making textiles and basketry. Birch bark was important for making canoe coverings, lodge coverings, drinking vessels and baskets. Birch was commonly selected by Cree for making items that needed a strong but flexible wood like bows, snowshoe frames, canoe frames, toboggans and sleds (Ahenakew and Wolfart, 1992:157; Glover, 1962:58; Pettipas, 1980:179; Williams, 1969:129). Tent poles, cache racks and hide stretching frames were often cut from straight young spruce trees (Glover, 1962:59; Tanner, 1979:38). A variety of woods might also have been used for diverse items like tool handles, carved bowls and platters, snow shovels and clubs.

Still, in descriptions of Cree economy the greatest emphasis is regularly on large game hunting. With the exception of beaver, supplementary game sources are said to have been taken opportunistically more often than they were deliberately sought out (Rogers and Black, 1976:11), but this would certainly change in seasons or years when large game hunting was less successful. At such times 'secondary' resources like plant foods, small game, fowl and fish greatly increased in importance (Rogers and Black, 1976:10; Rogers and Smith, 1981:135; Steegman, 1983:255).

Choices about what types of food to harvest at a given time of year were affected by a number of considerations such as "the non-food yields (i.e. bones used for tools), ease of exploitation, weight of the food, density of distribution, degree of aggregation of the species, mobility of the resource, and fat content" (Snortland-Coles, 1979:92). These factors were mostly behavioral and physiological and they varied seasonally (see Appendices 3 and 4).

The diet of the people should have changed throughout the year as well.

Feit has suggested that the subsistence strategy of boreal forest 'generalists' like the Cree would change with the different forest successional stages dominating the region in which they lived (see table 4.1). For example, in the early years after an extensive burn, hare would be the only game animal available to be taken regularly in a region. With the growth of shrubby forest cover and the return of small mammals, beaver would probably be a primary food source. Only with the deciduous forest stage would moose be common enough to be primary, with bear, beaver and other small game secondary. With the development of a climax spruce forest, caribou would take on more importance, while moose and beaver would still be taken when encountered (Feit, 1969:124). Feit's hypothesis largely ignores the roles of plants, fowl and fish in subsistence strategies, as well as the travel of hunters to more distant locations for desirable or prestigious game, but it does illustrate how diet can change as the forest community changes as a result of forest succession or with loss of targeted game due to other forces.

The Edthen-eldeli Dené traditionally had a rather more specialized economy than did the Cree, focussed primarily on the caribou hunt.[68] Their settlement and subsistence systems were both intimately linked to the migratory patterns of the barren-ground caribou herds with which the bands associated (Brandson, 1981:3; Smith, 1982:13; Yerbury, 1986:139). These migrations sometimes brought the caribou and their hunters into the boreal forest of north-central Manitoba.

The caribou was the most important animal to the Dené (Nash, 1975:3; Sharp, 1977:35; 1981:223; Smith, 1981b:272; VanStone, 1974:24; Yerbury, 1986:129), offering its meat, hide, stomach (used for holding water and for cooking), sinew, bone and antler (Gordon, 1975:71). It was prominent in their oral history - the game promised by Mother Nonucho to her children for so long as they lived in the "land of the little sticks" (Downes, 1943:127; Smith, 1981b:272). The other promised game, available to them only when they

were out on the barrens in the summers, was the muskox (Downes, 1943:127; Sharp, 1981:223; Smith, 1981b:272). Black Bear were occasionally taken by some Dené hunters during the winters while the people were in the forests, but remained secondary to caribou (Birket-Smith, 1930:24; VanStone, 1974:24).

Eastern Dené did not often bother with hunting moose or woodland caribou, even in those sporadic winters that they spent farther south in the boreal forest. They were there to hunt the barren-ground caribou, were familiar with its habits, and had little need to track the more solitary deer which were generally considered inferior game (Hearne, 1971 [1795]:225,260; Smith, 1981c:136; VanStone, 1974:24). It is likely that in the winters Dené took the odd moose opportunistically, or strategically when caribou were scarce (Sharp, 1981:223; Smith, 1982:17; Yerbury, 1986:129), but it was never a very important source of food to them.

Far less glorified, fishing was the second-most important source of food for the Dené. Fish-bearing lakes and streams could be found both in the southern barrens and in the transitional forest, so that Dené could fall back on fishing at any time of year that caribou hunting was less successful, or while waiting for caribou (Glover, 1962:106; Hanks and Winter, 1991:51; Nash, 1975:3; Rostlund, 1952:98; Smith, 1981b:272; Yerbury, 1986:132). Most fishing was done by Dené in the open water seasons. Fish were also taken in the winter, but normally only as an emergency food and to feed any dogs they might have, due to the greater difficulty of fishing under ice. Surplus fish caught during the spring and fall runs could be preserved for later use, although preservation of surplus caribou meat was probably even more important when many had been taken during the fall hunts (Blondin, 1990:156; Hearne, 1971 [1795]:15,16; Irimoto, 1981a:41,91,122; Jarvenpa, 1976:64; Rostlund, 1952:98; Sharp, 1981:232,233; Smith, 1981b:271,272).

Of all the fish, the whitefish were most preferred. Other species that were regularly caught included lake trout, sucker, burbot, jackfish and pickerel, plus grayling and char when farther out on the barrens (Birket-Smith, 1930:18; Brandson, 1981:3; Glover,

1962:128; Jarvenpa, 1976:47,64; Smith, 1982:18; VanStone, 1974:25).

Other game was sometimes taken to supplement the diet, especially when caribou were scarce, or when movement became limited by the thaw. Hare, porcupine, ptarmigan and spruce grouse were the most important small game where they were available, while wolverine, marten and other, smaller mammals were sometimes taken as well if necessary, but not commonly (Birket-Smith, 1930:26; Glover, 1962:128; Irimoto, 1981a:122; Sharp, 1977:35; 1981:223; Smith, 1976:2; 1981b:272; VanStone, 1974:24,25; Yerbury, 1986:139).[69]

The only major furbearers of the tundra and transitional forest were a few marten, otter, wolverine, the arctic fox and the wolf (Hearne, 1971 [1795]:209; Smith, 1981b:272). Of these, the latter three were not normally eaten except in starvation (Hearne, 1971 [1795]:250; Smith, 1982:5), and it is unlikely that Dené did much trapping of these animals prior to the fur trade (e.g. Helm and Thomas, 1966:20). The wolf, in particular, was said to be rarely taken by Dené, who identified with this animal (Smith, 1982:5).

Many geese spend their summers both along the Hudson Bay coast and on tundra lakes. Although waterfowl would probably never have been the primary game there when caribou, muskox and fish were available, Dené would have had ample opportunity to hunt them in this season while out on the barrens (Yerbury, 1986:139).[70] The waterfowl migrations through their territory in the spring and fall could also be an important source of food in some years (Brandson, 1981:3), i.e. when the caribou were not abundant. Eggs were probably collected and enjoyed by Dené during the summers (Birket-Smith, 1930:29; Hearne, 1971 [1795]:431,435; Irimoto, 1981a:127).[71]

In contrast to the full boreal forest, fewer types of food plants are available in the northwestern transitional forest or on the southern barrens. Because of this, it has often been said that the Dené did not emphasize plant foods as much as the Cree did and that those most often collected were the berries: cranberries, blueberries, crowberries, cloudberries, gooseberries and others (Birket-Smith, 1930:19,29; Jarvenpa, 1976:47; Sharp,

1981:235; Smith, 1982:18; Smith, 1978:72; Tyrrell, 1934:398; VanStone, 1974:25). It is likely, however, that reconstructions of Dené diets have underestimated the role of plant foods and beverages, just as they were underestimated for the Cree. As noted by Walker (1984:34), early observers most likely recorded little information about Dené plant use not because the Dené did not use these quite abundant resources, but because plant collection and use held little interest for the observers.

At least some greens were gathered for eating raw or cooked, as well as for smoking and for making teas which were made also from the bark, twigs and flowers of numerous different plants (Birket-Smith, 1930:29; Bussidor and Bilgen-Reinart, 1997:12; Smith, 1982:19; Walker, 1984:159,163). Certain roots were dug for food (Blondin, 1990:170; Walker, 1984:54,57,74,84,92, 112, 118,133,137) and rock tripe and other edible lichens were sometimes used to thicken stews or to sustain people in hungry times (Smith, 1982:19; Walker, 1984:138). Plant materials were also important for other uses - many of which were the same as those discussed for the Cree (see for examples, Birket-Smith, 1930:29; Blondin, 1997:202,203; Brandson, 1981:10-28; Brumbach and Jarvenpa, 1997:425; Irimoto, 1981a:110; Ryan, 1994:48-60; Smith, 1981b:277; VanStone, 1974:77; Walker, 1984:149).

Some plants that were important to the Cree, however, did not commonly grow in the more northerly regions inhabited by Dené. Large birch were uncommon except in the most ideal locations, and so their versatile bark and wood could not be relied on extensively by Dené craftspeople.[72] The small canoes used by Dené before their more recent southward expansion farther into the boreal forest were sometimes covered in hides rather than with birch bark (Birket-Smith, 1930:43; Gillespie, 1976:9). The wood of tamarack could have been used in making toboggans, sleds, canoe frames and other such items when suitable birch were absent (Glover, 1962:59; Hearne, 1971 [1795]:323).

Although herbal medicines were known and regularly used by Dené (e.g. Blondin, 1990:88,171; Ryan, 1994:48-60; Walker, 1984:34), relatively few medicinal plants were found in the Dené territory, in comparison to farther south.[73] What plants were present,

however, they could find many uses for, and they also relied on shamans who could ask for help from the spirits for healing when the home remedies failed (Birket-Smith, 1930:76; Hearne, 1971 [1795]:218; Ryan, 1994:42).

5.4 **Subsistence Strategies.**

Decisions of where and how to hunt, trap and fish were made based on peoples' detailed knowledge of their environment and of the behavior of their prey - knowledge acquired through generations of experience. Productive sites for fishing, hunting and trapping were known and returned to regularly over the years. When new sites were sought out, this experience guided the peoples' decisions (Brightman, 1993:9,10; Feit, 1987:78; Waldram, 1983:193; Winterhalder, 1978:352). Hunters were also sometimes guided by dreams, and divination was used for the same purpose. Still, the interpretation of dreams and signs was again most successfully done by those hunters with the greatest experience (Brightman, 1993:97; Tanner, 1979:123,134).

Knowledge of their environment and of the behavior of their prey is also what allowed hunter-gatherers to practice 'resource management strategies', allowing them to more reliably plan their annual movements and activities. Knowing the habitat preferences of the animals and plants they harvested for food, people could sometimes take steps to create and maintain these habitats in known, convenient locations: for example, regularly burning selected patches of forest in order to maintain early successional vegetation and wildlife communities in these locations (Lewis, 1982:49-51), or cutting deciduous tree growth to attract hare to snaring locations (Chansler, 1968:141; Rogers and Black, 1976:10).

Among the technologies employed for hunting in the boreal forest, the bow and arrow was an important tool since its introduction to the region some 2000 years ago, especially for the Cree (Brightman, 1993:246; Honigmann, 1956:34; Martijn and Rogers, 1969:94; Rogers and Smith, 1981:132). The Dené had also adopted this technology

sometime around 1300 years ago (Manitoba Heritage Network, 1998). Both Dené and Cree also used spears, knives, and clubs for hunting large and small game (Birket-Smith, 1930:19; Brightman, 1993:246; Honigmann, 1956:34,36; Manitoba Heritage Network, 1998; Rogers and Smith, 1981:132,133). Some record has been made to Cree farther east using slings and bolas for taking game on land (Honigmann, 1956:34; Martijn and Rogers, 1969:95), and it is conceivable that people in this region may have done so as well.

When enough people could come together for communal hunts of the gregarious barren-ground caribou, converging lines of cut spruce trees, brush piles, or sometimes stone cairns could be constructed over ice or on open land along the caribou's anticipated migration path. Places where the topography channelled the migrating caribou naturally - like lake narrows - were especially favourable (Andrews and Zoe, 1997:168; Blondin, 1997:22; Legat, 1995:7).[74] The people would camp at a vantage place from which they could watch for the approach of the caribou. When the herd was close, as many family members as could be spared would ambush the caribou to herd them into the drive lanes which funnelled the panicked animals towards the waiting hunters.[75] The drive lanes could vary in size from several kilometers in length on the barrens in the northwest (Andrews and Zoe, 1997:168; Legat, 1995:5) to much smaller lanes in the forested regions (Legat, 1995:9). They typically led to strong brush corrals in which the caribou were snared in large nooses placed in hedges constructed inside the corral. They could then be killed at close range with spears or arrows (Andrews and Zoe, 1997:167,168; Birket-Smith, 1930:21; Brightman, 1993:8; Gordon, 1990a:289; Harper, 1955:51,52; Hearne, 1971 [1795]:78-80; Heffley, 1981:137; Legat, 1995:5-8; Mason, 1967:12; Sharp, 1977:39; Smith, 1982:14,15).

Although the construction of drive lanes and corrals took time and energy, they greatly increased the number of caribou that could be taken during migrations, and so could be important hunting technology at these times.[76] Although normally constructed on ice, the drive lanes occasionally crossed over land (Legat, 1995:8; Petch, 1997b:81) and these could be repaired and re-used from year to year until that route was abandoned by the herd

(Heffley, 1981:137; Sharp, 1977:39; Smith, 1982:15). While it was the Dené who were most famous for this method of hunting caribou (Birket-Smith, 1930:21; Hearne, 1971 [1795]:78-80, Legat, 1995:5-8; Smith, 1982:14,15), the Cree were also known to have used it when the conditions were right (e.g. Brightman, 1993:8; Honigmann, 1956:33,35; Martijn and Rogers, 1969:94; Mason, 1967:12).

Nets were used by Cree and Dené to catch small game - especially fowl, beaver and otter (Birket-Smith, 1930:25,26; Drage, 1982:20; Glover, 1962:31,32; Honigmann, 1956:34; Martijn and Rogers, 1969:94; Williams, 1969:109). For trapping, snares of twined willow bark or babiche were used by both peoples on game as diverse as hare, lynx and other small mammals, grouse, waterfowl and even bear (Ahenakew and Wolfart, 1992:95; Drage, 1982:21; Glover, 1962:29; Irimoto, 1981a:105; Leacock, 1986:148; Rogers, 1963b:41; 1973:39; Rogers and Smith, 1981:132; VanStone, 1974:25; Williams, 1969:105,106). Snares were also useful for hunting large game; caribou and moose could be entangled in strong babiche snares placed across their trails, giving hunters the opportunity to spear or shoot the animal if they were nearby. Dené hunters were particularly fond of using snares for hunting in this way (Blondin, 1997:20,21; Pruitt, 1967:116,117; VanStone, 1974:24), although some groups of Cree employed the same technique for hunting dispersed caribou (Rogers, 1973:32).

Deadfall traps and pit traps were also used by Cree and Dené to take many of the smaller mammals, including the furbearers. These snares and traps were all set in locations known to be frequented by the targeted game (Blondin, 1997:22; Brightman, 1993:9; Jarvenpa, 1980:113; Martijn and Rogers, 1969:93). Snares and pits could be productively placed across narrow parts of trails used by the animals. Deadfalls were best set up in and around various places with signs of frequent use by the targeted species, baited with fish, mink oil or some other smelly concoction that would attract the animal to investigate (Chansler, 1968:28). Snare and trap setting could sometimes take the people well back into the bush, depending on what animals they hoped to capture (Ballantyne, 1971 [1879]:83;

Boulanger, 1971:44; Rogers, 1963b:42).

Both Cree and Dené fished using hook and line, spears, and an assortment of nets, including both dip nets and gill nets, made from willow bark or babiche.[77] Dené are said to have sometimes used barbed arrows for fishing, and Cree to have used harpoons. Among both peoples, fish traps were often used with stone or pole weirs designed to concentrate spawning fish in a location where people could then take them out with dip nets, spears, leisters, or with their hands (Birket-Smith, 1930:20,26-28; Brightman, 1993:262; Martijn and Rogers, 1969:96; Orecklin, 1976:71; Smith, 1982:10).

Fishing was done by Cree and Dené in both winter and summer. To cut through the winter ice, the people often used ice scoops of bone or antler (Helm and Leacock, 1971:346; Helm and Thomas, 1966:20; Honigmann, 1956:37). In some cases, they may have heated rocks to melt through the ice (Orecklin, 1976:73), or built fires directly on top of the ice for the same effect (Lister, 1999: discussion). Prior to the introduction of metal ice chisels and axes, ice fishing would have been a particularly difficult task. It has been suggested that winter fishing was done mostly in locations of thinner ice, including areas of faster water flow like lake outlets, narrows and rapids, as well as at the base of waterfalls which might remain open all winter (Hanks, 1983:352; Lister, 1988:75; 1999: discussion; Norman, 1982:81; Orecklin, 1976:73). Care would have had to be taken when venturing out over such locations, however. Ice tends to be weaker in areas of faster current, including those sites noted above as well as along bends in the rivers and the ice beside any open water (Betka, 1996). While this might make cutting through the ice easier, it can also make walking over it more dangerous.

Angling with a single hook and line was less productive than many other ways of fishing, but because it required so little preparation, effort or equipment, it was commonly practiced. Angling was done in all seasons. Among the Dené at least, it was the most common method for winter fishing (Birket-Smith, 1930:28; Blondin, 1997:23; Brandson, 1981:3; Glover, 1962:128; Hearne, 1971 [1795]:15,16; Rostlund, 1952:115). Angling was

most effective for taking predatory fishes like jackfish, pickerel, perch, sauger and trout, and less useful for suckers, sturgeon or whitefish (Rostlund, 1952:114).

During the fish runs of spring and sometimes fall, when the fish could be found concentrated near shore in shallow water, they could be speared at the base of falls or rapids, and sometimes in lake narrows, by people standing on the shoreline or on platforms constructed to extend over the spearing sites (HBCA, E.3/3:26d; Mason, 1967:13). Fish were most easily speared in clear water, but in murkier waters reed barricades could be built that would shake when hit by a large fish, giving its location away (Mason, 1967:13; Rogers and Black, 1976:6; Rostlund, 1952:105). The Dené were additionally known to have speared fish in shallows farther from shore from canoes, like they did swimming caribou (Birket-Smith, 1930:26,27; Blondin, 1990:119; VanStone, 1974:25). Sturgeon were the fish most often speared, but large jackfish and whitefish could also be taken in this way (e.g. Birket-Smith, 1930:26,27). The conditions and locations most suitable for the use of harpoons and fish arrows were probably much the same as those for spearing.

The re-useable weirs and fish traps had to be built in shallow water, or else fish could not be trapped or retrieved, and they were most often constructed in streams, across narrows and rapids, or at the mouths of streams where they met with lakes or larger rivers. Because they could not be effectively used in lakes, weirs were only useful for trapping fish that lived or spawned in rivers and streams (Birket-Smith, 1930:27; Cleland, 1982:775; Mallory, 1975:5; Meyer, 1985:213; Meyer and Thistle, 1995:428; Orecklin, 1976:71; Rogers and Black, 1976:8; Rostlund, 1952:89, 101; Steinbring, 1981:247). Conscientious fishermen took apart their weirs when they had enough fish or were moving on to a new site (Blondin, 1997:197; Lister, 1999).

Gill nets took considerable effort to manufacture and to set - particularly in the winter - and were in need of regular repair (Blondin, 1997:22,23,202), but they were the most efficient way to get large numbers of fish (Rostlund, 1952:81). They could be used at any time of year, except during the break-up and freeze-up, but they were most effective in

the spring and fall when fish were migrating (Heffley, 1981:138; Irimoto, 1981a:42; Smith, 1978:72). Cree were known to set gill nets both in open-water and under the ice during the early fur trade, and they probably did the same before the fur trade (Rogers and Smith, 1981:134). It has been said that the Dené, however, probably did not use them much in winter months until winter fishing became more important to them when they became more involved in the fur trade (Birket-Smith, 1930:27; VanStone, 1974:25). Nets were set in the location and at the depth that fish were most likely to be in that season (table 5.1).

5.5 Cosmos and Spirituality.

For many people, the world can be a place full of spiritual forces and beings that can be helpful, harmful, or indifferent towards people. The oral histories of both Cree and Dené people tell many stories of such beings, and people were affected by these teachings, acting in ways that would not always seem rational to those who did not share the same world view. People react to the world that they perceive around them, and this is not always the same world as that seen by outsiders (Burch, 1971:148). For these reasons, land use and other behaviors of past peoples cannot always be explained in terms of 'economic rationality'.[78] Archaeologists without the same perception of the world as that of the people whose material traces they study, or at least awareness of that perception, cannot hope to ever be able to explain everything they see in the archaeological record, and should recognize this.

For example, certain distinctive features of the landscape - like the footprint-shaped impressions in rock along Footprint Lake known as Wee-sa-kay-jac's Footprints - are said to be physical traces of events of long ago. These are important cultural sites, and their origins or meanings have been passed down in the oral histories of the Cree (Linklater, 1994:77). Without access to these oral traditions, however, the significance of these sites could not be recognized by archaeologists.

Cree religion and ritual was largely concerned with keeping a balance of forces in

Table 5.1 Common methods and locations for fishing.

Spring Spawners	
Pickerel	Most productively taken with gill nets or weirs placed near the mouths of tributary streams, or across the first rapids on the tributaries in spring. Also taken often in the fall, when they approach shallower waters again, in similar locations. (Ayles and Koshinsky, 1974:55; Weagle and Baxter, 1973:43,46,48)
Sucker	Mostly caught in nets and weirs set across stream mouths and rapids in the spring, and over gravel shoals near lake shores. Also taken often in the fall, when they approach shallower waters again. (Glover, 1962:61; Rogers and Black, 1976:6,7)
Jackfish	Taken effectively with any fishing method, year-round. Most often taken in stream mouths, in eddies and over rapids in the spring. Available in shallow, weedy bays of lakes and rivers through the summer and fall. (Ayles and Koshinsky, 1974:64,65; HBCA, E.3/3:62d,63d; Mallory, 1975:3; Orecklin, 1976:17; Rostlund, 1952:34,35; Winterhalder, 1978:255,256)
Lake Sturgeon	Mostly speared or harpooned at the base of rapids on tributary streams, in the spring. Sometimes taken in gill nets or weirs set in similar locations. (Glover, 1962:44; HBCA, E.3/3:26d; Orecklin, 1976:17; Rich, 1949:168; Rogers and Smith, 1981:133; Williams, 1969:118).
Fall Spawners	
Whitefish	Taken mostly in gill nets set over clean rock or sand bottom in lakes near islands and offshore reefs, or in tributary mouths in the fall. In those areas where whitefish migrated upstream while spawning in the fall, both nets and weirs could be effectively used in or just upstream of stream mouths, or across the first set of rapids. They were taken in nets set in the deeper lakes in the winter. Could sometimes be taken in the spring, when they approached shallow waters, and were occasionally taken in nets set in deep lakes in the summer. (D. Bodaly, 1997:personal communication; Glover, 1962:60; Hecky and Ayles, 1974a:10; 1974b:18; Peristy, 1989:26; Rogers and Black, 1976:6; Rogers and Rogers, 1959:134; Rostlund, 1952:29; Weagle and Baxter, 1973:17,19,24)

Lake Trout	They could be taken in nets set near islands and offshore reefs in lakes, or in the mouths of tributaries, in the fall. They were mostly taken by angling through the ice in deeper lakes in the winter. (Glover, 1962:106,128; Rogers and Black, 1976:6; Rogers and Rogers, 1959:134; Williams, 1969:119)

the world, ensuring survival of the people by maintaining healthy spiritual relations with all around them. Although certain people - 'shamans', 'dreamers', 'medicine people' - had special abilities in their relations with the spirit world, each individual could communicate with their own spirit helper, and each person was responsible for their own actions with regards to keeping that balance. Because the plants and animals were possessed of spirits, animals killed were treated with respect to ensure that their spirits would continue to let themselves be taken by the people. The bones were often burnt, or thrown into the water, to keep the dogs from eating them. Those of more spiritually important animals (for example, bear) were often placed up in trees along the shoreline, again out of respect (Boulanger, 1971:49,50; Brightman, 1993:83,84,92; Crowe, 1991:37; Martijn and Rogers, 1969:122; Meyer, 1975:436; Rogers, 1966:35; 1973:76; Smith, 1981a:263; Tanner, 1979:1).

Feasts held after a successful hunt were not only social events for sharing food, but were spiritual as well. They were held in order to thank and honour the animals taken, and to ask for successful hunts and harvests in the future (e.g. Mason, 1967:59). Feasting was often a part of the ceremonies held to celebrate the return of spring and other important times of the year (Franklin, 1910:73,74; Rogers and Rogers, 1959:134,135,136,137,138). Beaver feasts were important to many Cree groups (Pettipas, 1980:198,199), as were the feasts held during waterfowl migrations of the spring and fall. Many families would come together at special sites to hunt the waterfowl and to hold a Goose Dance ceremony at which people alternately feasted and danced in honour of the waterfowl spirits until all of the feast was eaten - often two to three days later (Linklater, 1994:91; Mason, 1967:59,60; Meyer, 1975:435,446). Being special places, Goose Dance sites were re-used over many years, and some of these sites are still known by people today; the (now flooded) Dancing Circle Island site at the north end of Southern Indian Lake and the Wuskwatim Circle on Wuskwatim Lake are such traditional dancing sites and were used for the Goose Dance (Linklater, 1994:91).

Plants collected for food, raw materials and especially for medicines were also

harvested respectfully. Some people would leave offerings in the place from which they took medicinal plants (Ahenakew and Wolfart, 1992:157). If the medicines were not harvested with respect and prayer, or were taken from a place that was not 'clean' (a more isolated place where they would not be walked on or picked for other uses), it is said that the medicines would not work (Zieba, 1990:61). Birch trees, important to the Cree for so many reasons, were also sacred, and prayers and offerings were made by some Cree at the harvesting site to thank the tree and ask for its protection (Pettipas, 1979:47).

Peoples' activities, conditioned by this sense of responsibility and respect for the land and spirits around them, could sometimes be influenced by more malevolent beings as well. In hungry years, stories circulated about creatures like the *Witiko*. These were people who, driven by starvation or madness, resorted to eating human flesh and became cannibalistic monsters with hearts of ice (Brown and Brightman, 1988:88,90; Franklin, 1910:72; Mason, 1967:58; Merasty, 1974:1,2). These beings were very dangerous, and rumour of their being in a particular area was sometimes enough to keep people away from that place (e.g. Brightman, 1989:94; Downes, 1943:38; Norman, 1982:13). When monsters like the *Witiko* were thought to be nearby, people were sometimes reluctant even to leave the camp to hunt (Norman, 1982:66), although hunger would probably win out over fear in time.

Witiko were just one of several types of beings that could have a significant influence on the movements and activities of Cree people. Drowning as a result of capsizing canoes in high winds or at bad rapids was a common source of death in the boreal forest (Steegman, 1983:256), and Cree travellers made offerings to the spirits that controlled the weather and the water before crossing dangerous sections of water. These spirits included *Misipisew*, the water lynx which lived in the northern lakes and rivers and sometimes pulled people into whirlpools or rapids on the rivers to drown them (Brightman, 1993:83; Brown and Brightman, 1988:109; Ray and Stevens, 1971:15,22). *Mimikwisihwahk* were the little people who lived in the cliffs or underground along

shorelines, often near rapids and falls. They were tricksters, but were mostly harmless unless teased or chased, and could grant calm waters and safe passage or instructions in the use of medicines when they chose (Brightman, 1993:84; Brown and Brightman, 1988:197; Dewdney, 1965:12-14; Downes, 1943:39,40; Linklater, 1994:83; Ray and Stevens, 1971:15,96,97).

Offerings like fish, tools, or tobacco (when it became available) were placed at the rapids, or in rock crevasses and caves or beneath the rock faces thought to be inhabited by *Mimikwisihwahk* or other water spirits (Dewdney, 1965:12-14; Jones, 1981:76,96). Offerings were sometimes also made at the *Kipochihkahn* or *Manitohkan* - figures carved into trees or constructed by tying willow bundles together in the form of the spirit - and similar figures or faces painted on large stones often found at dangerous points along travel routes. With these offerings people asked for safe passage, desirable weather and good luck in the journey, or in getting plenty of food (Brightman, 1993:116; Dion, 1979:57; Franklin, 1910:69,70; HBCA, E.3/3:32; PAM, MG1 B14, Ia:155; Linklater, 1994:65.66,89; Riddle, 1994c:9).

Rock paintings found along water routes across the Shield were also among the special sites at which the offerings to the spirits were sometimes left (Dewdney, 1965:14; Jones, 1981:76; Pettipas, 1993:59; Ray and Stevens, 1971:97; Steinbring, 1998:4,90). The ochre images, which were painted on steep rock cliffs at or a short distance back from the water's edge (Jones, 1981:47,48), were first made in times long past[79] and have continued to be painted until after European contact (Jones, 1981:69; Pettipas, 1993:57; Steinbring, 1998:1,2,4). Some Cree believe that the paintings were made by their ancestors, depicting dreams or visions received by the painter, or as charms for luck or medicine (Dewdney, 1965:14; Jones, 1981:71; Pettipas, 1993:57,59; Steinbring, 1998:4,5). They are often associated, too, with the *Mimikwisihwahk*; some say that these spirits made the paintings; others that the little people live in the rocks where the paintings are found (Dewdney, 1965:14; Pettipas, 1993:59), and so if people sought the help of *Mimikwisihwahk*, they

could make offerings at these places.

Cree people could also seek help from *pawakan*, their personal spirit helpers. At adolescence, Cree youths - mostly boys, but some girls as well - would go off a distance from the camp to an isolated place in the bush. There they would fast and sleep for a number of days, with no fire, and hope for dreams sent by a *pawakan* who would see their deprivations and offer them medicine powers (Boulanger, 1971:49,50; Brightman, 1993:78-80; Brown and Brightman, 1988:140,194; Crowe, 1991:37; Smith, 1981a:260). Throughout their lives, individuals seeking help from their *pawakan* could return to dream quest sites to fast and dream again, and some made several quests in a single season (Brightman, 1993:85; Steinbring, 1998:5).

The sites chosen for the dream quest varied. Depending on whether the dreamer sought help from spirits of the earth, sky, water or underworld, they might build their bed up in a tree or on a scaffold, on a hill top, beside - or even in - a lake or river, or on the ground in some other suitable location. Scaffolds built in trees alongside shorelines were popular sites, for they brought the dreamer into contact with all four realms at once, and sacred places were also favoured (Brightman, 1989:90; 1993:82-85; Brown and Brightman, 1988:140,141,192; Downes, 1943:47; Merasty, 1974:17; Steinbring, 1998:5,122). The platforms constructed by one dreamer could be used again by others at later times (Brightman, 1993:82). Also used by some people were pits dug into the mud along the shores of the lakes and rivers in which they would be submerged up to their necks to wait for their vision (Steinbring, 1998:5).

Until the recent development of permanent communities, there was no one special place for burial of the dead. People were normally laid to rest in a place close to where they had died. Most often, the person was buried in a bark or branch-lined grave dug into better-drained ground (if possible),[80] usually along a shoreline. In the wintertime, the burial might have been made beneath the hearth, where the ground was more thawed, or the dead might sometimes have been left on the surface - beneath a cache of poles and stones - or up on a

scaffold until the spring (Drage, 1982:40; Honigmann, 1956:79; 1981:223; Riddle, 1994a:23; Smith, 1981a:262; Steinbring, 1998:5; Williams, 1969:181,182).

Spirits of the dead who could not find their way to the next world might become ghosts and haunt the place of death, so families tried to abandon these places following the burial (Glover, 1962:76; Ray and Stevens, 1971:8; Williams, 1969:182). The person's belongings might also have been buried with them, or left at the grave site, and other gifts were also sometimes included in or by the grave (e.g. Brownlee and Syms, 1999:17; Flannery, 1995:13; Franklin, 1910:73). Goods cached or left by the grave might sometimes be taken by other people who needed them. This was generally accepted so long as the borrowers showed proper respect to the dead when doing so and tried to leave something in exchange (Franklin, 1910:73).

While grave sites were respected and considered sacred, and while people may not have liked to camp unnecessarily by these places for fear of disturbing the dead (Drage, 1982:40; Ray and Stevens, 1971:8), they were not altogether avoided (Franklin, 1910:73; Honigmann, 1956:79). In more recent times, at least, people often feasted at grave sites for the spiritual connection of the place with those who had died (Linklater, 1994:80; Riddle, 1994a: Appendix 4, e.g. interviews 1,6,14).

Like the Cree, Dené were also concerned with maintaining proper relations between themselves and the spirits that inhabited and controlled all creation, and with "living a good life" (Blondin, 1990:60; 1997:60; Ward, 1995:101). The animals were honoured, and were killed and butchered respectfully so that they would continue to let themselves be taken (Birket-Smith, 1930:79,80; Blondin, 1997:59; Ryan, 1994:18,19,47), and offerings were left in the place of plant medicines collected by healers (Ryan, 1994:18,19,46; Smith, 1982:38).

Much of the spiritual life of Edthen-eldeli Dené was focussed particularly on the gift of the caribou (Smith, 1981b:272) and these animals were treated with great respect. For example, Smith (1978:72) wrote that a "wide-spread tradition holds that caribou never die,

unless killed, but if one is captured or mistreated his spirit will go to the others and warn them to remain away from the area". Among examples of the proper treatment of caribou recorded by Birket-Smith (1930:80) was that "(d)ogs must never gnaw caribou heads ..., and therefore they must be burned or placed in a tree out of the reach of dogs." The people could also never try to own the caribou, as herders do, or the caribou would withdraw their gift (Bussidor and Bilgen-Reinart, 1997:10).

Young people learned through dreams the ways of spirit guardians who they might attract through fasting and prayer, or whom visited the dreamer of their own volition. All people could communicate with the spirits through their dreams. Sometimes dreamers (men or women) were given special medicine powers - *inkonze* - by the spirits and taught how to use them to heal, control game, ward off evil, forecast the future, or bring good fortune (Andrews and Zoe, 1997:163; Blondin, 1990:60,106,110; 1997:51,54; Crowe, 1991:37; Smith, 1982:37,38; Smith, 1981b:279; Ward, 1995:102). The dreamer did not necessarily have to go away on a dream quest as the Cree did, but those having trouble finding their *inkonze* sometimes did. Sometimes the guardian spirit would instruct the dreamer to go into the bush to meet them there, where they would instruct them for a time (Blondin, 1990:60-62; 1997:57; Smith, 1982:38). Children who showed promise of great *inkonze* might move away, with their family, from the rest of the people while they grew into those powers (Blondin, 1990:110). Of all the Dené peoples, it has been said that the Chipewyan had the most powerful *inkonze*, and that this is what made them strong (Blondin, 1997:18,93).

Like Cree *pawakan*, *inkonze* was a very personal sort of power. It was often used, however, to help others - by healing the sick or injured, driving off enemies and malaevolent spirits, and attracting game to be hunted (e.g. Hearne, 1971 [1795]:218-221,343). One of the ways in which *inkonze* could be shared among the Dené was through the drum songs. These were given to special medicine people through visions or in their dreams, as prayers for thanksgiving, healing, making requests, and for teaching people how to live a good life. The prayer songs would be taught to the rest of the band, and passed down through the

generations. These could then be used by individuals or by a whole gathering of people. Although communal religious events do not appear to have been as regular or common among the Dené as among the Cree, the Dené's drum dances were very important to them (Blondin, 1990:58,59; 1997:59-62).[81]

In addition to making these communal prayers, Dené sometimes asked for help from the spirits by making offerings at special places thought to be inhabited by spirit powers (Andrews and Zoe, 1997:162,163; Blondin, 1997:86); spirits inhabited each of the elements of earth, sky and sea, and were responsible for control of those realms (Hearne, 1971 [1795]:346,347). For example, at each body of water that had to be crossed, and especially when Dené began to use canoes more extensively for transportation during the fur trade, they often made offerings to the spirits controlling the wind and water before setting out, asking for safe passage (Andrews and Zoe, 1997:162; Smith, 1982:39).

At other special sites well known through their oral histories, Dené could divine the future - whether or not they would live a long and good life, for example - by 'reading' some aspect of the land or environment at the site. They would perform a tradition-specified test, which might vary by site, and the result of the test would be the land's answer (Andrews and Zoe, 1997:167,171).[82]

But not all aspects of the supernatural were friendly to Dené, or could be pacified through offerings. The Dené too sometimes had malevolent beings to contend with. Invisible, Cree-like enemies or 'Bushmen', called variously *Nakhani*, *Hoceras*, or *Ena-thlini*, lurked about the northern forests in the summers to prey on Dené and to steal their children. Dené avoided the forested areas in the summer, especially locations where the Bushmen were rumoured to be about, and if one was heard nearby, few people would venture far from camp (Birket-Smith, 1930:29,81; Blondin, 1990:151; Crowe, 1991:47; HBCA, B.91/a/2:13; Irimoto, 1981a:25,91; Smith, 1982:43,44; VanStone, 1974:63,64). The whistling spirits, *ejuna'*, were also feared, and were again mostly heard in the forested areas during the summer (Birket-Smith, 1930:81). People with protective or killing *inkonze* could

sometimes protect the group from the bushmen and other spirits, but not all medicine people had this particular gift (Smith, 1982:44). When it was possible, places known to be inhabited by malaevolent beings were, more simply, just avoided (Andrews and Zoe, 1997:163).

Ghosts of the dead were also feared by Dené, and a place of death was generally abandoned and avoided for some time after (Birket-Smith, 1930:77; Blondin, 1990:69,193; Smith, 1982:33,67; Smith, 1981b:279; VanStone, 1974:63). There is no early record, nor archaeological evidence, of eastern Dené or Taltheilei people burying their dead in the ground. It is possible that they were mostly left above ground, sometimes simply wrapped in hides and exposed on the surface, and other times buried beneath stone cairns or wooden caches (Birket-Smith, 1930:77; Hearne, 1971 [1795]:341; Nash, 1970:79; Smith, 1982:33; Smith, 1981b:279).[83] Among some people, at least, the belongings of the deceased person were destroyed following their death (Birket-Smith, 1930:77; Smith, 1982:33).

6. HISTORICAL BACKGROUND: POSTCONTACT.

6.1 The Earliest Fur Trade West of Hudson Bay: A.D. 1611-1733.

The cultures described for the Cree and Dené people at contact had developed over the years in response to the local ecological and social conditions of those times. Hundreds of generations after the first people came to live in this region, the rate of change again accelerated as new economic forces were introduced from outside.

In A.D. 1611, Henry Hudson's crew became the first known Europeans to have been seen locally by Cree west of Hudson Bay, at the mouth of the Churchill River. At this time and place gifts were exchanged between the crew and the single Cree hunter whom they encountered there (Alcock, 1916:433; Brownlee and Syms, 1999:49; Mason, 1967:17; Thistle, 1986:4). Several decades passed before Europeans returned to the region in their search for more furs.

Aside from this one recorded encounter, the European-North American fur trade appears to have first been brought to groups west of Hudson Bay indirectly. By the middle of the 17th century A.D., or perhaps earlier, travellers to and from the St. Lawrence Valley and the Great Lakes were bringing back information about the Europeans as well as a significant number of their trade goods (Brownlee and Syms, 1999:47; Thistle, 1986:7). The Cree trading with the French at this time are not well identified from the records, but are known to have wintered inland from the upper Great Lakes where they regularly came to fish in the spring seasons (Thistle, 1986:9). These were probably Swampy Cree peoples.

These Cree, as well as the Saulteaux, Ojibwe and various other Algonquian groups travelling to the St. Lawrence River and Great Lakes in this early period appear to have been trading their own European goods to the Rock Cree farther north and inland from Hudson Bay (Brownlee and Syms, 1999:44,47,48,50). How many, if any, Rock Cree were themselves travelling south and east to trade directly with the Europeans is difficult to say, but such journeys would not be completely out of question either after or prior to the

beginning of the fur trade. It is likely, however, that most of the European trade goods reaching Rock Cree territories at this point were being introduced through trade with neighbouring groups. Such long distance trade patterns appear to have had ancient roots, although the frequency of extended journeys for this purpose is unknown.

A.D. 1668 marked the beginning of the first significant Bay-side trade, as French traders moved beyond the Great Lakes and established themselves on James Bay. They were quickly followed by the English (Mason, 1967:7), who created the Hudson's Bay Company in 1670 to trade on James and Hudson bays (Russell, 1982:97).[84] Meanwhile, French *coureurs de bois* had begun travelling into the interior, generating further interest in the fur trade (Brown, 1980:5; Van Kirk, 1980:9).

Copper pots, iron goods like axes, knives, ice chisels, awls and needles, and the prestigious flintlock muskets (and shot and powder) were among the items introduced by the early European traders that first attracted Aboriginal trade. Tobacco, clay pipes, liquor and glass beads were also popular (Helm, Rogers and Smith, 1981:151; Kidd, 1957:17; Quimby, 1966:64,65), and quantities of manufactured cloth, blankets, coats and other items of clothing were also traded from an early date (Kidd, 1957:17). These and other 'luxury' goods seem to have become more and more common as the trade progressed, however (Helm and Leacock, 1971:359; Helm, Rogers and Smith, 1981:153). Food items including flour, tea and sugar, which later became important dietary supplements as people became more and more involved in this economy had also been traded since the early fur trade period (Pettipas, 1980:192,193) although trade for store-bought foods was comparatively rare at this time (Helm and Leacock, 1971:359).

In these early years of the western fur trade, most of the inland Cree were trading at the Bay only every few years (Thistle, 1986:23). These people would normally visit the posts on behalf of several other families, and they often acted as middlemen between the traders on the Bay and other, more distant Aboriginal groups (Ray, 1974:69). Because of the relatively poor resource base and harsh winter conditions, the Hudson Bay Lowlands

appear to have been visited only sporadically by subarctic peoples prior to the fur trade (Feit, 1969:49,54; Russell, 1975:425). As the fur trade rapidly grew, however, the Swampy Cree began to spend more of the year at or near the coast (Thistle, 1986:16), hunting for the Bay-side posts and doing a little trapping for furs in exchange for trade goods and other provisions. Those remaining closest to the posts came to be called the 'Homeguard' and made the posts their home bases (Brown, 1980:19; Mason, 1967:20; Pettipas, 1993:8).[85] These were mostly the families of women attached to European traders through country marriages and later the families of their Métis children, among whom the boys were often employed by the posts and some of the girls married off to other traders when they grew older (Brown, 1980:159; Pettipas, 1994:61).

Through these early years of the western fur trade, the HBC had a growing Cree clientele at York Factory, their post at the head of the Nelson and Hayes rivers, but they were only rarely able to attract Dené to trade there. While the eastern Dené, like the Cree, first encountered European traders fairly early, they made no particular effort to meet with them until at least the 1680s. Even then they continued to trade primarily through Cree middlemen, if at all (VanStone, 1974:91,92; Yerbury, 1986:17).

For the Dené to become as involved in the fur trade as the trading companies hoped, they would have had to abandon the productive caribou hunt long enough to trap for furs and to bring them to the posts. These were all south and east of the territory regularly used by Dené at this time. Because the caribou hunt already gave them so much of what they needed, most Dené were unwilling to do this (Hearne, 1971 [1795]:81). Also, the traditionally tense Cree-Dené relationships were becoming more hostile and raiding had increased, probably resulting from the increased interest of the Cree and some Dené in the fur trade and their subsequent competition for access to the trade posts (Gillespie, 1975:362).[86] Because the furbearers in the transitional forest were less desirable to the Europeans than those farther south, Dené trappers would have had to spend part of the year

in the full boreal forest, and this could be dangerous because of the potential for Cree raids (Hearne, 1971 [1795]:177; Smith, 1978:69; 1981b:273). Even travelling to York Factory required that they move through Cree territory (Yerbury, 1986:21). As a result, only a few Dené bothered to trap for furs for trade at this time and only did so in areas where Cree were scarce (Yerbury, 1986:34).

In 1717 the HBC established Prince of Wales Fort (later called Fort Churchill), a new post near the mouth of the Churchill River. They hoped that by dedicating the more northerly post to use by the 'Northern Indians' and encouraging the Cree to continue trading at York Factory, the Dené would be less reluctant to come to the Bay (Birket-Smith, 1930:13). Cree from the Churchill River region, however, found the new post faster to reach than York Factory and soon began trading there instead (Pettipas, 1993:17). Use of the lower Churchill River increased accordingly (Alcock, 1916:439; Wood, 1983:65).

By this time, the HBC had seen that in order to involve the eastern Dené in the fur trade, better relations had to exist between Dené and Cree. In 1715 they sent Thanadelther, known as the Chipewyan 'Slave Woman', to convince her people of the benefits of peace with the Cree. When Prince of Wales Fort opened two years later, a tenuous truce had been made locally and raids gradually declined, although tensions continued for many throughout the early fur trade years (Gillespie, 1975:359,361; Smith, 1981c:137,139,141). With time, those Dené who wished to trap and travel in the full boreal forest could do so a bit more freely, but overall they remained largely marginal to the fur trade, particularly the Edthen-eldeli Dené (Hearne, 1971 [1795]:81-83,178; Smith, 1981b:273; Yerbury, 1986:44). Not until the 1740s did larger numbers of Dené begin to visit trade posts more regularly, more often to trade meat and caribou hides than furs. The post-provisioners (or Homeguard) for Prince of Wales Fort were by this time increasingly Dené (Gillespie, 1975:366; Pettipas, 1993:20; Yerbury, 1986:36,38). Furs brought in by eastern Dené traders in this period were mostly bought from the Dogrib and Copper peoples to the northwest for used trade goods (Hearne, 1971 [1795]:177,178).

6.2 **Periods of Early Inland Trade: A.D. 1734-1820.**

The first inland trade posts established west of Hudson Bay were built by the French in 1734, around Lake Winnipeg (Ray, 1978:28; Russell, 1982:102). Within a few years, they were wintering in posts established along the lower Saskatchewan River system in order to intercept Cree traders heading towards the Bay in spring (Burpee, 1973:3; McInnes, 1913:2; Thistle, 1986:9). The HBC began sending more men inland at this time, to explore the northwest and to try to draw trade back to the Bay, but with little success (Williams, 1969:256).

In 1760, Montréal was captured by the English and supplies to the French traders west of Hudson Bay were cut off (Russell, 1982:104), and in 1763 the French ceded to the English their claim to the Canadian territories. The English monopoly over the trade was short-lived, however. The first of a series of North West Companies was soon formed, sometime prior to 1780, by Canadian voyageurs who returned inland to trade (Klimko, 1982:127,128; Mason, 1967:8). With the influx of fur traders into the northwestern interior, distant peoples had more opportunity to trade directly with them, rather than through neighbours closer to the Bay. Those Cree who had before acted as middlemen now had to trap their own furs for trade, or provision the posts, if they wished to obtain European goods (Pettipas, 1993:16; Ray, 1974:69; 1978:32), so their dedication of time to taking furbearers for trade grew.[87]

By 1773, the Canadian 'Pedlars' were present on the Saskatchewan River system in such large numbers - significantly cutting down trade at the Bay-side posts - that the Hudson's Bay Company was forced to send men in to establish their first inland trade post, Cumberland House on Cumberland Lake, along the lower Saskatchewan River (Tyrrell, 1934:25,26). This marked the beginning of a period of intense inland competition between the HBC and North West Company (and later with the XY Company[88] as well as with independent traders) which lasted for almost 50 years.

During this time, trade posts were built and abandoned repeatedly throughout the northern forests and beyond.[89] Records of many of these exist for the lower Churchill and Nelson River regions (table 6.1). By the later part of the 18th century, only Swampy Cree and local Dené trappers and post provisioners were visiting the Bay-side posts regularly (Pettipas, 1993:19; Williams, 1969:193). More distant Cree and Dené continued to travel to the Bay occasionally (e.g. HBCA, B.91/a/1:8), possibly to participate in the spring and fall goose hunts on which the Bay-side posts depended for much of their year's supply of meat (e.g. Hearne, 1971 [1795]:25).

Because of the highly competitive nature of the trade companies at this time, fur trapping and trading became more profitable and Aboriginal involvement in the fur trade increased. Even some Edthen-eldeli Dené began moving farther into the boreal forest in the winters to trap marten and other furbearers, dedicating less time to hunting caribou in this season than previously and travelling to the posts to trade in the summer (Gillespie, 1975:366; Smith, 1981b:273) if they were not already there for the spring goose hunt. Most of the Chipewyan, however, were able to maintain their middleman position between the trading companies and the western Dené through much of the early inland fur trade period. Trapping could thus remain very secondary even for those eastern Dené who were more interested in the fur trade (Blondin, 1997:31; Smith, 1981b:273).[90] Still, by the start of the period of competitive inland trade, Dené were already providing most of the furs brought in to Prince of Wales Fort (Hearne, 1971 [1795]:81).

During the fur trade, there was a tendency for regional bands to come together at or near the trade posts for their annual gatherings. While summer gatherings were nothing new for boreal forest peoples and many of the inland trade posts were in fact strategically located at traditionally important gathering sites (Meyer and Thistle, 1995:431), there were considerably smaller numbers of trade posts at any one time than there had been of these traditional sites. As a result, there were fewer, but larger gatherings occurring before long (Helm and Leacock, 1971:361; Martijn and Rogers, 1969:97,99; Rogers, 1966:31,32).

Table 6.1 Some recorded early trade posts along the lower Churchill and Nelson Rivers.

Post recorded	Location	Dates recorded	References
trading camps (NWC)	Frog Portage, Churchill River	1774, 1776, 1777	HBCA, E.3/1:64; Tyrrell, 1917:375,376
Rat River Fort (NWC)	Threepoint Lake	1789-94	Smythe, 1968:96
outpost (HBC)	Split Lake	1790-	Wiersum, 1972:27
Baldwin's House (independent)	Pukatawagan Lake	(pre-1793)	HBCA, E.3/3:27; PAM, MG1 B14, Ia:157; Smythe, 1968:98
Wapiscow's House (Canadian)	Duck Portage, Churchill River	(pre-1793)	PAM, MG1 B14, Ia:158,159
Burntwood Lake House (NWC)	Burntwood Lake	1793-94	Smythe, 1968:95,96
posts (NWC; HBC)	Threepoint Lake	1794-95	Orecklin, 1976:47,48; Riddle, 1972:3
Granville House (HBC) ; (NWC)	Granville Lake	1794-96	HBCA, B.83/a/1,2
posts (NWC?)	Southern Indian Lake	1797-1800, 1803-04	Bellhouse, 1971:11; HBCA, B.91/a/1:1; Smythe, 1968:98
Nelson House (HBC)	Nelson Lake	1800-1807	Smythe, 1968:97
post (NWC)	Nelson Lake	(established by 1804)	Smythe, 1968:97
Musquawegan (NWC); Granville House (HBC)	Granville Lake	1804-05	Smythe, 1968:97
post (Canadian)	Pukatawagan Lake	(established by 1806)	HBCA, E.3/3:27
Indian Lake House (HBC)	Southern Indian Lake - various locations	1805-06, 1808-11, 1819-23	Bellhouse, 1971:12; HBCA, B.91/a/1-8
posts (NWC)	Southern Indian Lake - various locations	1805, 1808, 1809, 1811 (minimally)	Bellhouse, 1971:12; HBCA, B/91/a/3:2,10d,13d; HBCA, E.3/3:32
unidentified post	Opachuanau Lake, at the east end narrows	(pre-1807)	HBCA, E.3/3:31,31d

This concentration of people around the trade posts was probably responsible for the massive devastations of Aboriginal populations when epidemics of new, European diseases were introduced. Smallpox first hit the Cree around 1772 (Thistle, 1986:62), but it was the outbreak of 1781-82, by which time most Cree and certain groups of Dené were regularly visiting trade posts, that was most devastating. In this winter the Basquia Cree, a Western Cree band focussed around the high traffic Pasquia Hills and Cumberland House region, were all but wiped out. Cree populations throughout most of the Nelson and Churchill River regions were reduced by as much as half, as were many of the Dené trading on the Churchill (Glover, 1962:92; Pettipas, 1980:190,191; Thistle, 1986:62,63; VanStone, 1974:93).

This epidemic left much of the boreal forest sparsely occupied and the Saskatchewan River delta almost empty of people. This made it possible for neighbouring groups to move into the abandoned areas. The intensification of hunting and trapping for trade had left many parts of the subarctic depleted of large game and furbearers, especially in the Hudson and James Bay lowlands (Bishop, 1972:63; Smith, 1981a:258). When the territory opened up, Swampy Cree from the Lowlands took the opportunity to migrate westwards into the forest, where - although the much-valued beaver was already on the decline, as was game in the vicinity of the posts (Orecklin, 1976:29) - it was still much easier to make a living (Smith, 1981a:258).

Dené had become increasingly involved in the fur trade after inland posts were set up in the southern parts of their own territory in the late 1770s (Gillespie, 1976:8). The western Dené for the first time had direct access to the traders (Blondin, 1997:31), and the eastern Dené were beginning to lose their position as middlemen between their western neighbours and the Europeans, forcing them to hunt and trap for trade more themselves if trade items were desired. By 1777, Hearne reported that the great majority of his trade in beaver in this region was with Dené hunters who had entered the fur trade in the Athabasca region (cited in Brandson, 1981:5).

After the 1781-82 epidemic, Dené were able to more aggressively expand their territories southwards into lands recently abandoned by the northernmost Cree, where the trapping was better than in the transitional forest (Gillespie, 1975:375; Smith, 1981b:273; 1981c:148). By the mid-1790s, this expansion had reached its maximum extent, placing the Cree-Dené 'boundary' along the Churchill River (Gillespie, 1975:382), with Dené trappers regularly travelling even farther south.

While earlier records and their own oral history indicate that Dené were not regular visitors to the Churchill River region at the beginning of the fur trade, or for generations before (Birket-Smith, 1930:14; Gillespie, 1975:383), fur trade journals recorded Northern Indians trading, for example, at Granville House on Granville Lake by the winters of 1795 and 1796 (HBCA, B.83/a/1:8, B.83/a/2:8d). Only those Dené most committed to the fur trade were at this time spending most or all of the year in the boreal forest, their numbers small and only gradually growing (e.g. HBCA E.3/3:32d,35).

By the early 19th century, large game and furbearers became depleted in the interior as they had in the Lowlands. The HBC soon began to encourage the trapping of muskrat and marten over beaver to allow the seriously declining beaver to repopulate the regions from which they had all but disappeared (Orecklin, 1976:29; Pettipas, 1980:198,199). The local scarcities of moose and woodland caribou were even more difficult for the trappers. Aboriginal populations already weakened by a series of epidemics and unable to range far away from the trap lines in search of better hunting had to disperse into small, often single-family groups for most of the year - subsisting even more on fish and small game than previously - and frequently resorted to the trade posts for food (Bishop, 1972:65; Brightman, 1991:12; Rogers and Taylor, 1981:233; Yerbury, 1986:44). This, together with a newly established credit system that kept trading families in debt to specific traders (Pettipas, 1980:191), tied them ever more closely to the posts. So, by the end of the period of intense inland competition (A.D. 1820), while Woods Cree people were still trapping only as much as they needed to in order to pay for the next year's (or previous year's)

provisions and still committing more time to subsistence activities than to trade (Thistle, 1988:86), the fur trade was more or less a fixed part of their lives.

6.3 **The Later Fur Trade and Missionary Period: A.D. 1821-c.1940.**

In 1821, the NWC was absorbed by the HBC, leaving one company to control the later fur trade in the northwest. Now with a monopoly, the HBC quickly shut down many of its redundant trade posts, leaving open only a few per region, and closing most of their northern outposts. The lower Churchill River was largely abandoned by the HBC (Alcock, 1916:439; Meyer and Thistle, 1995:423; Tyrrell, 1917:381).[91] Although there continued to be some shifting of post locations in the following years, those trade posts in operation during the fur trade monopoly period tended to be far more stable than those of the earlier competitive years. People were able to settle into more regular patterns of trapping and trade and became more affiliated with specific trade posts than previously (Helm et al, 1981:148; Meyer and Thistle, 1995:423; Yerbury, 1986:96).

With peoples' increasing orientation around trade and their affiliation with specific posts through the credit system, and as trappers gradually began to work out of more permanent seasonal base camps in which their families spent much of the year, their mobility and range of travel over the land decreased (Pettipas, 1980:191; Pettipas, 1993:25; Smith, 1981a:258; Yerbury, 1986:69). Bands gathered at the posts during the summer and individual families came frequently to the same posts over the winter months so that 'trading post bands' started to form, the posts eventually becoming 'permanent' summer settlements for many people (Helm et al., 1981:151,152; Leacock, 1986:162; Yerbury, 1986:99).[92]

The HBC's monopoly in the northwest lasted until roughly 1840, when free traders began to trickle back into the region (Thistle, 1986:81) - a process accelerating after 1870 when the company sold their proprietary rights to Rupert's Land to the Dominion of Canada. Cree involvement in the fur trade grew steadily through the later fur trade, the trend

towards decreasing mobility of the families and shrinking ranges growing with that involvement. Such staples as steel axes, knives and awls, and copper pots continued to be important trade items. Firearms, ammunition and steel traps also became increasingly commonly traded items as did luxury goods like beads, embroidery silks and buttons. People also bought more food provisions from the posts over time. While the ability to trade furs for food freed people from having to spend quite as much time hunting in periods that game animals were scarce, this adaptation also kept many families near to the posts year-round, visiting regularly (Helm and Leacock, 1971:359; Helm et al., 1981:151-153; Smith, 1981a:258).

These trends were widespread throughout the subarctic regions, describing in a very generalized way most of the Cree and some groups of Dené. But while many Cree in Manitoba were by this time more or less quite immersed in the fur trade economy, although not necessarily reliant on it (Thistle, 1986:81,86,94), comparatively few of the Dené in this region had become so involved. Even during the later fur trade, most Edthen-eldeli Dené had remained fairly marginal to the trade, participating only where it could be fit into their traditional annual round of activities with minimal conflict (Jarvenpa and Brumbach, 1984:178; Smith, 1982:57,59; Smith, 1978:77; 1981b:273).[93] This meant that most Dené continued to spend only their winters trapping and trading in the full boreal forest, a time of year when they were normally closer to or in the region anyhow, hunting barren-ground caribou in their winter range. The Dené trappers could then continue to hunt caribou, possibly moving their camps and their traplines as the dispersed herds of caribou moved.

It was not until the later 1800s, when winter outposts were opened in the northwest that any of the Dené peoples began to make a more definite shift from a caribou-based economy to a trapping economy. While both winter and summer trade posts farther south, and later the summer trade posts in their own territories had attracted Dené to visit from time to time when they could fit the journey in, the convenience of winter outposts in the regions

in which they already tended to winter gave trappers more opportunity to visit the posts for trade regularly throughout this season, and with the gradually increasing reliance on certain trade goods, they were encouraged to do so. This kept them closer to the posts which meant that they were less able to travel after caribou, especially while trapping (Jarvenpa and Brumbach, 1984:178).

Normally, however, the winter posts were located at least within the winter caribou range (Brumbach and Jarvenpa, 1989:117), so the greatest disruption to the traditional settlement patterns of Dené would have been in the summers, when growing numbers of families who used to travel to the barrens were choosing to remain nearer the trade posts instead (e.g. Irimoto, 1981a:15,16; Yerbury, 1986:74).[94] With this, the mobility and range of a number of Dené peoples began to decrease as trapping began to compete with communal hunting as the dominant economic activity for these families and families became more bound to the trade posts (VanStone, 1974:97, 101,102). This change in the settlement patterns eventually came even to the Edthen-eldeli Dené, although considerably later and at a slower pace than had been the case for most Cree and for more westerly Dené groups, including the other Chipewyan peoples (Smith, 1981b:273,275,276).[95]

Missionaries of the Christian churches first worked their way into north-central Manitoba around 1840, establishing a mission at Norway House (Linklater, 1994:26) and soon after at various other trade posts. Although many elements of the traditional ideology persisted throughout the missionary period and continue still (see, for example, Brightman, 1993; Linklater, 1994; Tanner, 1979), the missionaries' teachings were apparently incorporated into the beliefs of many Cree people and had some influence on their lifestyles, particularly in ending polgyny and in introducing new religious practices. The missionaries encouraged sedentary living and built churches at the trade posts. These post-mission complexes became even stronger focal points for economic, social and spiritual activities, and band members gathered there often (Smith, 1981a:266). By the end of the nineteenth

century, the first more permanent tent and log cabin communities of the subarctic began to grow up around these complexes (Helm et al., 1981:152; Mason, 1967:23; Smith, 1981a:259).

Missionaries similarly began preaching to eastern Dené families in the 1840s when the Oblates built a mission at Île-à-la-Crosse and used this as a base out of which to travel to and among the Chipewyan. Most Dené communities were nominally Christian by the beginning of the twentieth century (Smith, 1981b:273).

6.4 **The Industrial Period: c. A.D. 1940-present.**

Until about 1940, the only non-Aboriginals to spend much time interacting with the subarctic Aboriginal populations were traders and missionaries. Even with the signing of treaties beginning in the 1870s, the lives of most people in these regions were little impacted by the growing Dominion of Canada. With the development of a northern railway (c. 1930) however, non-Aboriginal trappers began to flood the region, and overtrapping resulted as even more people competed for furs. Any individual attempts at conservation proved futile (Morantz, 1987:215,216). In response, a Registered Trap Line system was set in place in northern Manitoba in 1942 (Hrenchuk, 1991:5), tying trappers to specific, exclusive trapping areas.

With the increasing northern presence of industry and with a new interest of the Canadian government in the north after World War II, further impact was felt by the Aboriginal peoples. The government declared themselves responsible for the education, health and welfare of the Aboriginal populations, setting up some sort of housing, community offices and nursing stations to accompany certain trade post-mission complexes. Schools were also established (Helm and Leacock, 1971:359; Helm et al., 1981:149; Smith, 1981a:266,267; 1981b:282).

With the declining prices paid for fur in the 1960s, families by now reliant on many purchased items were often in need of other sources of money. The growth of industry

allowed some men to enter into wage labour, mostly in lumbering and commercial fishing, but these opportunities were and are limited. Many families needed their family allowance to pay for ammunition, milk and other commercial necessities, and these cheques were only sent if the children were enrolled in school. For those communities with day schools, this kept the families - especially the mothers and children - all the more sedentary, living in the settlement for most of the year (Helm and Leacock, 1971:357-361; Helm et al., 1981:149,150; Rogers, 1963a:81; Smith, 1981a:266,267; 1981b:282).

7. CREE SEASONAL LAND USE IN THE BOREAL FOREST (LATE WOODLAND: C.1300-350 YEARS B.P.).[96]

Now that the environmental setting of Manitoba's boreal forest has been described, and Cree and Dené cultural systems and histories have been summarized, it is time to move on to presentation of the reconstructions of their seasonally patterned settlement and subsistence behaviors, i.e., those which may be most readily incorporated into a predictive or explanatory model of archaeological site locations. It must be remembered that, while effort was made to create as realistic and accurate an ethnohistoric reconstruction of precontact Cree and Dené land use as possible, these reconstructions are only hypothetical constructs. What follows in these chapters is only one interpretation of past land use systems. This is based on an extensive survey of sources relevant to Cree and Dené peoples in more recent periods, on an imprecise understanding of the existing archaeological record relevant to the Late Woodland period, and on an equally-imprecise understanding of how Aboriginal cultures changed in response to the introduction of fur trade economy and society before such changes began to be ethnographically documented.

The reconstructions presented in this and the next chapter have been created by working backwards from descriptions of Cree and Dené land use during the historically-known fur trade periods. The precontact seasonal rounds have been presented first, however, for the sake of chronological clarity.

7.1 **Introduction.**

For the Cree people of north-central Manitoba, each year was a progression of seasons marked by changes in weather, in the forest and water around them, in the behavior of the animals, the spirits, and in their own activities (table 7.1). It is not possible to tell a complete story of what happened to a people over the course of a year so far in the past, even if this story did not vary as it does for different families and for different years. But by looking at what is known or believed to have occurred during the yearly cycles of the

Table 7.1 Examples of Cree names for the moons and the seasons.

a) Attawapiskat Cree Moons/Months (James Bay).

mikissi'wiipiisim	Eagle Moon
ni'skiipiisim	Goose Moon (apx. April)
anii'kiipiisim	Frog Moon
sa'kiipakawiipiisiim	Attractive Moon (the plants are greening and beginning to flower)
ooposkoo'wiipiisim	Small birds hatch Moon
oopi'mahoowiipiisim	Flying up of ducks Moon
whewhe'hoopiisim	Wavy Goose Moon (when geese fly south)
kaskati'niipiisim	Freeze-up Moon
pawatcaaki'naciicippsim	Little bit of Winter Moon
kiicee'pawatakinampiisim	Half Old Moon (great winds)
kiicee'piisim	Old Moon (winter - end of the year)

(Honigmann, 1956:31).

b) Attawapiskat Seasons.

siikwuun	early spring: some snow remains, but the ice is breaking and the water starts to run
minuu'skamin	post break-up: high, fast water
nii'pin	summer: hot weather
mekwaa'niipin	mid-summer: very hot
takwaa'kan	early fall: cold is starting to return
mi'kiskaw	late fall: freeze-up of ice
piipuun	early winter: cold weather
mekwaa'piipun	midwinter: very cold

(Honigmann, 1956:32).

c) Mistassini Cree Seasons (Northern Ontario)

sikwan	early spring: break-up
miyuskamu	late spring: open water, but not yet full summer
nipin	summer
tahkuwacin	early fall: freeze-up begins
miciskasic	late fall: freeze-up completes
pipun	winter: cold (December to March)

(Rogers and Rogers, 1959:131,132).

weather, plants and animals in the boreal forest of north-central Manitoba and at the types of technologies and social systems possessed by these people (as suggested from oral histories and archaeology), a range of possible settlement and subsistence choices which they could have made in each season can be determined. This range of possible activities can be further narrowed by looking at the seasonal choices made by descendants of these people during the fur trade and more recent days, and working back through the changes in these patterns which seem to have arisen with or following the introduction of the European fur trade. In this way, a generalized reconstruction of seasonal settlement and subsistence activities of the Cree people in north-central Manitoba during the Late Woodland period can be proposed.

7.2 **Spring.**

A new cycle of seasons in the boreal forest could be said to begin with the arrival of warmer weather on the tail of a long, cold winter. By the time that the snow would crust over with the daily freeze-thaw caused by growing daytime temperatures (around the month of March), the food resources available to be harvested by the people were normally scarce, preserved foods were often long used up, and hunger was common (Black, 1973:60; Brightman, 1993:246). This was especially true in years when the spring was late. Families would be well-dispersed over their winter ranges by this time, concentrating most of their activity on getting what game, fish and plant foods they could find. Sharing of whatever food that was taken among members of the camps could have helped to level out uneven success in the food quest and would have been even more important in times of scarcity than in times of plenty (Steegman, 1983:252).

At this time of year people were able to get some plant nutrients from the inner bark stripped from the birch, poplar, jackpine, spruce, fir and tamarack trees found all around them (Ahenakew and Wolfart, 1992:153,155; Black, 1973:133; Glover, 1962:58; Shay, 1980:259, table 15), and old rosehips and other berries still on the bush might be eaten as

well (Black, 1973:60). Early spring was the best time to tap the birch trees for their sap to make a sweet and nourishing drink, and stands of birch trees would have been visited by the women at this time (Leighton, 1986:22).

Fishing provided food for the Cree year-round, but the catch tended to drop off during the coldest months of winter when fish sought deeper waters and became less active. With the early spring, fishing grew more productive and once again could be worth the effort of setting nets under the ice, particularly across lake narrows and those parts of stream channels where fish tended to be more concentrated (e.g. HBCA, B.91/a/3:14; Winterhalder, 1978:352).

What small game survived the winter also became more active as the weather warmed. Hare were caught in snares set across their runways through the snow, usually near the camps (Drage, 1982:21,22; Glover, 1962:31; Williams, 1969:26,27; Winterhalder, 1978:378,379,387). Grouse might also be snared, often along shorelines, in the stands of poplar and willow preferred by ruffed grouse (Drage, 1982:22; Glover, 1982:22; Williams, 1969:105,106). Beaver and sometimes muskrat were taken in this season as well. As the ice began to soften, the hunters could break into their lodges after setting nets, snares or fences of stakes below the ice to block their escape routes, and then kill them with clubs or spears (Brightman, 1993:9; Drage, 1982:20,21; Meyer, 1985:213,219; Rogers and Smith, 1981:133; Rogers and Taylor, 1981:232; Tanner, 1979:20; Williams, 1969:10). Small game, like fish, was probably brought back whole to the camp, where it would be cleaned and butchered by the women.

Large game was quite welcome when it could be found in this relatively lean season, as a single kill could provide enough meat to feed a camp for days to weeks. The early spring was a good time to seek out bear that were still hibernating in their dens (Brightman, 1993:8; Drage, 1982:19; Williams, 1969:28), and also for hunting moose and woodland caribou. This was one of the few times that it was reliably worth pursuing these animals into the bush once they began to run. The deep crusted snow characteristic of this season

was difficult for the deer to move through and they could not long outrun hunters who were on snowshoes. They were sought out inland where they yarded, or were tracked from shoreline, and then chased into deeper snows where they could be killed at close range (Brightman, 1993:8,11; Feit, 1987:77,78; HBCA, B.9/a/1:7; Orecklin, 1976:74,75; Rogers and Smith, 1981:132).

The northward migration of the barren-ground caribou in the early spring was an important event for Cree in those regions where the herds passed through, which sometimes included at least the northerly parts of the Southern Indian Lake area. Ahead of break-up, the caribou would leave their wintering range in the forest to migrate towards their calving grounds on the tundra (Gordon, 1981:2; Kelsall, 1968:138; Pruitt, 1960:21; 1967:97),[97] regularly taking three or more weeks to pass through any one point along their path (Kelsall, 1968:139). Although the most effective time to hunt caribou was in the early fall at open water crossings (Gordon, 1981:2,3), with careful observation and planning Cree could also in some years capture significant numbers of the northward-migrating caribou in the early spring. The caribou were often hunted communally at this time, and the hunters sometimes used drive lanes and corrals constructed out on the ice or along the caribou's overland highways, such as eskers, to help herd the animals towards the hunters (Brightman, 1993:8; Honigmann, 1956:35; Mason, 1967:12). The use of drive lanes was probably restricted to those years that a reasonably large number of caribou were crossing through the area and when enough people were present to make the communal hunt efficient and effective.

A spring caribou hunt could draw several families together and success would mean easy living for the assembled people for as long as the meat lasted. But a successful harvest of caribou also meant many busy days of butchering the animals and drying at least some of the meat if the spring was already too warm for it to be frozen, extracting grease from the bones by pounding them into bits, and maybe processing some of the hides for babiche.[98]

As temperatures grew warmer, preparations were made for the break-up. The break-up of ice on the rivers and lakes was a critical time in the boreal forest. The ice was no longer safe to walk across, while on shore the melting snow stuck to toboggans and snowshoes, making land travel difficult (Gardner, 1981:10; Meyer, 1985:200; Rogers and Smith, 1981:130,138; Tanner, 1979:28; Winterhalder, 1982:19). Because mobility would be restricted, it was good for families to be in a place where there were adequate resources to sustain them through the break-up.

Sometime before the ice became unsafe, families would have travelled to the break-up camp, usually in or near the same region where they had spent the late winter and early spring (Smith, 1981a:260). Break-up was often a hungry time, hunting made difficult by the people's limited mobility (Meyer, 1985:200; Winterhalder, 1982:19). If the camp location was well-chosen, however, at least sufficient food could normally be found relatively nearby. Among the best sites to spend the break-up were those near the earliest open water: faster sections of water such as rapids and falls, eddies, stream and lake narrows (Irimoto, 1981a:126; Tanner, 1979:28). The open water was attractive to the waterfowl migrating northwards through the region, and concentrations of swans, geese and ducks could predictably be found resting and feeding at these sites through the early part of the break-up (Hanks, 1983:351; Hearne, 1971 [1795]:286; Irimoto, 1981a:126; Norman, 1982:91; Rogers and Smith, 1981:137; Smith, 1975:180; Tanner, 1979:40; Winterhalder, 1978:453). Open water also drew other large and small game from the vicinity and made fishing simpler, making these locations even more desirable as camping places (e.g. Rogers and Rogers, 1959:137; Smith, 1975:180; Tanner, 1979:40; Winterhalder, 1978:405,430).

In addition to choosing a camp site in an area with sufficient local food resources, families would have to have enough firewood on hand to last through the break-up. This was best collected from the surrounding area before the thaw made this activity more difficult (Rogers, 1963b:51; Rogers and Rogers, 1959:137).

At the break-up site, while waiting for the waterfowl to arrive, and in those regions

over which few birds passed, families did what hunting, trapping and fishing they could near the camp, and supplemented this with whatever preserved foods that they had brought with them (Meyer, 1985:200; Meyer and Thistle, 1995:427; Winterhalder, 1982:19). Beaver and muskrat were often taken, as they became more active with the beginning of break-up. Beaver could be shot while swimming in the open water or trapped in snares or deadfalls placed by their lodges or on the deciduous shorelines where they fed (Brightman, 1993:9; Drage, 1982:20,21; Rogers and Smith, 1981:133; Williams, 1969:10; Winterhalder, 1978:430). Traps could be similarly set for muskrat in the open marsh areas along their paths through the reeds or on the muddy banks near their houses (Chansler, 1968:77; Meyer, 1985:213; Winterhalder, 1978:409). Being fish-eaters, otter could predictably be found in the water around rapids once fish started spawning there (Chansler, 1968:125; Rogers and Black, 1976:8), and they, too, were hunted or sometimes trapped in this season when they could be caught (Rogers and Rogers, 1959:137; Taylor, 1980:16). Other small game would have been snared or hunted around the camp when active in that area.

Gill nets could be set in places of open water. They would have been particularly productive for taking early spring-spawning fish like pickerel and suckers when set across stream mouths, at confluences, or at the base of rapids - places where these fish tend to concentrate while spawning (Ayles and Koshinsky, 1974:55; Glover, 1962:61; Rogers and Black, 1976:6,7; Rogers and Rogers, 1959:137; Weagle and Baxter, 1973:43,46,48; Winterhalder, 1978:255). Weirs could also be quite productive when built in shallow waters at the same sorts of locations (Lister, 1988:75; Snortland-Coles, 1979:105).

In the regions over which geese, ducks and swans did migrate in the spring, the waterfowl hunt could be of great importance all through, and sometimes after, the break-up. These hunts were often associated with ceremonies and feasting whenever people came together at this time (Linklater, 1993:91; Meyer, 1975:446; Rogers and Rogers, 1959:137). During the early part of the thaw, the birds would rest and feed at almost any open water along their migration paths. As more ice cleared away, waterfowl could be found more

predictably and in greater numbers around low, marshy shorelines of lakes and slower rivers and streams (Linklater, 1994:49; Snortland-Coles, 1979:103,104; Webb, 1974:12; Winterhalder, 1978:453). To hunt resting waterfowl, hunters often set up blinds or hid behind bushes and used calls or decoys to lure birds away from the others and into the range of their arrows or nets (Drage, 1982:18,19; Honigmann, 1956:36; Mason, 1967:13; Rich, 1949:118; Rogers, 1963b:43).

At exceptionally good sites for early spring fishing, waterfowling or moose hunting (for example, some in the Saskatchewan River delta), it was possible for large, regional groups to gather together even for the early spring, prior to and through break-up (e.g. Meyer and Hutton, 1998:95; Meyer and Thistle, 1995:418; Russell, 1991:97-99,104). Most of these regional band gatherings have been said to have taken place after the break-up, however, later in the spring or summer (Smith, 1981a:259). Somewhat smaller gatherings of families were likely to take place at the early fishing sites.

Among groups whose annual round of travels and activities brought them back in the early spring to the same region in which they had spent the freeze-up (if they had had reason to leave this region at all) canoes could be retrieved from where they had been cached over the winter in anticipation of that return. In many years, however, families were not able to re-use canoes and new ones would have had to have been made.[99] For these families, break-up was a time for making canoes, and the needed materials would have to be present at or brought to the break-up camp site (Brightman, 1993:11; HBCA, B.83/1/2:9; Meyer, 1985:425; Rogers, 1963b:51; Rogers and Black, 1976:29; Rogers and Rogers, 1959:136,137; Rogers and Smith, 1981:137; Russell, 1991:93; Taylor, 1980:16,17).

Large birch trees were sought out at this time of year. These were usually limited to rather local, known stands in well-drained, sheltered locations. Bark for the canoe coverings and other birch bark items, such as baskets, was cut and peeled from the trees, rolled, and, being fairly light, could be transported on toboggans to a place near the camp site where the

canoes could then be made (Black, 1973:80; Rogers and Smith, 1981:138; Tanner, 1979:37). In some times and places, suitable trees may not have been available in the region where a family would spend the break-up. In these cases, the bark could be collected or traded for at an earlier time and carried with them until it was time to make the new canoes (Taylor, 1980:17).

Because the wood for the canoe frames was heavier, it was important for the camp and construction site to be near a stand of good trees that could be cut for this purpose (Black, 1973:80). Spruce were commonly selected in this region (Rogers and Smith, 1981:138) in the absence of cedar, a preferred wood where available (Black, 1973:80). After wooden ribs were cut and shaped by the men and a frame was built from them, the women used softened spruce root fibres to sew on the birch bark cover. Melted spruce sap was then mixed with wood ash for a pitch that was used to waterproof the seams (Rogers and Smith, 1981:138; Taylor, 1980:9).

Canoe building was a co-operative activity in which several members of a family often participated (Burpee, 1973:42; Taylor, 1980:18). Still, it could take a couple of weeks to a month or more to finish the task (e.g. Burpee, 1973:42,43; Tyrrell, 1934:149-151), usually at least the duration of the break-up period. As soon as these canoes and their paddles were completed and enough ice had cleared away from the shorelines of the rivers and lakes to make more extensive canoe travel possible, families would normally begin the journey by water to their next camp (Brightman, 1989:156; 1993:11; Rogers and Rogers, 1959:137; Tyrrell, 1934:149). In preparation for this, winter equipment such as the toboggans and snowshoes which could no longer be used would be cached, and other equipment necessary for the journey could be made or repaired.[100]

Families could leave the break-up site by canoe as soon as the shorelines were relatively clear of ice, and could travel on to the various places where they would spend the later part of spring and the summer if their previous camp site was not adequate. Their first destination might have been a new camp nearer a marsh area out of which they had better

access to the main body of migrating waterfowl which they could continue to hunt as they had through the break-up. It may have been a fishing camp near a reliable spring fishery to take advantage of the spring spawning runs. Or they may have travelled directly on to a place which the band had agreed on the previous year for the spring or summer gathering (Martijn and Rogers, 1969:152; Rogers, 1963a:72; Rogers and Black, 1976:29,30; Rogers and Smith, 1981:137). In some years, people may have set off on longer journeys for meetings or trade with more distant groups of people.

Canoe travel was preferred at this time of year, even though extra portages were sometimes needed for getting around sections of rivers and lakes still choked with ice (Alcock, 1916:443; Brightman, 1989:156). This was because travel on foot through the full boreal forest was difficult and uncomfortable owing to the wet, sometimes boggy ground and thick brush, even without the biting insects which would come to plague the inland as summer set in. Walking across muskeg areas after the thaw was nearly impossible (Brumbach and Jarvenpa, 1989:110; Mallory, 1975:3; Martijn and Rogers, 1969:8; Mason, 1967:5; Rogers and Smith, 1981:135; Steegman, 1983:256; Winterhalder, 1978:313).

About the only places where extensive overland travel in the open-water seasons might be feasible would be the drier parts of more open forest patches, such as the jack pine forest on sandy ridges, and recently burned forest patches without too much debris remaining on the ground. Even these would additionally have to be accessible from the water (Hamilton and Larcombe, 1994:14; Mallory, 1975:3; Tanner, 1979:38). Accordingly, most walking over land by Cree people during the seasons of open water was for necessary portaging, tracking game and gathering plant materials; it was not often for extensive travel (Tanner, 1979:29).

Spring travel routes tended to follow the larger river systems and connecting lakes, rather than the smaller streams and inland lakes, i.e., those not directly on a major stream or river. In particular, those waterways with access to connecting travel routes and resource

harvesting areas were favoured (Tanner, 1979:38,40). Very troublesome routes, like the Lower Churchill River with its many rapids or shoals, would have been mostly avoided for canoe travel (Alcock, 1916:439,443; Wood, 1983:65).

Where rapids, falls and other difficult sections were unavoidable, the canoes could be portaged around that section. Depending on the landscape, a portage might cross nice dry ground, or difficult, swampy ground. The trail could be level or sloping. It might be along shore or far inland. Portages connecting two parts of the same water course were typically fairly short, while those connecting two different lakes or rivers could be a kilometer or more in length. Portages were as variable as the landscape, but normally began and ended in places where the contents of the canoes could be conveniently unloaded before removing the canoe from the water and then re-loaded after the other side of the portage was reached (for examples see PAM, MG1 B14, Ia). Along regularly travelled routes, the same portage trails were generally used over and over again and could become well known and quite worn (Downes, 1943:32; Rogers and Rogers, 1959:133; Wood, 1983:63).

Travelling downstream, it was possible to shoot some of the rapids, the travellers often stopping to leave an offering for safe passage before attempting the more dangerous sections (Brightman, 1993:116; Linklater, 1994:65,66,89; Riddle, 1994c:9). But shooting even minor rapids could damage the canoes and a stop would have been required at the downstream end so that repairs could be made anyhow (Tyrrell, 1934:185). Rather than portaging, canoes were also sometimes tracked over shoals or rapids - whatever was most convenient. Overall, though, fewer risks would probably have been taken when the whole family was travelling together than when the men were off alone (Mason, 1967:24; Tyrrell, 1934:199,355).

While travellers knew where to expect difficult stretches of water and could plan to portage around or otherwise deal with the problem area, sudden storms were less predictable. High winds created rough waters, and people were best to put up on shore and wait the storm out, sometimes in less than ideal camp locations (Drage, 1982:8; Steegmann,

1983:256). When travelling across the larger, shallower lakes which were susceptible to large waves, it has been suggested that people would have kept to routes which would have kept them sheltered from the worst of the winds and waves, and which required the least travel to the next, safer leg of the journey (Riddle, 1994d:24).

While travelling, regular rest stops were made at convenient and pleasant spots. After carefully guiding the canoe to the shore, a fire might be made and a bit of food and beverage consumed (Orecklin, 1976:116). On any trip that would take more than a day, travel camps would also have to be made nightly, and people would have to find something to eat if no game had been spotted and taken during the day's journey and if they did not want to eat only dried provisions. Because of this, travellers preferred canoe routes that offered reasonable fishing spots along the way and would try to set their camps at or near these places (Tyrrell, 1934:13).

While the women made the camp, the men could go about setting the nets to catch the morning meal, and, if there was game in the area, may have tried a little hunting. There was also firewood to collect, repairs to equipment to be made, meals to prepare, and those not otherwise occupied could always set some snares or throw a baited hook into the water.

Because they were only used for short periods, i.e., from one to several nights depending on the weather and the travellers' luck in the hunt, the same travel camps could be used regularly without much danger of depleting the local resources (Martijn and Rogers, 1969:150). In his journal, David Thompson made frequent mention of passing old camps where bare lodge poles stood (e.g. PAM, MG1 B14, Ia:144,155,163,164,165,168), waiting for the return of people who could drape the frames with the hide or bark covers which they carried with them and then camp there again.

The late spring season was a pleasant time. The weather was warming, the plants were greening and there were few bugs. Because of the more abundant resources available in the later part of spring, families could frequently reside together in larger groups than

they had in the leaner time before the break-up. For some bands, where resources allowed, this may have been the time for the annual gathering (Meyer and Thistle, 1995:418,421,425). Such gatherings could sometimes include individuals who had come from other regions as well (Meyer and Thistle, 1995:426), to trade or share information; members of Rock Cree bands in north-central Manitoba might similarly have travelled out to visit other regions for this purpose, themselves.

The members of a band would come together at an agreed on place to visit, trade, exchange information, game, dance, feast and carry out many of the year's other religious ceremonies. Marriages could be arranged, problems could be discussed, and plans made for the upcoming year. Together with the new plant foods, the fish runs and sometimes the end of the waterfowl migration were usually the primary sources of food for these late spring gatherings (Meyer and Thistle, 1995:406; Smith, 1981a:259,260).

Spring spawning runs were generally long and drawn out and could continue on for months into the early part of summer (Cleland, 1982:775). Enough fish could be taken from good fisheries at this time of year that many families could reside together while harvesting the runs (Mallory, 1975:5; Rogers and Black, 1976:7), a prerequisite for a gathering. Where these fish runs were the mainstay of the spring and summer diet, almost everybody would become involved in the fishing and in the processing and preserving of the many fish that were caught (e.g. Meyer, 1985:200; Smith, 1975:179; Steinbring, 1981:247). The busy industry of splitting and drying the catch would be set up on shore, possibly back at the camp,[101] and could dominate camp activity for the duration of the runs.

The spring spawners - pickerel, perch, suckers, jackfish and sturgeon being the most important - tended to migrate up-river. They predictably became very concentrated around river mouths and rapids for weeks while they were spawning. To take advantage of this bounty, the people would construct weirs or set gill nets across these places to catch large numbers of the fish (Ayles and Koshinsky, 1974:64,65; Glover, 1962:61; Hanna, 1975:11; Mallory, 1975:3,5; Orecklin, 1976:17; Rogers and Black, 1976:6,7; Snortland-Coles,

1979:105; Weagle and Baxter, 1973:43,46,48; Wood, 1983:24).

In addition to being taken in the nets and weirs, the giant lake sturgeon could also be speared or harpooned individually at the rapids of larger rivers (Glover, 1969:44; HBCA, E.3/3:26d; Martijn and Rogers, 1969:96; Mason, 1967:13; Orecklin, 1976:17; Rich, 1949:168; Rogers and Black, 1976:6; Williams, 1969:118), each sturgeon a major catch in itself. The spring brought fall spawning whitefish and lake trout closer to shore as well, and nets set along shallow lake margins could supply the people with these species as well (Cleland, 1982:767; Knight, 1968:14).

To provide relief from an all-fish diet, other game could be taken more opportunistically and was sometimes deliberately sought out. Most waterfowl had passed through the Southern Indian Lake region by the end of the break-up, but some stragglers and those breeding pairs which would spend summer nesting in the region - mostly ducks - could still be found in marsh areas and other calm shallow waters with aquatic vegetation (Webb, 1974:12,43). The nests could also be checked for early eggs which were sometimes collected (Anderson, 1961:18; Snortland-Coles, 1979:104).

Bear were sometimes taken at the rapids where, like people, they liked to fish in the spring (Rogers and Smith, 1981:132). Other large game were no doubt also hunted whenever the opportunity arose (Pettipas, 1980:185). Smaller game became yet more active in the spring warmth and would be easier to trap when this was desired or necessary. Beaver, muskrat and otter could continue to be taken as they had been during the break-up.

The role of plants grew as the season progressed. By the late spring new plant greens were abundant and this was the best time to harvest and eat these. Because many of the greens grew in shoreline or aquatic environments which people were already visiting for fishing and for hunting waterfowl and other game, families could combine these activities, rather than making a special trip for gathering the plants (Shay, 1980:259). It was also a good time to dig medicinal roots, before their sap began to run (Pettipas, 1979:42), to peel the bark from willows to use at the camp in making cordage for fishing nets, snares and

many other useful items (Leighton, 1986:42), and to collect more birch bark (Rogers, 1963b:52).

The spring probably saw an increase in the manufacture of other items as well. With the warmer weather, it would have been easier to dig and work clays for pottery-making, an activity best done on warm, dry days (Syms, 1977:63; Wood, 1983:27). Finding and quarrying stone sources for lithic tools was easiest after the snow and ice cover disappeared for the year (Syms, 1977:27), so although tools could be made from collected stone at any time they were needed, collecting the stone was most commonly done in the late spring through fall seasons.

Hide preparing was an activity which took place whenever game or furbearers with useful hides or pelts were taken. Certain steps of the process could be made easier by frosty weather which froze the hides, drying them more quickly (Brandson, 1981:16; Rogers, 1973:27; Smith, 1981b:279), but it would not have been too difficult in the later spring: it was warm enough to work comfortably with wet hides, but it was not so hot or buggy as to make the heavy work too uncomfortable, and the warm days could help dry the scraped and stretched hides (Nickels, 1997). This was not a season in which large numbers of mammals were normally being taken, so initial hide preparation may have been more limited than at other times. Still, there might be skins, partially prepared earlier in the year, which remained to be re-scraped and tanned/smoked (Rogers, 1973:30).[102]

Springtime was a period of "intensified spiritual activity" for the Cree (Brown and Brightman, 1988:140). The warm temperatures and lack of bugs made the late spring season an ideal one for the youths to make their dream quests. It was a time when they were allowed no fire, spending days or more in the open away from their families' camps, waiting in isolation for their spirit helpers to come (Brown and Brightman, 1988:140). In contrast, some religious activities, like feasting, were more communal and were often reserved specifically for times when the band could come together - the spring and summer gatherings providing opportunities for these events (Meyer and Thistle, 1995:425). The

Goose Dance, for example, was normally timed so that it could be held while families were gathered together for the spring waterfowl hunt, and for days the assembled people could sing and dance and feast together on the bounty of the spring harvests (Linklater, 1994:91; Mason, 1967:59,60; Meyer, 1975:435,446).

7.3 **Summer.**

Summer in the boreal forest was a time of relative ease and comfort. There was almost always plenty of fish, game, and plants to harvest, leaving more time for relaxation, socializing and other activities not directly related to the food quest (Norman, 1982:12; Rogers and Black, 1976:30). The weather could be very pleasant, although the occasional heat wave, not to mention the constant plague of biting insects in any sheltered area, would make the relief brought on by the breeze along exposed shorelines very welcome.

Because of the ample food resources normally available in the summer and the smaller amounts of dry firewood required, this was the time of year that people throughout most of the boreal forest could be the most concentrated, living together in larger groups. It was also the time that they could be most sedentary, able to live out of the same base camps for extended periods without having to move on to new areas (Brightman, 1993:9,10,247; Williams, 1969:171).

While in some areas bands could come together for their annual gatherings as early as the latter part of break-up, it was during the summer that most people would come to the selected meeting places for weeks to months of living and working in each other's company. They travelled to the agreed on places by water, along much the same routes and in the same way that they would have in the later spring; i.e., by canoe, mostly along the larger rivers and their connecting lakes (Tanner, 1979:40), portaging only where necessary. Travel over land was even less desirable now than it had been in the spring, because of the bugs.

The gatherings were often meetings of a whole regional band, which could include a

hundred or more individuals (Leacock, 1986:151; Meyer and Thistle, 1995:433,435; Rogers, 1963a:76; 1966:31), and sometimes more than one regional band would come together for a time (Meyer and Thistle, 1995:426) to trade and to discuss matters of mutual concern. Some individuals or groups may have travelled great distances to attend the gatherings of peoples far away. This is one way in which 'exotic' trade materials could have come into the boreal forest of north-central Manitoba; either people travelled to distant locations to meet with others for trade, or they welcomed visitors from afar. Items from very far away might also have been traded along between neighbours, from group to group.[103]

The number of people who could gather at a place and the length of time which they could all stay there depended on the quantity of food and other exhaustible resources available in the vicinity (Rogers and Smith, 1981:135). At a particularly rich summer site, a large group of people could remain for up to three months (e.g. Meyer and Thistle, 1995:428; Smith, 1981a:260).

The best locations for large summer gatherings were near good fisheries and along the major water routes, on the breezy shorelines of lakes or sometimes rivers (Brightman, 1993:10; Leacock, 1986:147,151; Martijn and Rogers, 1969:94,152; Rogers, 1963a:71; 1966:29; Rogers and Smith, 1981:135; Smith, 1975:179; 1981a:260). As long as there were enough accessible resources to support the population, the same gathering places could be used repeatedly for many years (Rogers, 1963a:71). Harvesting often had to be spread out a distance from the camp to avoid exhausting the local environment, however (e.g. Rogers and Rogers, 1959:138).

Fishing, which provided congregated families with so much of their food during the summer months, was most productive in the early part of the season, before the mid-summer heat sent fish into deeper waters (Cleland, 1982:767; Winterhalder, 1978:352). When the fish were still concentrated in the shallower waters, weirs could be effective, and the sturgeon - returning from their spawning runs up the rivers - could be speared in the

shallows (Rostlund, 1952:11). By mid-summer, however, the weirs and spearing platforms had to be mostly abandoned, as there were relatively few fish to be found close to shore (Rostlund, 1952:101,105). Nets, set close to shore in the early summer and later in deeper waters (Cleland, 1982:767; Peristy, 1989:88; Weagle and Baxter, 1973:65), were the most reliable way to get the many fish needed to feed the people (Hanks, 1982:111). When these failed, greedy jackfish could almost always be caught in the weedy shallows with a baited hook (e.g. HBCA, E.3/1:62d).

Most fish were fairly randomly distributed during the summers, and, with the exception of the jackfish, not very predictable (Wood, 1983:24). Nets were best set in those places where the fish tended to be naturally concentrated in any season. This included the bases of rapids and falls (e.g. PAM, MG1 B14, Ia:156), stream mouths and confluences (e.g. PAM, MG1 B14, Ia:157), lake and river narrows, and the eddies around points and small islands (Winterhalder, 1978:352).

Although these summer nets sometimes had to be set several kilometres from the base camp, they had to be checked each day or else the caught fish might rot in the warm water (Rogers, 1963b:52; Rogers and Rogers, 1959:138; Winterhalder, 1978:353). On shore, the fish were cleaned, and any surplus was split and dried on racks constructed back at the camp as it had been in the spring, to preserve it for a later time (Martin, 1989:598; Smith, 1975:179). The catch would rarely be as great as during the spawning runs, however, and the fishing and fish preserving activities would have taken less time and manpower to carry out, leaving people freer to do other things.

While summer was a season for leisure, it was also a good time to make and repair the tools and items that were used from day to day. Tools of stone, bone, antler and wood were manufactured as they were needed. Women could visit together while making clay pots (Syms, 1977:647; Wood, 1983:27). Baskets could be made. Cordage could be plaited from willow bark, spruce root and other suitable plant fibres and used in turn to make new fish nets and lines, nets for trapping birds and small mammals, woven bags, snares, rope,

lashings for tools and many other important items (Evans, 1969:7; Rostlund, 1952:100). Hides could be stretched, scraped and smoke-tanned (Nickels, 1997; Rogers, 1963b:53), and tent covers, carry sacs, footwear and clothing sewn from these and carefully decorated. Before any of this could be done, needed materials not already on hand had to be collected. For example, stone had to be quarried, clay dug and granite cobbles broken down for pottery temper; wood, bark and other plant fibres had to be gathered; and large game caught.

Moose were the most important large game of this season, although fish and plant foods probably made up most of the summer diet (Mason, 1967:28; Rogers, 1963a:71; 1963b:52; Rogers and Rogers, 1959:138; Rogers and Smith, 1981:135; Shay, 1980:260; Smith, 1975:179). Women, youths and elders did most of the summer fishing and gathering (Brightman, 1993:8,262; Martijn and Rogers, 1969:103; Rogers, 1963a:72; Williams, 1969:178), leaving the hunters more time to take advantage of the summer heat and bugs which drove moose into the water, making the animals predictable and relatively easy to find.

Moose spent a lot of the summer days wading in shallow bays and marshes, feeding on the aquatic vegetation, so the men scanned the shorelines from the water for signs of moose and paddled into likely feeding areas to check for recent tracks (Boulanger, 1971:51; Orecklin, 1976:74; Winterhalder, 1978:313). If the tracks were very recent, or if a moose was seen and startled inland, the hunters may have tracked the moose back into the bush (Meyer, 1985:200). In this season, however, it was normally simpler to wait near the tracks for the moose to return to the water and to surprise them there, as they often come back to the same place to feed (Knight, 1968:9; Winterhalder, 1978:297,313). Sometimes dogs were used to drive the moose back towards the waiting hunters (Mason, 19647:12). Moose were usually hunted in the summer by pairs of individuals using bow and arrow (Rogers and Smith, 1981:132).

In contrast, caribou were hardly ever hunted by the Cree during the early to mid-

summer months. The barren-ground caribou remained mostly north of the treeline until at least August, and the woodland caribou preferred to stick to the muskeg areas of the forest to feed and rest. Even if hunters were willing to travel through the bush in the summer, the muskeg was very difficult to move over and the caribou were more difficult to catch on this terrain than the effort was normally worth, especially if other game could be got more reliably (Winterhalder, 1978:325).

Comparatively easy game in the summer were the waterfowl resident along the shorelines of some lakes and rivers. Until the eggs hatched, waterfowl could be shot or snared in the marsh areas where they nested, and eggs could be collected. Around mid-summer, the parents would lead the young away from the nests to new marshy shorelines to feed. At this time they were moulting and flightless, and hunters could net or club them on the shorelines (Honigmann, 1956:36; Snortland-Coles, 1979:104).

All through the summer, grouse, hare and other small game could be snared or shot around the camp (Rogers, 1963a:71; Smith, 1975:179), and beaver were sometimes taken in the open water near their lodges (Brightman, 1993:9; Burpee, 1973:17). Small game were generally relied on far less heavily than in the winter months, so they were probably rarely depleted from the local area, in spite of the length of time families tended to stay in the same place during the summer. Extended hunting trips away from the base camp were rarely necessary in this season (Meyer, 1985:204).

Plant foods were important supplements to the diet in any season, but were most enjoyed in the summer, particularly in the mid-summer heat when game could become less palatable (Shay, 1980:260; Winterhalder, 1978:129) and fish were somewhat more difficult to catch. In the early part of summer, fresh greens and flowering parts were harvested. By summer's end, the seeds, roots and berries of most edible plants were in season (Shay, 1980:244, 260), and many medicinal plants were at their most powerful, especially roots (Pettipas, 1979:42; Zieba, 1990:64).

Well-chosen summer camps would have extensive access to the marshy shorelines,

moist forest and recent burns favoured by many of the plants collected for food and medicine. These habitats are common in the boreal forest, but during the gatherings the harvesting areas could be some distance from the camp, as very local patches would be quickly used up if a large group of people were regularly collecting from them over the summer. Sometimes it was necessary for other reasons to harvest plants away from the camp. This included those plant medicines which worked only when collected from a 'clean' place, away from people's day to day activities, for example (Zieba, 1990:61).

The gatherings were important for maintaining social, political and spiritual ties among the members of the band, as well as their sense of community and group identity (Meyer and Thistle, 1995:406), and they were events no doubt enjoyed and anticipated by the people in most years. But it was not necessary or even practical for all of the families to remain at the gathering site for the whole summer season, and in some times and places this may not have been possible. The size of the gathering would have dwindled as the weeks passed, smaller groups of families moving on by water to other summer fishing sites (e.g. Meyer and Thistle, 1995:428).

7.4 **Fall.**

By the end of the summer most of the gatherings had dispersed as people began to travel to the places where they would spend most of the fall hunting season in smaller groups of a few related nuclear families (Martijn and Rogers, 1969:150; Rogers, 1963a:71; 1966:29; Smith, 1981a:259). The fall, like the spring, could be a season of extensive travel over the water by canoe, and the groups tried to reach the wintering area before freeze-up forced them to abandon this convenient mode of transportation (Rogers and Rogers, 1959:133; Rogers and Smith, 1981:135; Smith, 1981a:260).

As in the spring, temporary travel camps had to be made nightly along the shorelines of the route followed. Old, familiar camps were often used when high winds did not force the travellers to put up on shore in less desirable places, as happened from time to time (e.g.

Downes, 1943:35). Ideal fall travel camps were located near good fishing sites where the nets could be set nightly - such as stream mouths, rapids, and off of islands - and by berry patches (Martijn and Rogers, 1969:153; Rogers and Rogers, 1959:132,133).

Plant foods were prominent in the early fall; seeds, nuts, roots and berries were all mature and ready to be harvested (Shay, 1980:244). Berries were probably the most enjoyed plant food, and they could be preserved for use through the winter as well, so they could certainly influence peoples' choices of where to camp in this season. While travelling, families often stopped at recently burned patches of forest and other places where the blueberries grew thick. They would also make day trips out to these places once they were set up at their fall base camps. Cranberries, saskatoons, wild cherries, currants and others were also picked when found (Black, 1973:75; Glover, 1962:59,60; Leighton, 1986:26,27; Linklater, 1994:85; Meyer, 1985:205; Rogers and Black, 1976:11,23,24; Shay, 1980:260; Winterhalder, 1978:469).

Berry patches were often located somewhat inland. Besides tracking moose and other game, berry picking was one of the few activities of the warmer part of the year for which people would travel over land (Orecklin, 1976:138; Tanner, 1979:29). Fortunately for the people, the insect plague was usually minimal by the time most berries ripened in the late summer to early fall, and the recent burns and other open areas favoured by many of the desired berries were relatively easy to move through, once reached.

Visiting the berry patches could feed people in other ways. Humans were not the only beings attracted by the plentiful fruit. Bear were commonly found feasting in these places and were sometimes shot or trapped in snares or deadfalls by hunters who knew to expect them there (Rogers, 1963b:41; Rogers and Smith, 1981:132). Although infrequently taken, bear were desirable game in the fall, their meat rich with fat that could be stored by the people for use in the winter and their furs were excellent for warm winter bedding (Anderson, 1961:107; Boulanger, 1971:48; Knight, 1968:11). Spruce grouse also liked to feed in the berry patches in the fall and were commonly snared there by people camping in

the area (Williams, 1969:105,106).

By the time the Cree had begun to disperse and travel towards their fall camps, barren-ground caribou could sometimes be hunted again, as they started to migrate back towards their winter territory around the end of summer, usually reaching the treeline by the end of August (Kelsall, 1968:64). It was at this time of year that caribou hides were at their best and their meat was starting to get fat again (Harper, 1955:57; Kelsall, 1968:131). Because they had to cross open water in this season, their paths of travel were more predictable and the hunt more reliable than after the freeze-up (Gordon, 1981:3). In those regions where they could be found, this was the best time to hunt caribou.

Most of the barren-ground caribou remained spread out on the barrens side of the treeline from the time of their arrival in late summer until the October rut. But according to some observers, sometime near the end of August segments of the population would herd up and push south into the northern forest before turning back towards the end of September to return to the southern barrens for the rut (Harper, 1955:18; Irimoto, 1981a:15; Kelsall, 1968:107; Smith, 1978:71). In recent decades, this pre-rut southward migration has been almost an annual occurrence in some locations (including the Nijanilini Lake region in northern Manitoba), but far more sporadic elsewhere. The distance into the forest travelled by this vanguard varies but can be up to a couple hundred kilometers (Kelsall, 1968:64) and, in certain years, may have taken caribou into the regions occupied by the Cree (W. Pruitt, 1998: personal communication). [104]

When they became aware that caribou would be passing through nearby, groups of hunters could wait for the herd to come to anticipated water crossings along the apparent migration path and ambush them there, spearing the swimming caribou from the canoes (Brightman, 1993:8; HBCA, B.83/a/2:4; Orecklin, 1976:75). Possibly, some families would have travelled north into the northern transitional forest in order to intercept this migration, as more recent hunters have sometimes done in the later fall and early winter (e.g. McInnes, 1913:8).

Woodland caribou, more important closer to the Hudson Bay coast (Glover, 1962:86,87), also underwent some limited migrations in the early fall, travelling slightly northwestwards (Parker, 1972:18) and from muskeg areas to higher ground (Banfield, 1974:385; Winterhalder, 1978:206). At this time they could have been hunted at water crossings like the migrating barren-ground caribou (Mason, 1967:12), although typically in smaller numbers. Throughout the rest of the fall, however, the woodland caribou were more dispersed and behaved much like moose, and so were hunted similarly (Orecklin, 1976:75).

Regardless of whether the caribou made an early appearance or not, early fall was, in more recent times, a time for the people to build up stores of surplus food, drying or freezing berries, fish, fowl and game to save for the freeze-up and the leaner winter season (Honigmann, 1956:44; Mason, 1967:78; Orecklin, 1976:73,122; Rogers and Rogers, 1959:134; Rogers and Smith, 1981:135), and similar food preservation was probably practiced, although probably less intensively, in the days before the fur trade.[105] Much of this food would come from harvesting the fall spawning runs of the whitefish and from berry picking. Migrating waterfowl and rutting moose would also be very important game when and where they were available (Brightman, 1993:8; Mason, 1967:28; Orecklin, 1976:74; Pettipas, 1980:222; Rogers, 1963a:71; Shay, 1980:260; Tanner, 1979:20,38; Winterhalder, 1978:460).

Fall hunting camps were thus set up in areas with access to the places where these plants and animals could be found. In particular, they were usually within a couple of kilometers of a good fishing site (Martijn and Rogers, 1969:150; Rogers, 1963a:71; 1963b:47; Rogers and Rogers, 1959:133). Because many of the fall food resources could be quite concentrated in predictable locations, the same general areas were frequently returned to each fall. The same camp sites could also be re-used if the local resources were not exhausted from previous years' harvesting (Rogers, 1963a:71; Rogers and Rogers, 1959:133).

These camps were sometimes occupied by only a few related families. At other

times enough migrating caribou, waterfowl or fish would be concentrated in an area for a time that another, minor gathering of band members could take place before the freeze-up (Linklater, 1994:91; Meyer, 1985:446; Meyer and Thistle, 1995:428). In areas over which southbound waterfowl passed, for example, groups could come together for intensive waterfowl hunting in the marshy areas where the birds liked to rest and feed, (Meyer, 1985:210; Orecklin, 1976:135).

The geese and ducks that summered north of the boreal forest made their brief appearance on the lakes of north-central Manitoba around the beginning of September (e.g. HBCA, B.91/a/3:1d). Because the fall migrations were so concentrated as compared to those of the spring (Russell, 1975:422), the bountiful waterfowl hunt could be over in a matter of a few weeks. On Southern Indian Lake, this short period was about the only time of year that geese could be found in large numbers (Moffatt et al., 1973:30), and they could be quite localized - congregating especially at the northern end and similar locations where extensive grassy shoreline or marsh existed (Bellhouse, 1971:8; Hanna, 1975:11; Webb, 1974:46). The local abundance of waterfowl and the assembly of larger groups of people that could come together to hunt them made this another good time to have feasts, and the Goose Dance could again be held (Linklater, 1994:91; Meyer, 1985:210,446).

Already set up near marsh habitat for hunting the waterfowl, those people not actively involved in the hunt could take the opportunity to harvest the starchy roots of wetland plants such as bulrush, cat-tail, water parsnip, and yellow pond-lily (Shay, 1980:269,270, table 15). Others could set and tend snares and deadfalls for the muskrat which preferred the same sorts of marshy shorelines as the waterfowl. Muskrat were most numerous and readily trapped and hunted in the fall before and during the freeze-up (Chansler, 1968:74,78; Meyer, 1985:213; Rogers, 1963b:42; 1973:54; Snortland-Coles, 1979:103; Winterhalder, 1978:221,405).

While after waterfowl in the wetlands, hunters also sometimes had the chance to take moose (Winterhalder, 1978:460). As with the caribou, the fall period before freeze-up was

the best time to hunt moose; their hides were in good condition, and they were at their fattest. The extra fat was put on for the rut which typically lasted from around mid-September to mid-October (Orecklin, 1976:74; Peterson, 1955:93,98). During the rut, moose were less wary than at other times, and more vocal, making it easier to locate them. It was also the only time that they could be lured out by people imitating their calls or by rattling antlers or branches to mimic the sound of fighting bulls (Brumbach and Jarvenpa, 1989:272; Orecklin, 1976:74; Rogers, 1963b:40; Winterhalder, 1978:320,321).

The hunters could canoe along the shorelines, listening and watching for the moose. Moose came to the shallow waters to feed on aquatic plants in the fall just as they did in the spring and summer, and once a moose was heard or seen, the hunters could wait at the shore near that spot and call the animal out from the bush into the open where they could shoot it (Orecklin, 1976:74; Rogers and Smith, 1981:132; Winterhalder, 1978:312,313,321). In some cases, hunters would track moose inland after hearing them call or finding fresh tracks (Brumbach and Jarvenpa, 1989:272), but in this season they again more often just waited for the animals to come to them.

Where moose were more abundant in this season, they could provide plenty of meat, hide, sinew, antler and bone for the people to use for food and raw materials. The moose hunt could be quite intensive during the rut (Brightman, 1993:8; Orecklin, 1976:74) and special moose hunting camps were often established if the earlier fall base camp was not already in preferred moose habitat. At these camps, the meat of the butchered moose could be cut into strips and dried and the hides processed into both rawhide and tanned leathers (Meyer, 1985:209; Rogers, 1963b:21,25).

The most predictable and dependable animal food source in the fall, however, was the spawning whitefish. These desirable fish usually began to migrate around the middle or end of September, congregating mostly off of rocky islands and reefs or over other shallows with rock, gravel or sand bottoms. In some locations, including the northeast end of Southern Indian Lake, the whitefish would continue on out of the lakes to spawn over

shallow, clean-bottomed sections of streams - commonly at rapids (Knight, 1968:14,15; Peristy, 1989:88; Rogers and Black, 1976:6; Rogers and Smith, 1981:133; Weagle and Baxter, 1973:65; Williams, 1969:122; Winterhalder, 1978:254).

The fall spawning runs, in general, were even more concentrated and of shorter duration than those in the spring, lasting weeks rather than months. In order to take best advantage of the wealth of whitefish available for this short time, mass harvesting was important, as was the co-operation of several families gathered at a fishery (Cleland, 1982:775). This would allow the women to concentrate on cleaning, splitting and drying the often large catches while the men tended the nets or weirs.

Gill nets were often set around the islands and reefs, while both nets and especially weirs could be set in the shallow waters at stream mouths and across rapids (Orecklin, 1976:71; Peristy, 1989:88; Rogers, 1963a:69; Rogers and Black, 1976:6; Rogers and Rogers, 1959:134). Both of these technologies were effective for taking large numbers of migrating fish in a short time (Rostlund, 1952:81,89,101; Smith, 1978:72), making the time spent in their construction well worth the effort for anyone regularly involved in fishing the spawning runs. Because of the potentially large catches, nets had to be checked daily (Rogers and Rogers, 1959:134) and weirs had to be cleared out several times a day (Meyer, 1985:213).

Although less commonly than whitefish, other fall spawners like lake trout and cisco could also be taken in nets and weirs while they migrated towards the offshore shoals of islands and reefs, or at the mouths and rapids of tributaries (Rogers and Rogers, 1959:134; Williams, 1969:124). Most other fish also became more mobile and approached the shallower waters with the end of the summer heat. Many of the spring spawners could thus be taken again in the fall, if not so reliably as in the spring. Jackfish, for example, were often caught in nets set for the whitefish (Glover, 1962:93; Knight, 1968:14), and suckers sometimes got caught in the weirs set up across shallow streams (Rogers and Black, 1976:6). Even the reclusive sturgeon could be taken again in the fall, in the nets or weirs, or

with spears, as they came again into near-shore waters (Holzkamm et al., 1991:123).

Sometime not long before freeze-up, the families would often disperse again, travelling by canoe to the places where they would set up their early winter camps at which they could wait out the freeze-up if they were not already at suitable sites (Rogers, 1963b:48; Rogers and Rogers, 1959:135). On arrival, families set up their base camps and spent much of the following days to weeks collecting and preparing materials and items that they would need for the winter, retrieving items cached in the spring if these were nearby. The lodges were set up, fresh spruce boughs laid down on the floors, and the hearths made. Other camp structures like drying racks, hide stretching frames and caches were built, snares set around the camp for hare and other small game, and plenty of firewood collected. Once the waters began to freeze, the canoes and paddles could be stored away, as could any other summer equipment no longer needed (Rogers, 1963b:48; Rogers and Rogers, 1959:135).

In addition to the stores of food and firewood, plant materials which could not be collected easily after the freeze were also gathered up in large amounts at this time for the winter. For example, women would collect sphagnum mosses from the edges of nearby muskeg patches. Hung to dry from tree branches or drying racks, the moss became very light and would keep until needed or until it had to be carried away to the next camp (Ahenakew and Wolfart, 1992:15; Leighton, 1986:50).

This was also the last relatively easy time to collect clay and make pottery, an activity which became increasingly difficult as temperatures dropped (Syms, 1977:29,63; Wood, 1983:27). Mining cobbles from riverbeds and other stone from outcrop for making tools would also become more difficult after the ice and snows returned (Syms, 1977:27). Good lithic materials were probably collected throughout the warmer seasons and carried along or cached away, sometimes already roughed out into tool pre-forms, to be finished as they were needed.

Presently, the fall freeze-up of the lakes and rivers occurs in the Southern Indian Lake region between roughly mid-October to mid-November in most years. The rivers take a couple weeks longer to reach a safe thickness for travel than do the lakes, and in some locations of faster water, the ice may not freeze at all (Cleugh, 1974:19; Penner, 1974:4,7,80). While it was possible to travel over the rivers by canoe for some time after the beginning of the freeze-up, breaking up thin ice with the paddles (e.g. Tyrrell, 1934:187), the ice would soon become too difficult to canoe through, while remaining too thin to walk over. Travel could continue over land on foot, but walking through bush was rarely easy in the boreal forest, and no major water crossings could be safely made (Rogers and Smith, 1981:135; Tyrrell, 1934:187). It was better to be at the late fall/early winter camps ahead of the freeze-up, and most families tried to do this.

With travel limited for a number of weeks during the freeze-up, collecting, hunting, trapping and fishing activities were limited to those which could be carried out in the more immediate surroundings of the camp (Gardner, 1981:10; Meyer, 1985:200; Pettipas, 1980:185; Rogers and Black, 1976:29; Rogers and Smith, 1981:131; Winterhalder, 1978:19). As during the break-up, it was important to have a good store of preserved foods and firewood at this time, and preferably to be in locations with sufficient local resources present (Rogers and Black, 1976:29). Islands were probably not advisable places to camp during these periods of unsafe ice.

The fall spawning runs were dwindling around this time but could still be productively fished wherever the water remained open or the ice had already become thick enough to walk on (Ahenakew and Wolfart, 1992:147). Beaver and muskrat were also frequently taken in the fall around the time of the freeze-up, in deadfalls and snares, so it was good to make the late fall/early winter base camps near the beaver lodges and the muskrat marshes (Snortland-Coles, 1979:103; Winterhalder, 1978:430).

Towards the end of freeze-up, the last of the whitefish and other fall spawners were

returning to the deeper parts of the lakes. By the month of November, nets could be set under the ice on the lakes to continue catching these fish (HBCA, B.91/a/3:5d; Williams, 1969:122). By this time, fish and other foods could simply be frozen and cached, so that less time and effort had to be put into the preservation of any surplus than during the warmer seasons.

As before the freeze-up, this continued to be a good time to capture small game around the camp. It was an easy time to snare hare in their preferred habitats, as the hare were very numerous and active at this time of year, and their runways were quite visible in the new snows (Rogers and Black, 1976:10; Winterhalder, 1978:378,379).

This was also about the best time of year to hunt beaver and muskrat. Their meat was fat and their furs of fine quality, and they could be predictably found inside of their houses which were just beginning to get iced over. After setting nets or snares across any escape routes from the houses, hunters could break into the tops of the lodges with axes or adzes and then club or spear the animals inside (Brightman, 1993:9; Jarvenpa, 1980:112; Meyer, 1985:213; Snortland-Coles, 1979:103). Although hard work, the returns were at least reliable.

Large game was less reliable at this time. With the freeze-up, moose tended to move farther into the bush and spent less time along the shoreline (Snortland-Coles, 1979:103). They had to be tracked, and having sensitive hearing, the moose were difficult to get close enough to for the kill except on blustery days when the wind would mask the sound of the hunter's movements (Boulanger, 1971:51). The late fall and early winter could accordingly be a difficult time to find and capture moose and the similarly behaving woodland caribou.

In contrast, the barren-ground caribou could be quite important during the weeks after the freeze-up. Although it was the initial movement of the herds across the treeline in the earlier fall season which was most effectively harvested, being the time that they could be ambushed at the open water crossings (Gordon, 1981:3) and a time at which they were quite concentrated (Harper, 1955:19), this vanguard did not often travel farther south than the

northern parts of the transitional forest (Irimoto, 1981a:15; Smith, 1978:71). It was the second migration, normally following the first good snow (Irimoto, 1981a:15; Kelsall, 1968:171; Smith, 1978:71), when the Cree would have had the most opportunity to hunt southward migrating barren-ground caribou.

In those years that the migrating caribou made an appearance in a region accessible to Cree (probably rarely before freeze-up),[106] the families in those areas could move to intercept the animals at a place along their apparent or anticipated path. Families may also have travelled northwards in the fall or early winter in anticipation of this caribou hunt (McInnes, 1913:8). In the Southern Indian Lake region, for example, it has been suggested that families could have gathered together at the northeast end of the lake to harvest the spawning whitefish that were so concentrated there in that season, and to wait for the barren-ground caribou which often passed through that area (Wood, 1983:79). In some years this may have occurred early enough to allow these families to hunt migrating caribou at open water from canoes, but often they would have more likely been hunting caribou over ice or on land.

7.5 **Winter.**

As the cold set in and the snows deepened, most of the creatures of the northern lakes and forests would disperse for the winter, and so would most of the Cree people (Steegman, 1983:255). Aside from those larger groups which could remain together for weeks to months following an exceptionally good hunt or harvest (Brightman, 1993:10; Helm and Leacock, 1971:347; Martijn and Rogers, 1969:98; Wood, 1983:78), families were spread out fairly widely over the wintering places. Typically, a few related families would spend much of the winter together making up a more or less isolated group.[107]

These families faced moving camp several times over the course of a winter. With the scattering of game, local food resources around the camps could be exhausted more quickly and people had to travel farther and farther in order to find what they needed

(Martijn and Rogers, 1969:152; Rogers, 1966:29; Rogers and Smith, 1981:135,137; Rogers and Taylor, 1981:232; Tanner, 1979:73; Williams, 1969:171). In the winter months, with the cold and the lack of canoe travel, hunters preferred to search out their game within a few kilometers of camp whenever possible (Rogers and Smith, 1981:135,137; Tanner, 1979:73). Temporary camps could be set up farther out from which they could take fish and game if this was more than a day's distance away from the base camp (Norman, 1982:15; Rogers and Smith, 1981:137). At some point, however, necessities like firewood and the small game that sustained families while the hunters were away would also be used up locally, and at least a short camp move would have to be made.

Winter travel was made on foot, with the aid of toboggans and snowshoes once the snow became deep enough. The journeys were made mostly over the ice of frozen rivers, streams and lakes, these still being the most convenient travel routes for the Cree, although people could also walk over land with less trouble in this season; the muskeg areas were frozen in the winter and, being only sparsely treed, were relatively passable (Brown, 1986:213; Brumbach and Jarvenpa, 1989:110; Fiddler, 1985:106,109; Hanks, 1983:351; Honigmann, 1956:52; 1981:221; Ives, 1982:110; Martijn and Rogers, 1969:126; Orecklin, 1976:34; Tanner, 1979:29,38). Even when frozen, though, the rough, uneven surface could make travel across muskeg quite tiring (Boulanger, 1971:15).

The larger rivers and connecting lakes that made up the major travel routes through boreal regions could be important in any season, but winter travel often took people down the smaller rivers and streams to the 'inland' lakes as well. In warmer winters, these may have been even more important for travel, as the faster rivers did not always freeze very solid and would require many overland portages in order to get around weak or open spots (Tanner, 1979:38,40). With the ground frozen, it was also easier to make long portages between lakes or neighbouring rivers in the winter (Tanner, 1979:38).

Winter travel was made slowly, especially when whole families were travelling together, as for camp moves. The cold could quickly take its toll on energy levels, and stops

had to be made frequently. A fire would be made, and the people could eat and drink a little while warming up and taking their rest. Travel was also restricted, when possible, to the warmer, brighter parts of the day (Martijn and Rogers, 1969:87; Rogers, 1963b:50; Rogers and Rogers, 1959:136; Steegman, 1983:257). Winter travel camps would be considerably closer together than those used in the spring through fall as a result and would often be struck at almost any suitable site along the route and out of the wind. People were not so likely to look for old camps as they were in other seasons (Martijn and Rogers, 1969:150), but sites were probably still re-used when convenient.

On arriving at a new camp, some ground was cleared and the tents were set up out of the wind and lined with spruce boughs collected from around the site. Firewood was found and the hearths made. Fish nets were set under the ice whenever this was practical, often quite close to the camp, and snares were placed around the camp area for small game (Rogers, 1963b:51; Rogers and Rogers, 1959:136). Huge amounts of firewood could be used during the winter months, and much time and energy went into gathering dry wood from the bush around the camp on an almost daily basis (Martijn and Rogers, 1969:150; Orecklin, 1976:66; Rogers and Rogers, 1959:135,136; Tanner, 1979:60).

Water in the winter was less immediately accessible than during warmer months, but snow and ice could easily enough be melted over a fire in clay pots, watertight bark baskets, or bags made from animal stomachs, bladders or hides. It was also possible for people to take water from holes made in the ice, from springs, or from other sites of open water (Glover, 1962:36; Honigmann, 1956:40; Irimoto, 1981a:109; Rogers, 1973:75).[108]

More time was spent in the camp in the winter than in other seasons, especially during the coldest months when frigid winds could sometimes keep people from venturing outdoors very much for many days at a time (Rogers and Rogers, 1959:60; Smith, 1981a:260). There was work to be kept busy with in camp, however. At the beginning of winter, before the snows became deep, the toboggans and snowshoes had to be made if they had not been retrieved from caches where they were left some previous spring (HBCA,

B.91/a/3:6). Fish nets were regularly in need of repair. Tools and household items could be repaired, or newly made, from materials collected when and where they had been available, sometimes months earlier. New hides and pelts could be prepared. Moccasins, mittens and other items of clothing were made, decorated and mended. The hearth fire was kept burning. By mid-winter, outdoor activities could be so restricted that boredom could quickly set in. Gaming and story telling would have filled many winter days and evenings. The stories, which were meant to teach as much as entertain, were in some cases specifically reserved for the winter months (Mason, 1967:59; Rogers and Rogers, 1959:135,136; Smith, 1981a:260).

Throughout much of the winter, however, it was possible to go out from the camp to hunt, trap, fish, and to harvest what plant materials remained available. Preserved foods were also relied on fairly heavily in this season, but large enough stores to last all winter long were not normally accumulated (Brightman, 1993:246; Mason, 1976:12).

Wherever it was available, large game hunting was considered to be the most important subsistence activity of the winter, including the earlier months (Meyer and Thistle, 1995:427; Pettipas, 1980:197; Smith, 1981a:260; Tanner, 1979:51). Moose, woodland caribou, barren-ground caribou, and bear were all winter residents of the northern forests and where they were abundant, people could live reasonably well, able to live for up to several weeks off the flesh of a good sized animal.

In those parts of the Cree territories where they wintered, such as around Reindeer Lake and sometimes Southern Indian Lake,[109] barren-ground caribou could be the most important winter game (Mallory, 1975:3; Smith, 1975:178), although they were most easily taken in large numbers during their migrations. Once in their wintering range, caribou tend to disperse and spend most of their time in small groups feeding inland along the shorelines in climax spruce or pine forest areas and resting out on the ice (Banfield, 1974:4; Harper, 1955:4; Heffley, 1981:134; Irimoto, 1981a:39; Kelsall, 1968:133; Pruitt, 1960:19,37;

1967:92; Rogers and Smith, 1981:132). Having reached their winter range, caribou slow their movements significantly, travelling continuously, but only a little farther each day to feed in untrampled parts of the forest adjacent to the frozen water body on which they rested. This gradual shifting of feeding places could eventually take the caribou on to a new water body, but commonly a group of caribou could be expected to remain in the same general area for a month or more (Burch, 1991:442; Kelsall, 1968:68,69; Pruitt, 1960:19).

It was occasionally possible for people to herd these smaller aggregations of caribou through minor drive lanes constructed out on the ice in order to hunt them communally as they more often did during the migrations (Honigmann, 1956:35). This would have been especially useful in the earlier winter months, when caribou moved easily through the still shallow snow and eluded most hunters. However, several families working in co-operation were needed for such a hunt, and the effort of constructing drive lanes was probably only worthwhile when a good sized group of caribou were present.

As the winter progressed and the snow accumulated, the caribou dispersed even more. Because they have considerable trouble moving through deep snow it would have also become easier for hunters on snowshoes to track single animals inland and drive them into the deeper snows. There, they could be quickly tired out and shot at close range. This method was well-suited to hunting the more solitary woodland caribou found in the more open uplands as well (Honigmann, 1956:35; Mason, 1967:12; Rogers and Smith, 1981:132).

Moose take to the shelter of the trees in the winter, retreating farther into the bush than in other seasons (Snortland-Coles, 1979:103) and hunters would have searched for them inland (Boulanger, 1971:51; Honigmann, 1956:35). In the early part of winter, moose, like the caribou, could still evade hunters, so the hunt at this time was not very reliable (Tanner, 1979:20).

Before long, however, the snows would be deep enough to force the moose to concentrate in areas of lesser snow accumulation where they could keep the snow tramped

down. This predictable behavior made the moose fairly easy to locate, and they could then be driven out into deeper snows which slowed their flight. This was a good time to hunt moose and they were important game for the Cree in the winter (Brightman, 1993:8; Feit, 1987:77; Orecklin, 1976:74; Rogers, 1963b:40; Rogers and Smith, 1981:132; Rogers and Taylor, 1981:232).

Bear could be hunted in the winter. They were sought out in their dens, often made beneath deadfall trees, and were often found by the dogs. They could be killed there with clubs, axes or spears. Bear meat was good and was fat through much of the winter, but especially in the earlier months (Brightman, 1993:8; Hearne, 1971 [1795]:371; Rogers, 1963b:41; 1973:40; Rogers and Smith, 1981:132; Williams, 1969:28).

Large game, however desirable, was not always available and Cree families often had to fall back on alternate resources during the winter months. Small game animals and birds could become staples in the winter diet and camps were best located with access to the preferred winter habitats of these species (Drage, 1982:21; Gillespie, 1981a:18; Hanks, 1982:111; HBCA, B.91/a/3:10,11; Rich, 1952:30,31).

In the early winter, ruffed grouse were quite abundant in the forest and were often found feeding in the willows and poplars along shorelines where they could be snared or shot (Drage, 1982:22; Glover, 1962:31). Other game birds - spruce grouse and ptarmigan - were also hunted throughout the winter (Glover, 1962:31).

Hare were most abundant at the beginning of winter and many could be taken in snares set across their very visible runways through the snow, usually within a couple kilometers from camp. They were often found in places where they could feed on deciduous browse: in the open, mixed-jack pine forest common on sandy ridges, in aspen and poplar groves along shorelines, and out around the edges of the frozen muskeg where willow were plentiful (Brumbach and Jarvenpa, 1997:424; Drage, 1982:22; Meyer, 1985:219; Rogers and Black, 1976:10). When setting snares for hare, a person would often walk a circuit around or near the camp, starting at the shoreline and setting snares wherever

they encountered a hare runway along the circuit (Rogers, 1963b:42).

Other small game was probably important in the winter as well. Porcupine, for example, could be quite effectively killed with a club when found on the ground in the jack pine and mixed forest stands that they favoured in the wintertime (Banfield, 1974:233-236; Irimoto, 1981a:103; Rogers and Smith, 1981:133; Williams, 1969:23). Lynx were more difficult to get, but were eaten when they could be trapped in snares and deadfalls set in the wooded lowlands and anywhere that hare were found (Ahenakew and Wolfart, 1992:95; Feit, 1969:110; Glover, 1962:69; Knight, 1968:16; Rogers, 1963b:42; Williams, 1969:22). Otter, taken mostly in the winter months (Rogers, 1963b:41), could sometimes be snared or trapped at their cross-over places where they travelled over land to cut off a large bend in a river or stream (Chansler, 1968:128). They were also predictably found around those falls and rapids which remained open through the winter (Hearne, 1971 [1795]:374,375).

Until the fur trade, few furbearers were apparently of any great importance to the Cree. In years when more palatable game was scarce, however, people would probably have more actively tried to hunt and trap almost any edible animal, including wolves, weasels and squirrels which were often considered to be starvation foods (e.g. Honigmann, 1956:41; Steegman, 1983:252; Williams, 1969:20). But of all the furbearers that eventually became important for their pelts, only the beaver was much emphasized traditionally, valued for its meat and for its fur (Drage, 1982:21; Helm et al., 1981:151).

Because they could be predictably found in their houses along the poplar shorelines of ponds and tributary streams, often in the same locations year after year, beaver could be among the most reliable winter game (Tanner, 1979:20). Finding and breaking into the frozen houses with axes or similar tools and taking the beaver from inside, though labour-intensive, was not too difficult at the beginning of winter, when the ice was still thin and the snow not too deep (Rogers and Black, 1976:11). As the ice grew thicker, however, this became progressively more work, and hunters preferred to go after large game instead (Brightman, 1993:342), so that beaver were mostly taken in the earlier winter.

Fish could also be a staple food in some winters (Pettipas, 1980:197; Tanner, 1979:21), although fishing through the ice was more difficult and generally less productive than fishing in the warmer months (Honigmann, 1956:37; Martijn and Rogers, 1969:126). The larger, deeper lakes tended to have the best winter fisheries, most of the desired fish preferring to disperse through the deep waters in the wintertime (Glover, 1962:60,62,94; Meyer and Thistle, 1995:427; Rogers and Black, 1976:6; Williams, 1969:122). Still, people were able to successfully get some fish from rivers and deeper streams (roughly 5 m or deeper) as well (Rich, 1949:167; Winterhalder, 1978:352).

Whitefish could be caught in nets set at several meters depth beneath the ice of deeper lakes (Glover, 1962:60; Williams, 1969:122). The nets could be set wherever the fish became naturally concentrated by the currents, as whitefish had no particular preferred habitat for the winter other than that they be in deep lakes (D. Bodaly, 1997: personal communication). Similarly, lake trout could be caught mainly in the deep lakes. Baited bone hooks were used to take trout (Rogers and Black, 1976:6; Williams, 1969:119) as well as other predatory fish, including jackfish, pickerel and burbot (Rogers and Black, 1976:7). Although weir use was normally limited to open-water seasons, they were also used by some groups (e.g. the Cree-Ojibwe of the Hudson Bay Lowlands) to take fish from rivers and streams even during the winter. Rather than ending in a fish trap, winter weirs - constructed in areas of fast water - led to a ramp which was constructed to lead up onto the surface of the ice, where a hole would be cut. In contrast to open-water weirs with traps from which fish could not readily escape, these winter weirs had to be attended constantly. This way, the fisherman could drag the fish up onto the ice from the ramp with a hook or net before the fish could swim away (Lister, 1988:75).

The cold waters kept caught fish from spoiling so that nets, if used, had to be checked only sporadically (Rogers and Rogers, 1959:135; Winterhalder, 1978:353). In spite of this, winter fish nets were often set much closer to the camps than summer nets commonly were (Winterhalder, 1978:353). People did not like to have to travel too far from

camp in the colder months (Rogers and Smith, 1981:137), and with the regular camp moves of winter, there was little reason to worry that the local fishery would be exhausted during their stay.

Because ice thickness could be a determining factor in where people could fish (Hanks, 1982:352; Lister, 1999), winter fishing sites were often places of faster waters, like lake narrows and river and stream channels, possibly below rapids, the base of falls, and stream confluences. Some of these places might remain open all winter (Orecklin, 1976:73; Winterhalder, 1978:353). Conveniently, many of these are the same places as those at which fish get concentrated naturally at any time of year (D. Bodaly, 1997: personal communication). Care had to be taken around thin or weak ice.

The mid-winter was typically a very hard season. The months of January and February were often bitterly cold with strong northwest winds, making it hazardous to leave the camp and its ready shelter. A huge amount of firewood could be used during these coldest months of the year (Orecklin, 1976:66). This happened to coincide with a time that the distance from camp that people were willing to travel for fuel and food was shrinking with the cold. Dry brush for firewood, small game and other localized resources were accordingly quite quickly exhausted in the camp areas. In response, camp moves had to be made even more frequently than during the earlier winter (Rogers, 1963a:71; Tanner, 1979:40,73), and these moves were made just as slowly and carefully, movement probably restricted to the mid-day hours.

The hare and other small game that could normally be caught around the camp became scarce; those animals that had survived the winter so far could not be snared or trapped in any great number because they too holed up against the cold at this time (Glover, 1962:30; Rogers and Black, 1976:10; Rogers and Rogers, 1959:136; Rogers and Smith, 1981:135). Fishing similarly became increasingly unproductive as the fish took to the deeper waters and became less mobile, and the thickening ice made it so difficult that the

people would normally give up on ice fishing for this period (Glover, 1962:30; HBCA, B.91/a/3; Orecklin, 1976:66).

With the difficulty of catching small game and fish, hunters focussed on getting larger game whenever they ventured away from the camp (Rogers and Rogers, 1959:136; Smith, 1975:180) , but would generally take whatever they could get opportunistically as well. Both moose and caribou are said to become easier to catch as winter wears on because the steadily accumulating snow makes them more predictable and slows them down (Brightman, 1993:8; Feit, 1987:77; Orecklin, 1976:74; Rogers and Black, 1976:10; Rogers and Smith, 1981:132,135; Rogers and Taylor, 1981:232; Tanner, 1979:20). When conditions were right for a productive moose or caribou hunt, a number of families could stay together for some time, even in this season (Brightman, 1993:10,11; Martijn and Rogers, 1969:98; Wood, 1983:78).

Like most of the forest creatures, however, large game tended to become more scarce over the winter, especially during long or otherwise hard winters. In these years, many animals succumbed to hunger, predation or disease. Those which remained were far leaner than at the beginning of the winter. The deep snows which made it easier to catch moose and caribou also made it harder for them to get their own food (Brightman, 1989:150; Driver, 1990:14; Rogers and Smith, 1981:135).

For these reasons, mid-winter could be a period marked by a certain amount of food shortage. Even those foods which had been preserved in the fall to see people through leaner seasons were normally used up well before this time (Brightman, 1993:246; Orecklin, 1976:66). Famine foods could in some years be all that kept a family from starving. It is no wonder that stories of the *Witiko* and other cannibalistic creatures were set mostly in the winter season (e.g. Brightman, 1989:125; Downes, 1943:38; Ray and Stevens, 1971:127).

Around the month of March, the worst of the winter had relented and daytime temperatures began to warm slightly again. The fish and small game grew gradually more active, and it became easier for people to go out to hunt the scattered but vulnerable moose

and other large game (Pettipas, 1980:185; Rich, 1952:39; Smith, 1981a:260). This could sustain the families while they waited for the migrations of the caribou, waterfowl and fish that marked the renewal of spring bounty, when the whole cycle would begin again.

8. DENÉ SEASONAL LAND USE IN THE BOREAL FOREST (LATE WOODLAND: C.1300-350 B.P.).

8.1 Introduction.

The ancestors of the Rock Cree made the boreal forest their home, and they were year-round residents of this familiar territory. In contrast, the Edthen-eldeli Dené were until recently only seasonal users of the boreal forest. These people travelled back and forth between the southern barrens and the northwestern transitional forest like the migratory barren-ground caribou which were so central to their lives. They were only regularly south of the treeline during those months in which the caribou also took to the woodlands - usually from about November to May (Smith, 1981b:276). These months were probably only occasionally spent in the full boreal forest regions preferred by the Cree, as the barren-ground caribou normally wintered in the more open lichen-woodlands of the transitional forest to the north (Hearne, 1971 [1795]:80; Smith, 1981c:136).

Over the past 1500 or more years that the Caribou-Eaters have been the northern neighbours of the Cree and their ancestors, the treeline has shifted north and south with periodic fluctuations in the climate. For some generations this would mean that the forest fringe, the transitional forest, and the barren-ground caribou would all be even farther north than they are today. At other times, a cooling climate would bring them farther south so that from time to time the Dené may have been making regular use of parts of north-central Manitoba which in more recent times they only occasionally visited.

Because these people have sometimes been regular visitors to this region, the ways in which they lived, where they travelled and how they related to the land and its resources with the changes of the seasons are as important to understanding the archaeology of north-central Manitoba as are the corresponding seasonal rounds of the postcontact Cree and their predecessors. All peoples of the subarctic regions seem to share some common ways of living and using the land around them, and this is what allows writers to generalize about 'subarctic adaptations'. But there were differences as well: in their economic focusses, in

their patterns of movement and modes of travel, in how they related to their neighbours, in how they saw their worlds. As a result, different peoples' patterns of land use and the ways in which they are reflected in the archaeological record should be similar in some ways, different in others. In the following section, some of these similarities and differences should be apparent as a generalized seasonal round of the pre-fur trade Dené is presented for comparison to that already discussed for the Cree.

8.2 **Spring.**

The coming of spring brought the promise of easier times for most people in the subarctic. In the forest it meant that the harsh cold would soon be giving way to warmer days and that most of the diverse species of animals and plants sought by the Cree for food would become once again more abundant and, in certain cases, easier to harvest. For the Dené, the earliest months of spring also heralded one specific event of considerable importance; it was the time that the barren-ground caribou began to gather together and start their northwards migration back to their calving grounds on the tundra, meaning families would have to make preparations for their own moves out of the forest and for the caribou hunts along the way (e.g. Hearne, 1971 [1795]:86-88).[110]

The caribou began to herd up as early as February or March, and the animals would drift towards the path of their migration. Often by mid to late April, still ahead of the break-up, a rapid and quite direct migration to the barrens was underway (Kelsall, 1968:106, 109,110,138). Parts of the herds normally reached the treeline by the first week of May (Kelsall, 1968:138,139), well ahead of the completion of break-up in the northern forest, and the pregnant cows would be well out on the barrens before the calves were born in early June (Burch, 1991:442; Kelsall, 1968:106,110). The bulls, who ranged farther south into the forest during the winters, followed behind (Gordon, 1975:72; Kelsall, 1968:106; Smith, 1978:71,82).

The timing of the beginning of the migration and the actual path taken by any aggregate of caribou could vary from year to year and were not very predictable (Burch, 1972:364; Hearne, 1971 [1795]:86-87; Irimoto, 1981a:15; Kelsall, 1968:107,108). In order to keep more informed of the location and movements of the herds without having to keep up with the nomadic caribou day and night, the Edthen-eldili Dené had long ago learned to maintain a network of communication between dispersed neighbouring groups through frequent visiting and/or through the use of smoky fires and other signals (Blondin, 1990:52; Burch, 1991:443; Bussidor and Bilgen-Reinart, 1997:37; Sharp, 1977:36; Smith, 1978:82,83; 1981b:276,281). Informed in this way, families which had spent the winter dispersed through the northern forest could come together in larger groups again when the caribou were observed gathering. They then could head north towards the treeline with the migration in the early spring, along the observed or anticipated path of the caribou (Blondin, 1990:80; Burch, 1991:442).[111] Dené could kill the most caribou when the herds kept to regular migration paths, enabling the hunters to predict their routes and to construct drive lanes and corrals ahead of them. However, even when the caribou were acting less predictably, Dené could often still get plenty of meat just by opportunistically hunting the scattered groups of caribou that they met along the way north in the spring (e.g. Hearne, 1971 [1795]:86-87).

Dené families made the journey from their winter camps to the barrens on foot, using toboggans of wood or caribou hide and snowshoes to move over the snow and ice (Birket-Smith, 1930:40; Smith, 1982:12; VanStone, 1974:26). In contrast to the Cree, who tended to follow along rivers and lakes, only occasionally crossing between them, the Dené more often walked over land from water body to water body (Brumbach and Jarvenpa, 1989:120; Downes, 1943:114; Hanks and Winter, 1991:51; Hearne, 1971 [1795]:327; Helm, 1988:5; Tyrrell, 1934:417; Warkentin and Ruggles, 1970:90,91).[112]

North-south trending eskers and similar high ridges made good cross-country pathways, being quite open, level-surfaced and well drained, and the Dené favoured these for

walking over when they were available (Irimoto, 1981a:90; Nash, 1975:25; Petch, 1997a; 1997b:67). These were preferred even in the colder seasons when the muskeg that dominates most of the inland areas of the transitional zone is frozen and thus passable. Frozen muskeg could be travelled over, but it could be rough going, and the relative lack of firewood in extensive muskeg areas made them undesirable places to camp (Glover, 1962:113).

While travelling, a travel camp had to be set up each night and the usual camp-related activities carried out as at any other time of year: firewood had to be gathered and cut, a fire was made, water was found or melted down from snow or ice, the tents were set up and spruce boughs laid down for the floor when these were available, and meals were prepared and eaten (Irimoto, 1981a:109). Free hours at camp were probably also filled with making and repairing equipment that would be needed for the spring season, including but not limited to, arrows, spears, snare line, fish nets, baskets and knives.

Time was taken out from travel when the groups came to places in the northern forest where they could gather plant materials such as birch bark that were not so readily available on the barrens. Similarly, travel halted temporarily when the people came to places where they could fish or hunt caribou for a few hours or days to replenish their supply of food (Burch, 1991:442; Hearne, 1971 [1795]:88,91,280,281).

By the early spring, the fish which had been difficult to catch during the coldest part of the winter were becoming more active again (HBCA, B.91/a/3:14), so that while travelling or while waiting for caribou, families could fish for their food as necessary, mostly angling for whitefish, trout and jack. The Dené more often angled for fish rather than using nets when fishing through the ice (Birket-Smith, 1930:28; Hearne, 1971 [1795]:15,16; Smith, 1981b:281; Tyrrell, 1934:525), and the catch probably had to be supplemented by other game.

Supplementing the fish and any preserved caribou meat that remained from the previous hunt, small game could be snared or hunted around the camp areas. Dené often took at least minor amounts of small game including porcupine, hare, ptarmigan and grouse. While still in the forest they may also have hunted lynx, otter, beaver and muskrat when these were available (Birket-Smith, 1930:18; Blondin, 1997:22; Heffley, 1981:131; Irimoto, 1981a:103; Smith, 1982:5,9). Moose were usually ignored when caribou were nearby (VanStone, 1974:24), but even they could be hunted by Dené in the early spring by hunters who chased them into deep, crusted snow or caught them up in snares placed across the large game trails (Blondin, 1997:20; Hearne, 1971 [1795]:283,284; Irimoto, 1981a:41; Smith, 1982:17). None of these species assumed more than marginal importance so long as there were caribou to be hunted, however.

An important advantage of travelling over eskers and other high places leading towards the tundra was that these were also the preferred pathways of the caribou during their spring migrations (Gordon, 1975:81; 1981:3; Petch, 1997a), and this would increase the people's chances of encountering herds along the way. In preparation for the journey, families would have built up stores of dried or frozen meat and fish, but fresh meat would always be welcome to replenish the supplies and for a break from preserved foods. The spring hunts could be very bountiful, in spite of the lean condition of the caribou at this time of year (Burch, 1972:345; Kelsall, 1968:41), and hunters would have been ready to take advantage of the concentrations of migrating caribou any time that they chanced upon them (Burch, 1991:442; Gordon, 1989:69; Hearne, 1971 [1795]:86,87,286). The chance to hunt the migrations in this opportunistic way probably grew towards the treeline, as the many lines of caribou migration tend to converge as the barrens are approached (Kelsall, 1968:110), and a group following behind one herd of caribou could find themselves increasingly surrounded by other caribou who were later in crossing the treeline.

In the absence of open water crossings at which to ambush the caribou at this time of year, the hunters usually tried to encounter caribou out on the ice where they could shoot

them from behind some sort of cover, or, if there was time to prepare before the herd passed through, they could catch the caribou in snares set inside of a hedge or in a corral constructed with converging brush drive lanes leading up to them. The drive lanes and corral were best set up in along the expected migration route, particularly where natural topography helped funnel the caribou into the drive lane. This was often on the shoreline or ice of a lake or wide river at the point where a regular caribou path, such as an esker or a long point, came out onto it (Andrews and Zoe, 1997:167,168; Blondin, 1997:22; Gordon, 1975:72; Legat, 1995:5,6; Nash, 1975:3; Smith, 1982:13,14; Smith, 1981b:275).[113] In any year that the caribou followed that same path, the same hunting site could be used again by the people, and if the drive lanes and corral still stood, they had only to be repaired for the next hunt (Gordon, 1981:17; Heffley, 1981:137,138; Smith, 1981b:275).[114]

When an interception of a caribou migration for a mass harvest was possible and desired, the camps would be made near the drive lanes, on a height of land or some other point that offered a good view. From there the women, older children and some of the men could watch the approaching herds, stealing down to surprise the caribou on their arrival and to herd them towards the corral and the waiting hunters (Andrews and Zoe, 1997:167,168; Birket-Smith, 1930:22; Hearne, 1971 [1795]:78; Nash, 1975:3; Smith, 1982:15).[115] A successful hunt would be followed by several days or more of butchering the animals, feasting on the tongues and other fat-rich parts, and preserving meat for the summer (Blondin, 1990:122; Hearne, 1971 [1795]:286; Sharp, 1981:233). The dried meat could then be stored in leather pouches which could be carried with them when the journey resumed (Brandson, 1981:13; Smith, 1982:17).

The Dené's methods for hunting migrating caribou were communal in nature, requiring groups of people acting together in the hunt and in any subsequent processing and preservation of often large kills (Heffley, 1981:137; Smith, 1978:77). Even if this had not been the case, the increasing concentration of the caribou as they approached the treeline would still have made it necessary for the people to come together in the spring if they

wished to stay around the herds, and again in the later summer through fall when the caribou returned southwards. However, while the motivation for these gatherings might have been economic, the time together also encouraged other activities often characterizing gatherings of local or regional bands, like the visiting, information sharing, trading, making of plans and marriages and renewing of friendships.[116]

People also tried to gather together annually for drum dances where together they would give thanks for their survival through the winter and for successful hunts and ask for help in the coming year (Blondin, 1990:58,59; 1997:59). The gatherings of bands for communal hunts would have presented opportunity for this important event.

As the spring progressed and most of the migration had passed, the families would leave the forest to follow the caribou onto the southern barrens where they would spend their summer. Winter equipment that they had no more use for like sleds and snowshoes could be cached, although families were not always able to return to the same place come fall - it all depended on the path of the caribou. Tent poles, which were easily found while moving from camp to camp within the forest, were hard to come by on the barrens, so these would have to be collected before leaving the trees behind (Hearne, 1971 [1795]:87), as would other forest materials. If old canoes could not be retrieved from where they were stashed in a previous fall season, materials to collect would include wood for new canoe frames, and birch bark if it was available and desired for the canoes.

Because Dené canoes were only used for certain water crossings and for hunting, they could get away with fewer and smaller vessels than those used by the Cree, sometimes even covering them with spruce bark or rawhide rather than birch bark (Birket-Smith, 1930:43; Franklin, 1971 [1828]:16; Gillespie, 1976:9; Smith, 1982:11). But most years, before leaving the forest behind, Dené families would search out a grove of good-sized birch trees and collect the bark for their canoes (Andrews and Zoe, 1997:168,170; Hearne, 1971 [1795]:91). Because larger birch are rare in the northern transitional forest, being

limited to the most sheltered, south-facing, well-drained shorelines (Geotechnical Section, 1974:57), a few people might have sometimes had to travel farther south into the boreal forest to collect the birch bark if this was desired and bring it back to the forest fringe where the canoes would be constructed (Birket-Smith, 1930:42; Smith, 1981b:280). In other cases, the bark might have been collected prior to the northward migration - around April when the bark was first becoming easier to peel and the people were still farther south in the forest where birch were more common. The lightweight rolls of bark could then simply be carried with them as they travelled northwards, to be made into canoes just before leaving the forest (Blondin, 1990:143; Hearne, 1971 [1795]:88,91; Sharp, 1977:38; Tyrrell, 1934:514,552). The finished canoes could then be carried until needed following the break-up.

While travelling during the open-water months, Dené mostly carried their light canoes with them as they continued to walk long distances over land from water body to water body, (Hearne, 1971 [1795]:97; Smith, 1982:11). They were not experienced canoeists, and even limited their use of the vessels for crossing water to the shortest routes, often making the crossings at calmer narrows of lakes and slower rivers - much like the caribou - and tried to avoid going out on the water on stormy days for either travel or hunting (Gillespie, 1976:9; Glover, 1962:109; Hearne, 1971 [1795]:201; Irimoto, 1981a:90; Smith, 1982:11). To cross streams and narrow rivers, the people sometimes cut trees and branches to throw into the water to make a bridge across (Bussidor and Bilgen-Reinart, 1997:19). If the crossing was shallow enough, they would simply ford it (Bussidor and Bilgen-Reinart, 1997:23; Hearne, 1971 [1795]:201).

While the Dené were not nearly so dependent on the waterways for their travel routes as were the Cree, break-up could still hinder their movements. They would still have to be able to cross waterways from time to time, and the inland could be difficult to trek across when slushy (Hearne, 1971 [1795]:27,282; Jarvenpa, 1976:63; Rogers and Smith, 1981b:130,137). Like the Cree, it seems likely that they would try to be set up in a

convenient place to wait out the thaw and keep busy with activities which did not require much movement away from the camp (Jarvenpa, 1976:63). On the other hand, if they were travelling over eskers and other high, sandy landscapes already, as they preferred to do, these tended to be better drained and would have imposed fewer restrictions on the peoples' movements and activities (Brumbach and Jarvenpa, 1989:110; Irimoto, 1981a:90; Nash, 1975:3; Petch, 1997a). Families could also have already arrived at their summer camps on the barrens ahead of the break-up of all waterways and have had little concern with limitations to long-distance travel to begin with.[117]

Because the break-up often came soon after the spring caribou hunts, this period of relative immobility might have been spent drying the meat, together with making and repairing of equipment which would be needed for the summer rather than in extensive travel anyhow (Irimoto, 1981a:126). The best hunting camps at these times were those situated near a good spring fishery (Smith, 1981b:281). This allowed the people to fish not only through the ice if waiting for the caribou, but also to use nets to harvest the spawning runs of pickerel, sucker and jackfish in open waters with the later spring (Irimoto, 1981a:42,126; 1981b:48; Jarvenpa, 1976:64; Smith, 1978:72). Stream mouths, shallow bays, and rapids or falls near lakes seem to have been favoured fishing spots, being open early and common spawning locations (Blondin, 1990:189; Hearne, 1971 [1795]:20).

The fishing at this time of year could offer plenty of food to the people, but it only assumed importance in those years when the caribou hunt had been less successful. In those years, the spring spawning runs could be of vital importance (Heffley, 1981:138; Yerbury, 1986:132) and much of the fish may have been dried for use through the coming weeks or months (Smith, 1982:18).

Other game could also be important to the Dené in those springs when the caribou hunt had been less successful, and they added variety to the diet even when the hunt had gone well. So through the break-up, the people may have snared hare, ptarmigan, grouse and other small game around the camps (Irimoto, 1981a:126; 1981b:48). Bear could have

been hunted at the rapids where they fished the spawning runs (Irimoto, 1981a:126). The migratory waterfowl which returned to the region with the first open water could be shot or snared in great numbers where they fed and rested (Birket-Smith, 1930:26; Gillespie, 1981a:16; Hearne, 1971 [1795]:26,285; Irimoto, 1981a:126; Williams, 1969:41). If a family was still far enough south to find beaver and muskrat at the time of thaw, this seems to have been the favoured time to hunt them (e.g. Blondin, 1990:122,139,147,157,164), although Dené interest in these species, in the east, was rather low.

By the later part of spring, most Dené were already out on the barrens with the caribou cows (Burch, 1991:442). Still, some families may have remained in the forest fringe hunting the bulls; these did not normally finish crossing over the treeline until sometime in June (Gordon, 1975:72; Harper, 1955:12). If the early spring caribou hunts had been particularly good, many families might continue on at those places without moving or worrying about the hunt again for several weeks (Hearne, 1971 [1795]:80). With the warming weather the Dené did seem to have habitually preferred to be on the barrens side of the treeline, however. There they could hunt for fresh caribou meat and could avoid the *Nakhani* or bushmen that haunted the forests during the summer months (Birket-Smith, 1930:29).

Whether the people were still in the forest fringe or out on the barrens, the late spring was one of the best times to fish. In the past, fishing was rarely more than secondary to the caribou hunt for the Dené (Smith, 1982:62), but the spring spawning runs were an easy source of food and the families may have made a point of camping near the rapids and river mouths where the spring spawners could be caught in the greatest numbers, especially when the caribou had let them down earlier in the spring (Heffley, 1981:131; Irimoto, 1981a:42; Jarvenpa, 1976:60; Sharp, 1981:232). Using gill nets laboriously made from willow bark cordage or from babiche was the most common and productive way to fish these runs, but Dené were also known to construct weirs, to spear fish, shoot them with fish-

arrows, or simply to angle for them with baited hooks (Birket-Smith, 1930:26-28; Hanks and Winter, 1991:51; Smith, 1982:10; VanStone, 1974:25) at the same kinds of places as discussed for the Cree.

It is often said that the Dené did not go out of their way to harvest much in the way of plant foods, but their use of plant foods and medicines has probably been underestimated (Walker, 1984:34). At least some greens would be picked as they emerged with the warmer days (Birket-Smith, 1930:29; Bussidor and Bilgen-Reinart, 1997:12; Smith, 1982:19; Walker, 1984:163), and numerous other spring plant foods were also harvested as they became available, even if not in quite as great a diversity or abundance as was the case for the Cree (e.g. Blondin, 1990:170; Walker, 1984). Plants add variety to the diet, and even more importantly, vitamins that cannot be obtained from meat alone (Black, 1973:60; Shay, 1980:265). The value of these plant foods should not be underestimated. Gathering of greens in the springtime was probably a regular activity, for example, much like firewood and spruce bough collection.

Plants were important for other purposes as well, and during spring more could be collected. Willow bark, for example, had to be taken for making new cordage. Birch bark was stripped for canoes and baskets when suitable trees could be found. What medicines were available in the transitional forest and out on the southern barrens were gathered by healers (Blondin, 1990:171; Walker, 1984:34). Sphagnum moss was as important to the Dené families as it was to the Cree for diapering, bandaging, women's menstrual pads and insulation, and mosses also became important fuels for burning when the people moved out onto the barrens (Blondin, 1997:202,203,207; Bussidor and Bilgen-Reinart, 1997:16,18; Hearne, 1971 [1795]:313; Walker, 1984:149). Like the Cree, Dené women in recent times would go to the edges of muskeg areas to pick moss and leave it on racks or tree branches to dry there. Whenever they needed a new supply, they could walk to the cache, collect some of the dried moss and replace it with newly picked moss. Gathering up moss could

be in fact a very regular activity, so these sites were usually fairly close to camp (Brumbach and Jarvenpa, 1997:425,426).

With the disappearance of the snow, new lithic materials might have been more often sought out by Dené tool-makers. Broken cobbles, tested for their potential by tool-makers as they passed by, can be seen littering some eskers (e.g. Petch, 1997a), the highways used by Dené travellers and among their preferred camp places in most seasons (Downes, 1943:67,68). Unlike the Cree, they would have paid little attention to finding good clay sources at this time, as the ancestors of the Dené do not appear to have made pottery. Instead, they used birch bark baskets and bags made from caribou hides and stomachs to hold water and food (Hearne, 1971 [1795]:316; Smith, 1982:18).

8.3 **Summer.**

Summers were traditionally spent north of the treeline with the caribou, and Dené use of the forested regions would have been quite minimal. By the time summer's heat had stolen onto the land and the last of the barren-ground caribou had crossed over the treeline, families were moving on from the transitional forest to the barrens themselves if they had not already made this journey in the latter part of spring (Birket-Smith, 1930:29; Bussidor and Bilgen-Reinart, 1997:12,14; Heffley, 1981:131; Smith, 1981b:277; Yerbury, 1986:130). Most tried to be up near the caribou's calving grounds in time to hunt the aggregated caribou there, usually arriving by early June (Burch, 1991:442).

This was usually a fairly easy season of hunting caribou, both communally - either using drive lanes to guide caribou towards waiting hunters (Birket-Smith, 1930:22; Hearne, 1971 [1795]:320-322; Heffley, 1981:137; Smith, 1978:75) or ambushing the caribou at water crossings (Hearne, 1971 [1795]:97,119; Smith, 1978:75) - and more individually by single or small groups of hunters using bow and arrow, while other members of the families went about other activities (Smith, 1982:16; Smith, 1978:75). Which method was used and

the size of the group of people who could stay together at that time and place depended largely on the dispersal of the herds (Heffley, 1981:137,138; Smith, 1981b:276).

The summer was fly season, however, and by the time the calves were born, caribou were being harassed badly enough to keep them aggregated and almost constantly on the move. As a result, they became very lean towards the height of summer. Large numbers of caribou could be killed in the summer, however, and people could do well eating hardly more than the tongues, marrow and the other choice parts of those (Hearne, 1971 [1795]:39; Kelsall, 1968:41,211).[118] Dry meat was another favoured alternative.

Fishing the remainder of the spring spawning runs in the barrens' productive lakes and streams could fill many days, especially in those years that the caribou were proving more elusive or were exceptionally lean (Smith, 1982:62,63; Smith, 1981b:281; VanStone, 1974:75), and birds' eggs were sometimes taken from nests (Birket-Smith, 1930:29; Hearne, 1971 [1795]:431,435; PAM, MG1 B14, Ia:153). Food plants available on the tundra were collected, and game as diverse as the musk-ox, waterfowl, ptarmigan and hare could also be taken when needed or desired (Birket-Smith, 1930:29; Burch, 1991:442; Bussidor and Bilgen-Reinart, 1997:12; Hearne, 1971 [1795]:147,299; Heffley, 1981:131; Smith, 1982:5; Smith, 1981b:272; VanStone, 1974:25). The caribou were the most desirable game, however, and none of these others ever assumed more than marginal importance if there were enough caribou being caught (Smith, 1981b:281; VanStone, 1974:75).

By mid-summer the caribou, still concentrated in large herds in order to minimize the fly harassment which persisted until early August, would begin to travel back towards the southern barrens and the treeline (Burch, 1972:345; Kelsall, 1968:41,106,107; Smith, 1978:71). Knowing this, the families could travel a little ahead of the herds in order to prepare for the late summer hunt (Burch, 1991:442; Hanks and Winter, 1991:51; Harper, 1955:18; Heffley, 1981:138; Sharp, 1977:36; Smith, 1981b:276,281). The location of the

caribou concentrations just prior to the beginning of their migration usually indicated the route that that group of caribou would take, and the people would have watched for this, sometimes sending out scouts to find the caribou and would have communicated their observations to neighbouring groups through signals. Once the most likely route had been determined, Dené could gather at strategic sites along the route at which they could ambush the migrating caribou (Bussidor and Bilgen-Reinart, 1997:53; Smith, 1978:75,82).

In the time before the caribou showed up, the people ate dried meat prepared earlier in the spring or summer (Downes, 1943:122,123) and often fished, collected berries and other plant foods, and took some small game as well, including hare and ptarmigan (Burch, 1991:442; Irimoto, 1981a:16,103; Smith, 1981b:281). Fishing could be quite important at this time of year, as the caribou continued to be lean, and the best places to be waiting for the herds in the late summer and then again in the fall were on the shorelines of good fishing lakes located along the more regular migration routes, somewhat north of the treeline (Heffley, 1981:138; Irimoto, 1981b:49; Smith, 1981b:281).

8.4 **Fall.**

While the end of the summer was often a time of dispersal for the Cree, among Dené this time was marked by what were often the largest gatherings of the year as the people came together for the great caribou hunts. These gatherings not uncommonly numbered several hundred individuals in one place (Brandson, 1981:3; Gordon, 1975:71; Heffley, 1981:137; Smith, 1982:13; Smith, 1981b:275). Details of the fall hunts seem to have varied from year to year and place to place. While the fall caribou migrations were generally more concentrated than those of the spring, so that more animals crossed through an area in a shorter period of time (Burch, 1972:346; Harper, 1955:19), their timing and pattern were more erratic (Harper, 1955:12). Still, in most years the people were able to anticipate the movements of their game and successfully took enough animals to satisfy their needs for hides and meat.

Because of the flies which infested barren-ground caribou in the summers, their hides were only in good condition for a few months a year, from roughly late July to late September (Harper, 1955:57; Hearne, 1971 [1795]:196,197; Kelsall, 1968:274). It was during these months that they were sought by Dené for the many hides which were needed to outfit the families for the coming year (Birket-Smith, 1930:50; Blondin, 1997:206; Brandson, 1981:3; Burch, 1972:362; 1991:442; Driver, 1990:19; Hearne, 1971 [1795]:50,195; Smith, 1982:8; Smith, 1978:71). [119] On reaching the southern barrens, however, the caribou were still quite lean and throughout the month of August they dispersed in search of food before the rut (Burch, 1972:345; Kelsall, 1968:64,128,131; Smith, 1978:71). During this time, the Dené probably took the caribou on the southern barrens more opportunistically, and primarily for their hides (Burch, 1991:442). Preserved caribou meat and other alternative provisions, especially fish, became more important for food, although fresh caribou meat would still have been taken from choice parts.

By the end of August, the caribou were getting quite fat and were gathering into larger groups again (Kelsall, 1968:64,128,131), producing conditions that were important for the mass harvests of caribou for hides and meat. The locations of these re-aggregations usually indicated the place at which that herd of caribou would later cross into the forest,[120] and the Dené would have repositioned their hunting camps accordingly (Smith, 1978:82), the largest gatherings of the year usually coming together at this time (Gordon, 1975:71; Smith, 1982:13; Smith, 1978:69,71).

As in spring, the early fall caribou hunts on the southern barrens were communal. But in this open water season, rather than using corrals, hunters would more commonly use the canoes to ambush the animals as they swam across water crossings, a very effective method for harvesting caribou (Birket-Smith, 1930:22,23; Glover, 1962:109; Gordon, 1975:71-73; 1981:3; Irimoto, 1981a:15,103; Kelsall, 1968:211,212; Legat, 1995:7; Minni, 1976:71; Smith, 1982:13; Smith, 1978:75; VanStone, 1974:24). Fortunately, the types of places at which caribou tend to cross water bodies were among the few predictable things

about their fall migrations; the caribou tended to follow north-south running eskers, enjoying the relief from the bugs (Harper, 1955:41). After the end of fly season they followed the north-south trending river valleys as well, where there was better feed (Gordon, 1981:3). On arrival at larger lakes:

> ... caribou tend to bunch up and then move along the shore for some distance before they take to the water. Often this takes them onto projecting points of land, which are often good places to lie in wait for them. Narrow places in large or swift-flowing rivers are also good caribou-hunting posts (Burch, 1972:347).

Rapids were not much of a deterrent to the caribou, who sometimes preferred these spots for fording the rivers (Harper, 1955:41). Also, if the lake was small, or the river slow, the caribou were not limited to crossing at narrows (Burch, 1972:347) and they sometimes avoided crossings altogether by walking all the way around (Harper, 1955:41). For these reasons, it could sometimes help to have people surprise the caribou at some point along the shoreline they were following and herd them into the water at the place where the hunters waited on the opposite bank (Smith, 1978:75), or to construct drive lanes over the open ground leading up to the water crossing (Blondin, 1997:22; Harper, 1955:51,52).

While the migration path could vary yearly (Burch, 1972:364; Irimoto, 1981a:15), the more major crossing places tended to be highly reliable, allowing the people to re-occupy old hunting camps when the caribou again travelled through that region (Gordon, 1981:3,17; Heffley, 1981:138; Minni, 1976:75; Smith, 1981b:276). Those sites with a good view of these water crossings were favoured places, as from here the people could watch for the approach of the caribou (Birket-Smith, 1930:22; Gordon, 1981:3; Nash, 1975:3; Smith, 1982:15).

As usual, camps in places with access to other fall resources were also preferable, giving the assembled people something to harvest while waiting for the caribou and to sustain them if the caribou did not behave as expected when it came time for the hunt. Such resources might have included plant foods. By this time, in the early fall, most of the berries

available to the Dené - cranberry, blueberry, crowberry and cloudberry - were ripe and inviting, and they were surely collected (Birket-Smith, 1930:29; Gordon, 1975:29; Hearne, 1971 [1795]:449-455; Irimoto, 1981a:105; Jarvenpa, 1976:647; Smith, 1982:18,19; Smith, 1978:72; VanStone, 1974:25). Also, as the fall progressed, the trout and whitefish would be approaching shallower waters to spawn, and a well-chosen fall hunting camp would be located within an easy distance of their spawning grounds or some other reliable fishery (Blondin, 1990:55; Hanks and Winter, 1991:51; Irimoto, 1981a:42,105; 1981b:49; Sharp, 1981:232; Smith, 1978:72; 1981b:281). [121]

The people may have also hunted the return migration of the waterfowl as many do today (Jarvenpa, 1976:47), shooting or snaring them in the marsh areas where they rested. Because the birds generally left the Churchill area around the end of August (Brandson, 1981:3) and other fly-ways were probably similarly timed, the relatively fast waterfowl migration often coincided with the timing of the early fall caribou hunt. Waterfowl were, therefore, probably only of any real interest to Dené during those falls that the caribou were only sparsely available.

After a successful hunt, the people would be kept busy butchering the caribou. At this time of year, before the freeze-up, meat still spoiled quickly and if many animals had been taken, much of the meat might be wasted because it could not all be preserved well enough or quickly enough (Burch, 1972:362,363; Smith, 1982:17,18; Smith, 1978:71). Of the meat that was preserved, some might be cached.[122] With drying, however, the meat became quite light and much of the surplus could be carried on to the next camp when it came time to move into the forest (Sharp, 1981:233; Smith, 1982:17).

Camps in this season, just north of or just inside of the treeline, would be busy with people cleaning, scraping and stretching the many early fall hides (Burch, 1972:363; Hearne, 1971 [1795]:204). Hide preparation was a major activity at this time of year and could sometimes occupy the women clear through the freeze-up period.[123] Meanwhile, the

men could set about repairing or manufacturing equipment which would be needed in the coming months, and continuing to hunt and fish as necessary (Irimoto, 1981a:122,123). Once enough hides and meat had been procured and preserved, families might have made their way deeper into the transitional forest (e.g. Burch, 1991:442). However, most probably waited for the caribou to cross over themselves before leaving the barrens behind entirely (Gordon, 1990b:400).

Sometime around October, about the same time that the lakes were just beginning to freeze-up, the barren-ground caribou would re-aggregate around the treeline for the rut (Irimoto, 1981a:39; Kelsall, 1968:107,169). During the rut, the females gained fat, but the males would lose fat and take on a disagreeable taste which they retained sometimes into winter (Driver, 1990:14; Harper, 1955:50; Hearne, 1971 [1795]:69,198). Their hides were also no longer useful by this point (Hearne, 1971 [1795]:197). All the same, caribou would still be hunted by the Dené for their meat, of which large amounts could be collected and which became easier to preserve with the onset of colder weather (Burch, 1972:362; Kelsall, 1968:214; Smith, 1978:71).

During the rut, the males could be lured close with the sound of rattling antlers (Birket-Smith, 1930:20; Legat, 1995:5,10,11) and hunted more individually by hunters using the bow and arrow. But it would be the migration of the remainder of the herds across the treeline near the end of the rut, following the first major snowfall (Harper, 1955:18; Irimoto, 1981a:39; Kelsall, 1968:171; Smith, 1981b:275), that would have provided them with the greater amount of meat to store for the winter if enough had not already been taken and preserved in the earlier hunts.

The event of freeze-up would have had considerably less influence on the Dené than on the Cree who were accustomed to using the water routes for travel. The greatest impact on the Dené's movements would be the increasing difficulty of crossing the water as ice began to form (Tyrrell, 1934:515). Thin ice persisted on the northern lakes until some time

in mid-November and until the end of that month on the larger rivers (Fisheries and Environment Canada, 1978: Map 19; Penner, 1974:4; Harper, 1955:32).

For this reason, it was probably most reasonable for the Dené to set up camp at this time of year either at places where the water crossings they sometimes had to make froze over more quickly, such as the slower, smaller streams or shallow, sheltered bays along the margins of lakes (Penner, 1974:7),[124] or they may have camped at the rivers and lake narrows where the water remained open considerably longer, allowing them to continue to use the canoes for careful crossings and caribou hunting until at least some of the surrounding waters were safe to walk over. The people sometimes had to fish throughout much of the freeze-up when caribou could not sustain them (Irimoto, 1981a:130), and such places as these, particularly the open-water sites, would make this easier to do. However, having to fish through freeze-up would have been fairly rare in the earlier days when the people were still travelling 'with' the caribou (Smith, 1982:62; Yerbury, 1986:144).

Fortunately, the caribou would be limited to the same sorts of places for their own crossings during freeze-up if they had left the barrens by this time at all. When the caribou began to move back into the forest for the winter sometime around November (Kelsall, 1968:109,171; Smith, 1978:71), still concentrated but less so than during the earlier fall (Harper, 1955:19), they could still sometimes be taken by hunters in canoes at the open water crossings (Harper, 1955:32; VanStone, 1974:24). More often they were hunted out on the ice or in more open country by people using arrows, or even drive lanes and corrals (Kelsall, 1968:214; Minni, 1976:75; VanStone, 1974:24).

Following the hunt, there was again butchering, meat preservation and some hide preparation to be done (Irimoto, 1981a:122,123).[125] At this time of the year, meat could simply be frozen if necessary (Burch, 1972:362,363), sometimes left only buried under snow for as long as the people would be using that camp (Blondin, 1990:96; Bussidor and Bilgen-Reinart, 1997:33,42), although drying it would make it more transportable. If either the later or earlier fall hunt had been productive enough, several families could then

theoretically remain together at the hunting camps for several weeks, living off the cached stores until they were forced to move on as local resources were used up (Burch, 1972:349).

As winter drew near, the need for firewood and better shelter would have influenced any families still out on the barrens to move into the transitional forest where they would spend the winter, even if there was still plenty of caribou meat left to eat (Birket-Smith, 1930:29; Gordon, 1989:69; Irimoto, 1981a:110; Jarvenpa, 1980:115). What stores they could take with them, they would (Smith, 1982:17). What they could not, as well as any summer equipment that was no longer needed, including the canoes, might either be cached, abandoned, or even destroyed (Smith, 1982:18; Tyrrell, 1934:514). [126]

Travel, as usual, was on foot over the land, and with the muskeg areas frozen, these could be crossed as well (Downes, 1943:114; Jarvenpa, 1976:60). After the first heavy snow, toboggans could be constructed and used to haul supplies (Birket-Smith, 1930:40; Smith, 1982:12; VanStone, 1974:26), but snowshoes were not normally required until around the end of December when snows became deep enough to make walking without them difficult (Jarvenpa, 1980:31). By this time, Dené families were usually in the forest already, and the wood and other materials needed for the new equipment could be found with little difficulty.

8.5 **Winter.**

The Dené were among the few groups in North America to pursue the caribou year-round (see Burch, 1972:351; Gordon, 1990b:400), so in any season the location of the barren-ground caribou defined the area in which Dené families would live (Heffley, 1981:131; Sharp, 1981:223; Smith, 1978:69). In the winter this was mostly in the open lichen woodlands of the transitional forest, close to the treeline (Birket-Smith, 1930:29; Burch, 1991:442; Glover, 1962:116; Hearne, 1971 [1795]:6,80; Irimoto, 1981a:110; Jarvenpa, 1980:115; Sharp, 1981:223; Smith, 1978:71; 1981b:276; 1981c:136; Yerbury, 1986:130), but there would be odd years that the caribou pushed farther south than usual,

giving the Dené reason to move farther into the full boreal forest as well.[127]. With its greater shelter and firewood resources in addition to the caribou, the forest was a desirable place to spend the winter. If there was any time of year that Dené were likely to occupy the forests of north-central Manitoba, it would be during the winters.

In those years that the caribou did travel farther south, Dené families who accompanied them had a greater chance of encountering Cree (Smith, 1981c:136) with whom their relations could be strained, if not outright hostile. Out of fear of being attacked, families would normally try to keep to areas where Cree were not residing that winter. Additionally, they would have kept their camps well hidden from view from the rivers and lakes which the Cree used as highways in both summer and winter (Brumbach and Jarvenpa, 1989:33; Jarvenpa, 1982:285; Smith, 1981c:140).

In their winter ranges, barren-ground caribou were more dispersed than while they were migrating, and so Dené bands often broke up into smaller groups and spread out over the wider area as well (Gordon, 1975:71; 1990b:400; Heffley, 1981:138; Smith, 1981b:275). Neighbouring groups could pass information back and forth, through regular visits, on the location and movements of the caribou in the region. They moved when the caribou moved on to a new area and gathered together when the caribou gathered (Smith, 1982:13; Smith, 1978:82; 1981b:276). Although smaller than the groups residing together during the fall, winter hunting groups could still include from fifty to a hundred or more people (Gordon, 1990a:289).[128]

The opportunity to reside in larger groups over the winter, although not a guaranteed yearly event, was reasonably common (Smith, 1981b:276). It was probably considerably more common for the caribou-focussed Dené than for the Cree, who spent the majority of most winters in small groups hunting more diverse but less concentrated game. In a good winter, when the caribou population was high and the herds were fairly concentrated, these larger groups of Dené people could be sometimes supported by the local food resources for

extensive periods, only having to move camp a couple of times over the winter when other resources, like firewood, were becoming scarce within an easy walking distance, i.e., well within a kilometer, from camp (Hearne, 1971 [1795]:80; Irimoto, 1981a:110; Jarvenpa, 1980:114,115; Smith, 1982:14,15; Smith, 1981b:276).

In contrast, when the caribou were fewer and more dispersed, Dené families might have had to winter in smaller groups and move more often, depending on what other foods were available to them, especially once the fall surplus had been used up. In these years, families would eat a more diverse diet than when caribou were abundant.

A variety of smaller game animals would have provided much of the alternative meat at this time; hare were snared around the camps, as they were almost everywhere (Hearne, 1971 [1795]:223,383-385; Irimoto, 1981a:125; Smith, 1982:17; VanStone, 1974:25). Ptarmigan which moved into the forests during the winter could be taken as well in snares, nets, or with blunt arrows (Birket-Smith, 1930:26; Brandson, 1981:3; Smith, 1982:5), as could grouse when these were available (Hearne, 1971 [1795]:223). Lynx have been trapped and eaten by Dené in the northern forests in recent times (Jarvenpa, 1980:17), and they were probably taken in the past as well, by people setting up snares or deadfalls along game trails and in the wooded stream valleys used by the lynx (Jarvenpa, 1980:110,111). Porcupine could also be good eating, and while scarce north of the full boreal forest, were reasonably easy to catch and kill once they had been located (Hearne, 1971 [1795]:381). In recent times, Dené have made note of places where they had seen recent porcupine gnawing, often in jack pine or deciduous forest patches, so that they could return there if needed (Heffley, 1981:131; Irimoto, 1981a:103).

Two of the most important game animals to Cree - the beaver and the moose - were not much emphasized by Dené hunters, even in the winter months. Largely, this was because neither species were very common in the transitional forests inhabited by the Dené and because caribou could usually satisfy most of the peoples' needs even in this season (VanStone, 1974:24). Also, Dené found moose particularly difficult to hunt, especially in

the earlier parts of winter when the solitary animal could easily escape through snow that effectively slowed the more gregarious and shorter-legged caribou (Irimoto, 1981a:41). Regardless, if caribou were scarce and if moose were available, Dené would pursue moose. Sometimes this involved tracking the animals and trying to drive them into deeper snow in a way similar to the Cree, but they could also take moose in the snares set for large game along their trails (Blondin, 1997:20; Smith, 1982:17). Woodland caribou were probably not ignored if they happened to be in an area accessible to the Dené, although their meat was considered inferior (Hearne, 1971 [1795]:225). Beaver too could be hunted if available and necessary, although it was not common among the Edthen-eldili Dené (Smith, 1982:9). Black bear were taken occasionally by some peoples, killed in their dens as they slept (Blondin, 1990:211,212; Hearne, 1971 [1795]:369,371; Rogers and Smith, 1981:132).

Winter was the time that fishing generally took on the least importance for the Dené (Irimoto, 1981a:41). Fishing through the ice was considered to be too much work for too little returns when caribou were available (Smith, 1978:72), and given its limited importance during most winters, it seems that people simply angled at open water sites and through the ice, rather than setting nets (Birket-Smith, 1930:28; Hearne, 1971 [1795]:15; Smith, 1981b:281). As always, however, fish were an important back-up resource, and camps were rarely made very far from some sort of winter fishery from which whitefish, lake trout and/or jackfish could be taken (Hanks and Winter, 1991:54; Hearne, 1971 [1795]:15; Irimoto, 1981a:13,91; 1981b:49; Minni, 1976:60; Smith, 1981b:281; Tyrrell, 1934:525), usually on a lake. With the muskeg frozen in the winter, these fisheries could also include those inland lakes which were less accessible during the warmer season (Jarvenpa, 1976:60).

All the same, whenever possible, the Dené would focus on the caribou through the winter, and families tried to camp in places where they would be fairly central to the winter foraging range of a herd of barren-ground caribou (Smith, 1978:76; 1981b:281). Caribou

were greatly influenced by the snow, avoiding deep or dense drifts which slowed their movements and buried the ground lichens on which they largely subsisted in these months. So, particularly as winter progressed and the snows deepened, locations with only shallow or at least soft snow which could be easily nosed through were most attractive to them, and this is where the people knew to expect the caribou to concentrate (Burch, 1972:347; Heffley, 1981:134; Kelsall, 1968:68,69). Such locations included windswept hills and ridges and more exposed shorelines (Harper, 1955:99).

Barren-ground caribou congregated daily to rest on the frozen lakes and rivers next to their feeding areas. Snow accumulation was usually low on the ice, and the open surroundings allowed them to more easily detect the approach of predators (Harper, 1955:41; Heffley, 1981:134; Kelsall, 1968:69). Still, this was the most reliable place for the people to hunt caribou in the earlier parts of winter. In this season it was still very difficult to catch caribou in the bush because the snow was not yet deep enough to slow them down significantly (Irimoto, 1981a:103).

Snares could be set up to catch single caribou along their trails through the bush, and this could be quite productive (Rogers and Smith, 1981:132; Smith, 1982:15). However, at this time of year, caribou were most often caught by people approaching them out on the ice, where they were less wary, and herding them through drive lanes either into small pounds set up in the open areas (Birket-Smith, 1930:21; Hearne, 1971 [1795]:78; Heffley, 1981:137; Nash, 1975:3; Irimoto, 1981a:103; Smith, 1982:13), or at least towards waiting hunters. The likely regular exception would be those years in which the caribou were so dispersed, locally, that not enough could be taken at any one site to make the effort of constructing or even repairing corrals and drive lanes worth the effort. In those years, stalking the caribou and snaring them on their trails would have supplied most of the Dené's caribou kills (Smith, 1982:15). Any surplus meat could be fairly easily preserved by simply letting it freeze, although it was still dried in some cases (Birket-Smith, 1930:20;

Blondin, 1990:89; Irimoto, 1981a: 125), so that the families could live fairly easily until the meat ran out and they had to go out and hunt again.

By about the end of December, if snowshoes had not already been made or retrieved from an old cache, they would be made so that people could walk more easily over the deepening snows (Irimoto, 1981a: 126; Jarvenpa, 1980:31). The increasing cold also made the collection of firewood an increasingly important activity (Blondin, 1997:23; Bussidor and Bilgen-Reinart, 1997: 16; Irimoto, 1981a: 125), meaning that people might have had to move more frequently during the later winter, even if their stores of meat were holding out well.

The caribou tended to be even more dispersed in smaller groups at this time and moved around very little (Heffley, 1981:37; Irimoto, 1981a: 15,104), so communal hunting techniques were usually abandoned in favour of stalking.[129] By this time, the snow was deep enough that caribou could be caught in the bush by hunters on snowshoes. Men would go out in small groups, pairs or (rarely) alone to find the caribou, predictably in areas of lesser snow accumulation or out on the lakes. They could then drive the animals into the deeper snows and kill them with arrows or even with their daggers once the caribou had been worn down (Birket-Smith, 1930:20; Brandson, 1981:3; Heffley, 1981:37; Irimoto, 1981a:40,104; Rogers and Smith, 1981: 132; Smith, 1982: 10).

With the crusting over of the snow towards the end of winter, moose could be hunted in the same way as the crusted snow slowed them down enough for the Dené to be able to catch them. If moose were ever taken regularly by Dené, it would be at this time of year (Irimoto, 1981a:41). However, by this season the families were usually gathering in anticipation of the move back towards the treeline, thinking not of moose, but of the next caribou hunt.

9. Fur Trade Age Changes to Cree Seasonal Rounds.

9.1 Introduction.

Aboriginal cultures in North America have undergone considerable change since their first contact with European explorers, just as people had adjusted in earlier times in response to other changes in their physical and social environments. In the subarctic, the most rapid and dramatic of these culture changes are probably those which have occurred in recent times with the industrialization of the north and the increased contact with non-Aboriginal societies which resulted. But even in the early days of the fur trade there would have been some changes, particularly in certain aspects of subsistence and settlement.

The Early Fur Trade may be broken down into four periods: the earliest periods of trade west of Hudson Bay, beginning with the trade transaction between Henry Hudson and the Cree man in A.D. 1611 and followed by a period of more indirect trade from the St. Lawrence and Great Lakes regions; the period of Bay-side trade, A.D. 1668-1733, which was characterized by the establishment of direct trade along James and Hudson bays with minimal excursions into the western interior by traders; the period of early inland trade, A.D. 1734-1772, when the French and Canadians began to establish posts inland from the Bay; and the period of intense inland competition, A.D. 1773-1820, when these traders were joined by their English rivals in the inland trade.

The effects of the earliest trade west of Hudson Bay on Aboriginal land use, being primarily indirect and largely unrecorded, is not well understood. This transitional period is considered briefly in the introduction to the reconstructions of land use for the period of Bay-side trade, which is better known. Because the spatial dynamics of the western fur trade changed considerably when the Europeans moved inland from Hudson Bay, the ways in which Aboriginal people reacted to the trade would also have changed at this time. For this reason, the period of Bay-side trade is reconstructed separately from the periods of early inland trade and intense inland competition.

The lure and impact of the fur trade on specific groups of people also varied, according to variable accessibility of the posts, differing cultural values, and different environmental influences. Variability in ways of life among different peoples or even individual families in the boreal forest was no doubt always the case, across both time and space. Access to historical documents which describe a range of Aboriginal adjustments to the fur trade, however, makes this variability more apparent, so it has been possible to incorporate it into the following reconstructions. This was less straightforward for the Late Woodland reconstructions which, by necessity, were more generalized in addition to being more tentative.

While individuals of groups other than the Rocky Cree and Edthen-eldeli Dené may have been using the boreal forest of north-central Manitoba sporadically during the precontact periods (the Plains Cree and Swampy Cree nations and more westerly groups of Dené, for example), it appears likely that this use increased rather significantly during the fur trade, if for no other purpose than for travel to Hudson Bay. Some attention is therefore paid to peoples not previously resident in the boreal forest of north-central Manitoba in the reconstructions to be presented in the following chapters.

9.2 Cree Seasonal Rounds in the Period of Earliest Trade West of Hudson Bay and the Period of Bay-side Trade: A.D. 1611-1667, 1668-1733.

It seems likely that the effects of the fur trade on Rock Cree land use were relatively slight at first. There was a gradually increasing emphasis on hunting and trapping furbearers which, except for beaver, had rarely assumed more than secondary importance in the earlier economies. This increase in attention to furbearer taking may have been significant in the north-central Manitoba region during the earliest years of the western fur trade (prior to A.D. 1668), when this trade was primarily indirect, but would still have been minor in comparison to later years. Even in the early years of the Bay-side trade (A.D. 1668-1681), the trade posts were distant enough that what trade the Rock Cree may have engaged in was probably still mostly indirect. The effects of this early trade on Rock Cree

land use patterns probably involved more of an intensification and shift in existing practices than a major alteration of their existing seasonal rounds (Hamilton and Larcombe, 1994:32). This would have included a growing intensification of furbearer taking and the trade of these to neighbouring peoples with whom they probably already had trade relations (Brownlee and Syms, 1999:6,8).

In exchange for these furs, ever increasing numbers of European trade goods would have been traded into the interior. In these times, Cree used many of the new technologies and ready-made tools, such as metal needles and awls, knives, scissors and axes, and manufactured glass beads, primarily to save time and labour in their existing activities (Brightman, 1993:250,251). Still, access to certain trade items could have allowed quite significant changes to particular aspects of the seasonal round to have occurred quite quickly among those families who possessed these items (table 9.1).

Table 9.1 Examples of possible effects of trade items on Cree land use activities.

Copper kettles	Less time spent in manufacture of pottery; less time spent finding and collecting appropriate clays.
Ice Chisels	Winter fishing becomes easier; locations of thicker ice can be used; fishing can continue later into the winter. Chisels may also be used, like metal axes, to more easily break into iced-up beaver and muskrat houses; beaver can be hunted later into the winter.
Muskets	Increase in bear hunting.

Before long, from the time the Hudson's Bay Company first set up a post at the mouth of the Nelson River in 1682 (Smythe, 1968:78) until the movement of French traders into the territories west of Hudson Bay in the mid-18th century, Rock Cree living in this region were able to trade for those European goods which they desired with furs bought in turn from more distant neighbours unwilling or unable to travel to Hudson Bay to trade directly. In this lucrative position, the Rock Cree could have continued to trade and receive a

growing number of European goods without greatly intensifying their furbearer-taking activities.

More evident changes to the seasonal round of the Rock Cree in this period could have included an increasing interest in travel to the Bay in order to trade at the posts. Similarly, while they remained in this intermediate or 'middleman' trade position, travel to the western woodlands, the parklands, and the plains for collecting furs from the more distant groups would likely have increased. The lower Nelson and Hayes rivers, for example, would have seen more use as travel routes to and from the Bay as this period progressed. With the establishment of Prince of Wales Fort in 1717, the previously avoided lower Churchill River would also have become more travelled.[130]

Among the Rock Cree, it was not necessary for whole bands to travel to the posts on the Bay or to meet with neighbours farther inland. A smaller group could make these journeys on behalf of many others (Ray, 1974:69). As well, unlike the Swampy Cree 'Homeguard', who spent much of the year around the posts and visited them often, few Rock Cree apparently came to the Bay more than once a year (Bishop and Ray, 1976:131; Thistle, 1986:33). Interest in the fur trade continued to grow rapidly through this period, however. By the time posts moved inland, the changes to Rock Cree seasonal rounds had intensified and affected most families to some extent.

Bishop and Ray (1976:131; Ray, 1978:26,28) have outlined the different levels of involvement in the fur trade for peoples in increasingly distant locations from the Hudson Bay posts prior to the expansion of the trading companies inland: the Local, Middleman, and Indirect Trade areas. In Local areas - those surrounding the trade posts - the Native people hunted and trapped for the posts, and they traded directly with the Europeans. Being close by, they could visit the post more than once a year. In the Middleman area, farther away from the post, people captured some furbearers themselves, but most furs were obtained through trade with more distant groups in exchange for used European items at marked-up prices. Although too far to visit regularly, these people were close enough to the

posts to make one trip each year (though they did not always come yearly). In the Indirect Trade area, a considerable distance from the posts, Natives obtained most of their European trade goods through middlemen. Only a few of these people bothered to make the long, hard journey to the posts and did so only rarely.

According to the above model, during the earliest period of trade west of Hudson Bay, peoples occupying north-central Manitoba would have been in the Indirect Trade area. The Swampy Cree of the Hudson and James Bay lowlands became included in the Middleman area as posts moved farther west in the mid-1600s (Brownlee and Syms, 1999:47,48). During the period of Bay-side trade the Local Trade area consisted mostly of the Hudson and James Bay lowlands, part of the region historically occupied by the Swampy Cree. The Rock Cree of north-central Manitoba and adjacent Saskatchewan occupied the northern portion of the Middleman area, while the people farther west, in the Lake Athabasca region in the north and on the plains in the south, traded only indirectly. Those Dené who participated in the fur trade at this time also did so mainly through the Cree middlemen (Bishop and Ray, 1976:131; Ray, 1978:28,29).[131]

While there was apparently little need for substantial change to the land use of the Rock Cree during the Bay-side trade period, their involvement in trade - whether as trappers, provisioners or middlemen - did require some adjustments to their seasonal rounds and economic systems in order "to facilitate this trade" (Bishop and Ray, 1976:132). Certain minor adjustments, at least, had most likely already occurred before any European traders ever entered this region. As noted, the French fur trade in the St. Lawrence and Great Lakes regions to the southeast could have had an indirect effect on the economy and material culture of Rock Cree since early in the 1600s. Assuming that the new trade items inspired an increased interest in trading furs above what the Rock Cree may have traded traditionally, at least some Cree of north-central Manitoba were probably intensifying their fur trapping activities. Extended journeys south and east to trade with neighbouring and more distant

peoples may not have represented a new pattern, but the regularity of such journeys to meet with these people might have been less common traditionally. This is difficult to determine.

For this reason, the Aboriginal land use patterns of the Cree should not be assumed to be equivalent to those recorded at the onset of Bay-side trade (Bishop and Ray, 1976:125), but they cannot be unquestionably concluded to have changed significantly, either. The extent of any protocontact adjustments is not known. Nonetheless, involvement in the fur trade economy at this stage was probably relatively minor in comparison to when trade posts were later established on Hudson Bay, increasing access to the posts for local and more distant Cree alike. Reconstructions of these postcontact changes to the seasonal round will now be made.

For the reconstruction of the precontact seasonal rounds described in the previous chapters, it has been hypothesized that protocontact changes to the seasonal round and economy were in fact restricted to the taking of a few more furbearers each year, the occasional extensive journey to meet with middlemen or traders farther southeast being made somewhat more often than traditionally, and the addition of trade goods such as axes, ice chisels, knives, kettles and the ever-popular beads. Several classes of these trade goods made existing domestic and subsistence activities easier to do. But with the exception of the kettles, which appear to have very quickly replaced ceramic pots and the need to make them (Kidd, 1957:13; Syms, 1999: personal communication), these new items probably did not much affect the seasonal rounds of activities themselves. This is, however, only an hypothesis.

9.2.1 **Spring.**

Just as it had in the days prior to any contact with the Europeans, spring during the fur trade was hailed by warming temperatures and crusting snow, increasing activity of game and fish, and promise of a coming end to the hungry times. For the Cree living in north-central Manitoba, there was little change to how they went about feeding themselves at

this time of year. If there was any way in which the early Bay-side fur trade affected Rock Cree subsistence in this season, it was through the introduction of metal ice chisels. Chisels made it easier to cut through ice, so that people were better able to fish in places where the ice was quite thick (Gillespie, 1981a:16; Hanks, 1983:352; Rogers and Smith, 1981:134). Lake ice was typically at its thickest from mid to late winter (Glover, 1962:30), and ice chisels were no doubt still appreciated during the first few weeks of spring. Early spring fishing may have increased slightly.[132]

In years before the fur trade, most families had made early spring journeys to the places where they planned to spend the break-up. When the European trade goods first began making their way west of Hudson Bay, and particularly with the arrival of the trade companies themselves, early spring travel may have increasingly been made to distant destinations for trade. While travel by the Rock Cree at some point during the spring to meet with distant peoples who could supply them directly or indirectly with goods from the upper Great Lakes region was not a new event (Brownlee and Syms, 1999:6), it had not necessarily been an annual event traditionally. It might be suggested that with the increasing flow of European trade goods west of Hudson Bay, Rock Cree might have become increasingly curious and interested in the new items. Growing numbers of Rock Cree might then have added these destinations more regularly to their regular travel plans.

Prior to the establishment of the posts on the west side of Hudson Bay, such travel could have brought them to meet with peoples who had connections to the St. Lawrence River, Great Lakes and, later, the James Bay regions. Once posts were built by the mouths of the Nelson and Hayes rivers in 1682, the Rock Cree were better positioned to take on the role of middlemen themselves. It was common for Cree middlemen to travel at the end of the long winter to places where they could meet with more distant peoples to trade their used European goods for furs procured over the winter by these others. For example, the Western or Plains Cree, who at some time in the past came to spend their winters on the

Plains, would meet with Assiniboin, Blackfeet, Atsina and other neighbours at pre-arranged locations near the eastern edge of the Plains in the early spring (Burpee, 1973:37,38; Williams, 1969:193).

It should be noted that oral traditions among the Rock Cree record that a distinct group of Cree called *Misinipiyithiniwak*[133] once travelled regularly between the mouth of the Churchill River at Hudson Bay and western Alberta until sometime around the beginning of the 1700s at which time they disappeared (Brightman, 1989:2). This would suggest that they were making these journeys for reasons other than the fur trade, as Prince of Wales Fort was not yet established by the time they are said to have disappeared. If this was the case, then perhaps the practice of some Cree travelling between the Bay and the west was not so new in those parts and only the specific purpose of the journeys and the identity of the participants may have changed.

Regardless, the middleman trade was quite productive and would have attracted many Cree to participate. This likely resulted in at least an increase in the regularity of trade between Rock Cree and more western peoples from the plains. By the middle of the 18th century it appears that some of the Rock Cree had adopted the Plains Cree pattern of winter bison hunting and spring trading on the Plains (Brightman, 1993:9). Rock Cree who remained in the forest were also trading with more distant groups to the west and north, including the Dené. Cree trade with Dené groups was possible in spite of the enmity between them, and Cree middleman status persisted at least until the entrance of the Chipewyan into the fur trade after the establishment of Prince of Wales Fort. At that time the Chipewyan took over the roles of Homeguard for Prince of Wales Fort and of middlemen between the post and the northwestern Dené (Pettipas, 1993:8; VanStone, 1974:91,92; Yerbury, 1986:17).

Meetings of the Cree with these western and northern trappers would probably have taken place in the early parts of spring, prior to break-up. This would have allowed the middlemen to acquire the proceeds of the winter's trapping from their neighbours, and, in

the case of trade with (or raids on) the Dené, in a season when they were still camping within a reasonable distance of each other.

While most of the Rock Cree restricted their involvement with the Bay-side posts to their participation as middlemen, many of the Swampy Cree in the Hudson and James Bay lowlands quickly took up regularly provisioning the posts in return for trade goods and food rations. These Homeguard generally retreated inland into the forest for the winters, but a few families began to winter nearer the posts instead (Bishop, 1972:66; Brightman, 1993:247; Drage, 1982:23; Glover, 1962:116; Mason, 1967:7; Thistle, 1986:16,17). If any surplus moose or caribou could be killed by these Homeguard throughout the winter or during the early spring hunts inland, they would sometimes travel the short journey to the coast and sell the meat to the posts, in addition to bringing any furs which they had trapped since their last visit (Williams, 1969:192).

Even more of the Homeguard would travel to the coast in the spring, a little ahead of break-up, in order to hunt the great numbers of waterfowl that would arrive at the Bay with the opening of the water (Drage, 1982:18; Russell, 1975:422). As the years passed and more people became involved with the traders, some inland Cree from farther west may have begun to travel to the Bay on foot over the frozen Nelson and Churchill rivers systems for the spring goose hunt as well (e.g. HBCA, B.91/a/1:7; B.91/a/2:8).[134] In such cases, it would probably be only a few individuals who travelled to the Bay, leaving the others inland at good fishing sites to build canoes and support themselves by fishing and capturing waterfowl and small game while waiting for the goose-hunters' return.[135]

More often, however, perhaps after meeting with their neighbours for trade - if such a journey had been made that year prior to break-up - Rock Cree families simply moved on to the same sorts of favourable locations for break-up as they had before the fur trade, to make their canoes if this was necessary, and to procure what food was available (Burpee, 1973:42; Ray, 1974:45,46; Russell, 1991:93). Travel to the Bay would be made later.

The majority of furs being brought in to the Bay-side posts by the inland Cree at this time were procured from the more distant neighbours, but many families did at least a little of their own trapping as well (Ray, 1974:46,69; Russell, 1991:105). Although people had previously captured them for food during break-up and in other seasons, the taking of furbearers was a practice that would likely have intensified among most of the Cree when furs acquired a new value in the fur trade. This intensification was at first rather slight, however (Brightman, 1993:247,248; Helm et al., 1981:151), and probably varied from family to family.

The period before and during break-up was a good time for taking furbearers - particularly beaver and muskrat. These were just becoming active in and around their lodges at that time of year (Meyer, 1985:219; Rogers and Rogers, 1959:37; Smith, 1975:180; Tanner, 1979:20; Winterhalder, 1978:405,456). Cree interested in taking their own furs went on spending break-up around open-water sites, but now particularly emphasized those which had productive beaver and muskrat marshes nearby (Pettipas, 1980:185; Ray, 1974:46; Russell, 1991:93; Smith, 1975:180). This way they could combine this activity with the waterfowl hunting and fishing that was still the staple of this season, building or repairing canoes and otherwise preparing for the summer at the same time (Pettipas, 1980:185; Tanner, 1979:40).

In addition to the beaver and muskrat which were the most commonly taken furs in this season, otter, mink, and some marten could also be trapped, predictably found drawn to the open water which attracted the people in the first place (Chansler, 1968:125; Rogers, 1963:47; Rogers and Rogers, 1959:137; Taylor, 1980:16).

Those groups who had traditionally gathered together in the spring continued to meet in large groups in their gathering places (e.g. Russell, 1991:97-99,104). If anything, spring gatherings of larger groups would have become even more common after the introduction of the Bay-side trade due to the meetings of Cree with other, more distant

peoples in the early spring. Following break-up, it was still common for Cree to come together into larger groups for Goose Dance ceremonies (Meyer, 1975:435),[136] these coinciding with the intensive hunting of waterfowl done at that time (Tanner, 1979:20). The spring was, as ever, a spiritually important time, for both individual and communal ceremonies.

The groups in which families lived had customarily grown in size as spring progressed into summer, and by the time summer had set in, most of the regional band could have come together at a single agreed-on location for the annual gathering. For the most part, this pattern did not change much in the early years of the fur trade, although some of the gatherings took on a new nature. Both Plains Cree and Rock Cree trading parties would set out after break-up, by canoe, to reach the Bay by June or July in order to trade with the Europeans over the summer (Burpee, 1973:47; Gillespie, 1975:359; Mason, 1967:17; Pettipas, 1980:185; Smith, 1981a:260). From the beginning, at least small groups of men would travel, with or without their families, to the posts on the Bay on behalf of many others, and by the mid 1700s, rather large trading parties of inland Cree would regularly come together for this journey (Brightman, 1993:9). Members of these parties often forsook joining the gatherings of their own bands inland in order to participate in the summer gatherings which had begun to take place around the trade posts (Mason, 1967:17; Yerbury, 1986:34).

All the same, even when the size of the trading parties grew, they still apparently represented only a small percentage of the Rock Cree population. Because the inland Cree and their neighbours were not at this point intensive trappers, the loads to be taken to and from the Bay were still relatively small. A few individuals or families could travel to the Bay on behalf of several others (Burpee, 1973:47; Glover, 1962:50; Pettipas, 1980:185; Smith, 1981a:260). The families of the people who made this journey often accompanied them part way, to be left behind at some place inland where the trade party would meet up with them again later in the summer (Burpee, 1973:20; Linklater, 1994:88; Mason, 1967:17).[137]

Overall, however, most families continued to make the late spring journeys by canoe to their traditional summer gathering sites as they had before (Smith, 1981a:260), fishing, hunting waterfowl and collecting newly emerging plants for food, medicine and raw materials for making and repairing equipment and other items along the way.

9.2.2 **Summer.**

For the majority of Cree people, the Bay-side fur trade brought fairly little change to their summer activities. Only a few people from each band would normally leave the forest and the rest of their people for the Bay following break-up. These would spend at least the first part of the summer at and around the trade posts - June, July and sometimes August being the primary time for trade in this period (Gillespie, 1975:359; Pettipas, 1980:185; Ray, 1978:30).

In addition to trading and provisioning themselves with fish, the people visiting the posts would assemble together for feasting, dancing and other events typical of gatherings. Before long, the land around the Bay-side posts had become sites for regular summer gatherings among some groups of people (Mason, 1967:17; Yerbury, 1986:34). These gatherings were multi-ethnic. At the Bay-side posts, Rock Cree from the forests would find themselves among the Swampy Cree trappers and provisioners who chose to spend the summers fishing for the posts in between the spring and fall goose hunts (Drage, 1982:23; Honigmann, 1956:32). At the posts at the mouths of the Nelson and Hayes rivers they were joined also by some Plains Cree and Assiniboin from the west. At Prince of Wales Fort they would find eastern Dené peoples (Pettipas, 1993:8,14). Meetings of different groups of people would have occurred in the past as well, for trade, information exchange, and other reasons of mutual concern. Such meetings may not have been quite so regular in the days before the fur trade, however.

Sometimes strife would arise between groups camping around the posts, leading to tension and hostilities, and they would have to keep well apart, even in the neutral zone of

the trade post. This problem was particularly common between the Cree and Dené in the earlier days of the fur trade, before the newly established peace between them had had a chance to take hold some time after it was first made in 1715 (Yerbury, 1986:21,34).

The trading parties would remain assembled around the posts at least until they had acquired their goods, sometimes having to wait for the year's new shipment to come in by sea. Once outfitted, some of the Rock Cree may have stayed on like the Homeguard, to wait for the fall goose-hunt. This would have left the journey back inland quite late, making it difficult to rejoin their families before the freeze-up. Most middleman traders would have returned inland after the trading was over to where they had agreed to meet up with their kin (Mason, 1967:17; Russell, 1991:92). Some people would leave the posts early enough to participate in the summer fishery and gathering inland (e.g. Rogers and Taylor, 1981:232), while those who left later, or had farther to go, would have to travel directly on to their fall camps, trying to get there ahead of the freeze-up (Smith, 1981a:260).

It appears that the sizable groups of mostly elders and children would sometimes spend the summer looking after themselves at the places where they were left behind by the trading parties journeying to the Bay. These would normally be places with rich fish, waterfowl and small game resources, and with plants to harvest. For example, Linklater (1994:88) explains that the name Notigi Lake means "Old Woman's Lake" because this is where the families of the trading parties from the Nelson House region were left behind to be looked after by the Grandmothers who would hunt, trap and fish for their subsistence.

Inland, Cree families would spend the summer much as they had before, fishing and socializing, often at gathering places (Brightman, 1993:10). What made a good gathering place prior to the fur trade - primarily proximity to a good summer fishery and adequate open space for large groups (Tanner, 1979:1,49) - continued to be important after, as well. For this reason, many of the most important gathering places continued to be used throughout the fur trade (Meyer and Thistle, 1995:428). Of those families who had been

left behind by trading parties, some might have retreated farther inland after parting, to join up with the rest of the band at the traditional gathering places. They might afterwards make their way to an agreed upon place to meet up with the returning trading parties, or they might wait for the trading parties to come to the gatherings themselves.[138]

Among the many activities which had normally been carried out over the summers in the more leisurely setting of the gatherings was manufacture and repair of tools, pots, baskets, nets, clothing, and other items which would be needed in that and coming seasons. As trade goods became increasingly common west of Hudson Bay, many of these activities were made either easier or were hardly even required anymore. Sewing of clothing and other items, for example, was made significantly easier with the introduction of metal knives, awls and sewing needles and of commercial fabrics (Van Kirk, 1980:76). Similarly, metal tools would have made wood-working considerably faster. After metal tools were introduced, the collection and use of stone for tool-making declined rapidly. It would have remained important for some time, though, at least for the making of efficiency tools, such as simple flake tools. In this case, tool-makers would have been less concerned with finding sources of the ideal stone to work with, as efficiency tools are commonly made from whatever workable stone can be found at hand. This is in contrast to fine lithic tools like knives and projectile points for which quality stone such as chert was often selected (Gero, 1991:172). As copper kettles quickly replaced Aboriginal pots, even before the end of the Protocontact Period (Syms, 1999: personal communication), there was similarly little or no need at this time to search out appropriate sources of clay and temper for pot-making.

As before, moose, small game and plants would have been sought out for a change of pace from fish during the summer months. Among the small game previously taken during the summers by Cree, beaver and otter had been occasionally shot, trapped and netted in the water, although both their meat and furs were in rather poor condition during the warmer months (Hearne, 1971 [1795]:238-240). This practice continued with the fur trade, much to the distress of the traders, who saw the killing of furbearers in seasons

during which their furs were so poor as wasteful. Some people did try to trade the furs trapped during the summers, but as often as not the furs were so thin that they were simply singed and eaten (Hearne, 1971 [1795]:240; Rogers, 1963b:75). Suitable furs may have been saved for trading when furbearers were taken for food. It is unlikely, however, that there was much if any increase in the taking of furbearers during the summer months specifically for the purposes of trade.

By the end of the summer, the family members who had travelled to the posts on the Bay were usually back and had distributed the trade goods accordingly. The Cree would then begin to disperse as usual for the fall.

9.2.3 **Fall.**

The early days of fall were a time for travel among the Cree. In days of the Bay-side trade, just as before, this entailed families leaving the summer gathering places by canoe to disperse into somewhat smaller groups for the journey to their fall hunting camps. The only major difference for the Rock Cree in this period may have been that now some of the people had to sometimes begin this trip from farther away on a more regular basis. Those people who had participated in the trading parties had to journey from the posts on the Bay, if they had not already returned inland earlier in the summer.

Not only Rock Cree, but also any Plains Cree who had gone to the Bay as middlemen, would have to have made that return trip upriver by the end of the summer if they were to reach their fall camps before freeze-up. They would have crossed the Lowlands and then the boreal forest of Manitoba, taking whichever river routes would quickly, easily and safely bring them to their destinations. [139] Rock Cree groups travelled to and spread out mainly along the Churchill, Nelson and Hayes rivers and their tributaries. Their Plains cousins, having rejoined their families inland, continued on to the west and south along the Hayes and Saskatchewan rivers until they reached the Parklands. There,

most of them left the boreal forest behind until spring (Burpee, 1973:17,20; Russell, 1991:92,93,97-99).

Many of the Swampy Cree Homeguard came to hunt at the posts only in the spring and summer. These people retreated inland in the fall in order to hunt the woodland caribou as these migrated from the Lowlands to the interior around the month of September (Drage, 1982:23; Parker, 1972:18). By leaving at this time, they could be well into the interior forests in their traditional wintering grounds before freeze-up. There they could spend the winter hunting, trapping and fishing with more success than they would have in the Lowlands closer to the Bay. The traders on the Bay could not survive without the help of the Homeguard, however. From the beginning of the Bay-side fur trade, they would commission a number of families to remain near the coast past the summer for the fall waterfowl hunt as well (Bishop, 1972:66; Drage, 1982:23; Russell, 1975:422; Williams, 1969:192). This new pattern of remaining at the Bay through the fall meant that those families had to give up the caribou hunt, as the woodland caribou migrated inland around the same time as the waterfowl were passing the posts on the coast (Russell, 1975:422,433). It also meant that they could not get out of the Lowlands before freeze-up, and this effectively kept them near the coast throughout the winter, getting provisions from the posts as necessary (Bishop, 1972:66; Russell, 1975:429).

Back in the forest, once all of the trading parties had returned to their bands, the fall season continued on much as it had before the fur trade. In these earlier years, activities related to the fur trade economy were fitted into the seasonal round wherever convenient. Furbearer trapping and hunting was added or increased only when it would not interfere with important social or subsistence activities. Even then, only as many furs were taken as needed to purchase the trade goods desired that year (Brightman, 1993:248,250; Helm and Leacock, 1971:359; Helm et al., 1981:151; Thistle, 1986:33,36).

The early fall was always a season in which there was much work to do, much of it requiring co-operation of a number of families. In addition to the waterfowl, caribou and moose hunting, fishing at the spawning runs, and collection of berries, seeds, nuts and edible and medicinal roots, there were many preparations to be made for the winter. While manufactured cloth was increasing in availability, the hides of the large game taken still had to be prepared for use for sewing at least the warm traditional footwear and mittens, and for other purposes for which cloth did not rapidly replace hides (Kidd, 1957:13). Any surplus meat, fish and berries had to be dried and stored for transport or caching. As the snows and freeze-up approached, the early winter camp sites would have to be reached and the camps prepared. A store of dried firewood, moss and other important plant materials had to be made. None of this seems to have changed during the years of Bay-side trade.

Previously, beaver and especially muskrat had sometimes been shot or trapped in snares and deadfalls in the early fall - up to and through freeze-up - around the places where they were building or repairing their houses. This could be done whenever people were already near or in these habitats for other activities. For example, traps and snares could be set and checked in conjunction with the waterfowl hunt anytime that the marshes at which the hunt was taking place bore signs of beaver or rat activity (Chansler, 1968:74,78; Meyer, 1985:213; Rogers, 1963b:42; 1973:54; Rogers and Smith, 1981:133; Snortland-Coles, 1979:103; Winterhalder, 1978:221,405,430). Otter were also sometimes netted, shot or trapped in and along the streams they occupied (Rogers, 1963b:41), and may have been sought during fall fishing. Lynx could be snared or trapped inland (Rogers, 1963b:42; 1973:55), the traps set at the same time that snares were set for hare. With the fur trade, some slight additional effort may have been put into this opportunistic trapping. More intensive trapping efforts, however, require a dedication to the trapping and a greater dispersal of the trappers (Helm et al., 1981:152) that would have been at odds with the communal hunting, fishing and food preservation activities traditionally important in that season.

Furbearer taking may have been more significant during and after freeze-up, once families were already settled into their early winter camps. Freeze-up had been a time at which beaver had already been an important source of food, often leading people to set up camp near the marshes where beaver houses could be found and broken into (Snortland-Coles, 1979:103; Winterhalder, 1978:430). By this time of year the fish runs were beginning to fall off, although net fishing could remain productive (Ahenakew and Wolfart, 1992:147), and moose and woodland caribou were moving inland making them difficult to hunt (Boulanger, 1971:51; Snortland-Coles, 1979:103). This made small game among the more reliable sources of food.

Only in those years that the barren-ground caribou made their way into the Cree territories was large-game hunting a dominant activity during the late fall and early winter seasons. When this was not the case, subsistence activities were typically directed at harvesting fish and small game. Furbearer trapping and hunting fit in well with this pattern. Because of this and because the quality of the fur and meat of furbearers tend to be very good during the late fall to early winter, the months between freeze-up and the beginning of midwinter was one of the two principle seasons for trapping for trade (Anderson, 1961:107; Smith, 1975:179,180; 1981a:260; Tanner, 1979:20), the other being the early spring.

In addition to beaver, which had always been important in this season, furbearers most commonly trapped after freeze-up and into the winter included otter and lynx which could be taken as they had earlier in the fall (Rogers, 1963b:41,42; 1973:48,55). Muskrat, more commonly hunted or trapped in the spring and early fall, could also be taken after freeze-up, by breaking into their houses and spearing them (Meyer, 1985:213; Snortland-Coles, 1979:103). Mink, marten, fisher and weasels could be trapped at this time, if desired, in deadfalls set up in their habitats. This early winter season, when they were fattest, was the only time that these particular furbearers had been worth taking for food other than in times of starvation (Rogers, 1963b:42; 1973:53,54). Wolf, wolverine and fox, which had not

previously been killed for food except when nothing better could be taken, could similarly be hunted after the freeze-up for their furs (Rogers, 1973:56).

If enough beaver could be taken from their houses to use for the limited trade the Cree were engaged in at this time, there was little need to trap furbearers like these which were not traditionally emphasized for food. The interest in taking furbearers did grow to some extent during the period of Bay-side trade, however. It is possible that families may have already begun to favour those early winter camps that were located in areas with access to habitat productive of the targeted furbearers (e.g. Pettipas, 1980:201).

While the meat of most of the furbearers was edible, particularly when they were fat, the captured furbearers alone could rarely feed whole groups for long. It was important to continue fishing, hunting fowl and other small game like hare and porcupine, and whatever large game the hunters might come across. For this reason, furbearer hunting and trapping even in this productive season could not become a primary economic activity among the Cree - not in this period of Bay-side trade, or at any point during the early fur trade. At this time, given their relative lack of dependence on the trade, anytime that people found that there was a shortage of food, they would simply give up on trapping and move on, if necessary, to where the hunting or fishing was better (Rogers, 1963b:48).

To this end, fur trade technology offered some new advantages for subsistence pursuits. Metal ice chisels, being most beneficial in the mid to late winter when ice was at its thickest, could still cut down the amount of time and effort that went into preparing holes for ice-fishing in any season of frozen water (Gillespie, 1981a:16; Hanks, 1983:352; Helm and Leacock, 1971:346; Mallory, 1975:5). This may have resulted in an increase in early winter fishing or it may have simply made the existing level of fishing easier.[140]

It has been suggested that the use of muskets resulted in a slight increase in the amount of solitary large game, including woodland caribou and moose, that could be hunted in the late fall and early winter (Brightman, 1993:249). In prior times, these animals were not regularly hunted between freeze-up and mid-winter. After the rut they moved farther

inland from shore where they were difficult to follow (Snortland-Coles, 1979:103). Because their hearing is good and the snow not normally deep enough to slow them down until sometime in December, it was extremely difficult to stalk and kill a moose or woodland caribou (Boulanger, 1971:51), particularly with bow and arrow.

Firearms could increase the distance from which game could be killed, making it easier to hunt these animals at this time of year. This eventually led to an increase in the amount of moose and caribou taken in the months just after freeze-up (Brightman, 1993:249; Rogers, 1963b:40). However, reliable firearms and ammunition were not traded in sufficient quantities to significantly replace traditional hunting technologies until considerably later in the fur trade, after 1820 (Helm and Leacock, 1971:359). Even more importantly, the muskets available in the period of Bay-side trade were of questionable reliability for hunting, as they often broke in the cold and were inaccurate at all but close distances (Given, 1987:10; Helm and Leacock, 1971:359; Sharp, 1977:39).[141]

Overall, the practices of Rock Cree during the fall and early winter season probably did not change all that much, other than a slight intensification of trapping and hunting of furbearers at times that these had already been taken for food and fur.

9.2.4 **Winter.**

The land use practiced by the Rock Cree after freeze-up continued on through the early winter until about December or January, when the mid-winter's cold and the deepening snows caused the game and fish to become dispersed and relatively immobile. For those people continuing on in the boreal forest during the years of Bay-side trade, the early winter was a time for fishing, small game taking and hunting what large game they could. Barren-ground caribou were important in years that they came into Cree territories, even when they had begun to disperse for the winter. Furbearers, especially beaver, were taken when convenient, and the furs prepared for trade in the spring. But as long as they held on to the middleman trade, Cree really did not have to capture any more furbearers than

remained scarce or difficult to hunt in the mid to late winter, beaver could usually still be taken reliably, if not easily (Tanner, 1979:21). Still, Cree perceived this method of hunting, breaking into iced-up beaver houses, to be more work for less returns than big game hunting (Brightman, 1993:342). For this reason, wherever moose, caribou or bear could be taken in large enough amounts to sustain the people, mid-winter beaver hunting would not have increased greatly over previous years.

All the same, mid-winter furbearer taking was possible. Most furbearers did remain active through the whole winter, although their mobility was often significantly reduced during the mid-winter, increasing again towards the end of the winter. Aside from beaver, other furbearers may also have been taken in slightly greater numbers through the mid and late winter months, if this could be done without too much extra effort. Lynx, otter, mink and marten have in recent times been trapped or shot through all of the winter months (Rogers, 1963b:42; 1973:53-55). Marten in particular seem to have been most commonly taken in the late winter (Pettipas, 1980:197). Muskrat, like beaver, were rarely taken in the mid-winter, but this activity often resumed with the approach of spring, before break-up (Pettipas, 1980:197; Rogers, 1963b:47).

It is possible that some Cree in the boreal forest regions were already trapping and hunting more of these diverse furbearers by the period of Bay-side trade. However, of the furbearers which came to be valued during the fur trade, only beaver had ever been emphasized for food in earlier times (Helm et al., 1981:150). If furs were to be taken for trade during the Bay-side trade period, when Cree traders could get most of the furs they needed from their neighbours, most of these would probably have continued to be beaver.

It may be reasoned that in this time the Rock Cree who had remained in the forested regions were probably not making any significant changes to their pre-fur trade winter activities. The newly emerging interest in taking furbearers for trade could be fit into existing patterns of small mammal hunting and trapping - an activity which could already assume primary importance in at least some seasons and some years, when large game was

scarce. The main economic change of the Bay-side trade period was likely just that new technologies were making it easier to do what they had already done before.

Aside from the technological and economic changes which began during the period of Bay-side trade, another consideration may have affected Cree land use, particularly in the winter and spring seasons. This was the apparently growing animosity that existed between themselves and their northern neighbours, the Dené. Always marked by a certain level of tension, their relations with these people became marked by increasing hostility. From the onset of the western Canadian fur trade until a tentative peace was established sometime after 1715, the periodic raiding which had long been going on between the Cree and Dené escalated (Gillespie, 1975:361,362).

Cree raids on Dené were probably most common in the spring and early summer months, when attempts were made by Dené to reach the posts at that time of year. The Cree found the position of middleman between the Bay and their western and northern neighbours to be quite lucrative and tried to monopolize access to the northern trade posts. They accordingly made it difficult for Dené to reach the posts on the Bay (Yerbury, 1986:21).

The hostility could also have been a problem in the winters. This was already the time of year that the two peoples were in closest proximity to each other as Dené came south of the treeline for the winter. With the fur trade, Dené who desired the new trade items now had even more incentive to travel farther into the boreal forest, as furbearers were richer there than in the transitional forest lands of the Dené. The danger of Cree violence, however, resulted in there being only a few Dené who ventured into these trapping lands (Hearne, 1971 [1795]:177).

Cree may have even begun travelling farther north in the winter or spring in order to raid Dené for furs and trade goods, as well as for prisoners. The effect on land use of these raids would have been, primarily, an increase in the addition of travel to certain destinations,

Dené camps, when the opportunity presented itself. Attacks were most often initiated by Cree on Dené, forcing the Dené parties into a defensive position. The Cree themselves were said to rarely be in much fear of attack (Jarvenpa, 1982:285; Smith, 1981c:140). In this period of tense relations, though, it would seem likely that Cree would have been paying at least slightly more attention to their safety from attack than they would have had to in previous or later years. Presence of a vantage point from which they could spot approaching enemies may have become that much more important in choosing a camp site, as could the overall defensibility of the camps, for example.

By the end of the period of Bay-side trade, a peace had been established between the Cree and Dené peoples. Dené could visit the posts and trap and hunt in the full boreal forest in relative safety. Relations remained tense overall, but other than occasional minor resurgence, the raiding had ceased (Gillespie, 1976:361; Hearne, 1971 [1795]:81-83; Smith, 1981b:273; 1981c:137; Yerbury, 1986:44). For the Cree, any concern with safety from raiding (or with initiating the raids) would have been largely restricted to those earlier years.

9.3 Cree Seasonal Rounds in the Periods of Early Inland Trade and Inland Competition: A.D. 1734-1772, 1773-1820.

9.3.1 Early Inland Trade (A.D. 1734-1772).

The period of early inland trade (1734-1772) was a period of transition; many of the new trends which represented changes from the earlier land use patterns of the Bay-side trade years (1668-1733) and which became part of the regular seasonal rounds of the Cree during the period of inland competition (1773-1820) began at some point during this time; but at the same time, many aspects of the Bay-side trade period land use persisted.

Early inland trade, as defined here, began with the establishment of the first trade post in the interior west of Hudson Bay. As noted, there had been French *coureurs de bois* travelling through the interior during much of the period of Bay-side trade, although posts were not established (Russell, 1982:101,102). With the exception of Henry Kelsey who

travelled for exploration purposes to the plains in 1690, the English had largely remained on the Bay (Newman, 1985:210). During those earlier years, the presence of inland traders, although significant, was not reliable enough to have any significant effect on the lives of most Cree. The French trade posts, strategically placed along major water routes in order to intercept trading parties on their way to the Bay (Russell, 1982:106), were somewhat more stable. This set the stage for a shift towards the direct trade in the interior that would become the norm by the early 1770s, when the Hudson's Bay Company was forced to establish posts inland as well.

By the end of the period of Bay-side trade, Cree participation in the fur trade had grown considerably since their initial exposure to it. However, even at this time, there was still only minor commitment of time to trapping and trade above that traditionally practiced. There were still a relatively small number of people travelling to the Bay each year, trading furs on behalf of the rest of the people, and many of these furs were still bartered from more distant groups rather than being trapped locally.

Even after the French began to set up trade posts in the western interior in 1734, there was little incentive for the inland Cree to change their seasonal rounds all that much. Direct inland trade was not much more reliable with the establishment of these early French posts than it had been before: the fighting between the French and English suppliers often led to a lack of trade goods or of traders in the interior; and with the capture of Montréal by the English in 1760, French trade into the west was cut off entirely for some time (Russell, 1982:107,113). Many Cree continued to choose to travel to the Bay for their trade (Russell, 1982:108). Because of the sporadic nature of the early inland trade, the Rock and Plains Cree were able to hold on to their middleman positions through most of this period (Ray, 1974:69; Williams, 1969:193).

Still, enough inland Aboriginal trade had been drawn away from the Bay by this time that, in 1754, the HBC did start sending men into the interior on an annual basis to try to draw the Cree and other western peoples back to their posts (Russell, 1982:108). Things

began to change even more rapidly after the Canadian (St. Lawrence) traders moved in to take over the interior trade which had been abandoned by the French when the Canadian Territories were ceded to the English in 1763. The Canadians were a strong presence in the western interior and before long they were winning away almost all but the local Swampy Cree and Chipewyan trade from the Bay (Mason, 1967:8; Pettipas, 1993:19; Thistle, 1986:31). The inland Cree found that, in spite of the higher prices the Canadians generally demanded for their goods, trade with the Canadians was usually preferable to the long, hard journey to the Bay (Thistle, 1986:28). Unfortunately for these Cree, the same new, comparatively reliable trade posts that allowed them to visit for trade more easily and frequently also increased the accessibility of direct trade for their neighbours.

Trapping and hunting of furbearers for trade grew among the Cree of north-central Manitoba as the period of early inland trade progressed. Not only was there more pressure on the inland Cree to get their own furbearers due to the loss of their middleman positions (Pettipas, 1993:16; Ray, 1974:69; 1978:32), but the number of furs which it was possible to bring in for trade increased as well. When posts were moved into regions already used regularly by Cree, the locals were able to visit more often than when the closest reliable trade post was located on the Bay (Brightman, 1993:260).[142] The new proximity similarly let inland Cree obtain at least some of the limited number of trade goods that they desired[143] by provisioning the trade posts with meat and hides of animals hunted throughout the year. Thus, an intensification of hunting also accompanied the expansion of trade posts into the interior (Brightman, 1993:245; Thistle, 1986:58).

In spite of the presence of trade posts in the interior, at least some of the inland Cree continued to travel to the Bay, even towards the end of this period and through the period of inland competition. This journey was likely often made in order to hunt waterfowl for the Bay-side posts in the spring - a lucrative job. So, while the traffic on the lower-most Churchill, Nelson and Hayes rivers may have begun to decline during the period of early

inland trade, these routes were not abandoned by Cree from the interior, in this or later periods.

9.3.2 **Intense Inland Competition (A.D. 1773-1820).**

The fur trade was becoming more attractive to many Cree by the 1770s, with the increasing accessibility of posts, growing attachment of the Cree to certain trade goods, and the competitive pricing of these goods. Involvement of the inland Cree in the fur trade, both as provisioners of posts and especially as trappers, grew through the period of inland competition (Brightman, 1993:260; Helm et al., 1981:151). By the time the 1821 amalgamation of the HBC and the NWC brought an end to the period of inland competition, most Cree families had made furbearer taking and trade a regular part of their annual round of activities and had made several adjustments to their land use practices in order to accommodate the fur trade economy (Helm et al., 1981:151).

Trade goods were becoming more and more common in the interior during these years.[144] Certain tradition items like clay pots and axes, projectile points, knives and scrapers of stone (except for efficiency tools) had been largely replaced by their metal equivalents by the end of the competitive period (e.g. Ray, 1978:30,33). Still, until quite recently the Cree could get by quite well without the European-manufactured items, when necessary (Helm and Leacock, 1971:360). Firearms, for example, had been traded in small numbers since the beginning of the western trade, and had become quite common after 1820 (Helm and Leacock, 1971:359), but in 1840 traders were still reporting that many people were still hunting mainly with bows (e.g. Ballantyne, 1971 [1879]:66).

In addition to the old standard items of trade (copper kettles, metal knives, axes, chisels, muskets, beads and other useful goods), alcohol and tobacco were being traded in greater quantities during the years of competition (Bishop and Ray, 1976:135). Other 'luxury' items like cloth, embroidery threads, buttons, and so on were steadily increasing in

popularity as well, although it has been suggested that they only became staples of trade after 1820 (Helm et al., 1981:153).

Steel leg-hold traps and castoreum (for bait) were first introduced into the region during the period of inland competition. Together, these new tools revolutionized trapping, greatly increasing the reliability of this activity (Brightman, 1993:264,266). Steel traps could be placed in locations deadfalls could not. For example, they could be hidden under snow, in den entrances, on game trails and log bridges, or under ice (e.g. Boulanger, 1971:44; Chansler, 1968:8,28,78). Castoreum, in turn, was a very effective bait for beaver. It was some time before this technology became prevalent in the north, however. Use of deadfalls and snares continued to be the most common methods of trapping through most of the competitive period.[145] All the same, the new tools made it easier to trap larger numbers of beaver and other furbearers, and more beaver were being taken in the subarctic during this period (Brightman, 1993:264,300).

All through the period of inland competition, and for some time after, the Cree continued to emphasize their traditional economic pursuits above any fur trade activities (Linklater, 1994:25). The fur trade was certainly a part of most peoples' lives by this time, but trapping did not become a primary economic activity for the inland Cree until after the 1820s (Helm and Leacock, 1981:359; Linklater, 1994:25; Martijn and Rogers, 1969:129; Smith, 1981a:264; Thistle, 1986:86). The 'relatively low' prices of the competitive period ensured that Cree could continue to dedicate a relatively small portion of their time to trapping and still acquire most of the trade goods that they desired (Brightman, 1993:299; Helm and Leacock, 1971:359).

To get those trade goods, however, people still had to visit the trade posts. As the draw of the fur trade grew and as more posts were established in the interior, Cree began to visit the posts more and more regularly. Families' annual rounds of travel came to be greatly influenced by the location of the posts and the timing of their opening and closing

each year (Brightman, 1993:9). For those who wished to trade, their yearly movements had to take them to the trade post site at some point during the months that the post was open. Most of the inland posts were winter outposts and closed for a couple months during the summer or early fall (Brightman, 1993:10).[146]

Except for the Swampy Cree, most Cree people in north-central Manitoba were trading inland by this time, rather than at Churchill and York Factory; the no longer had to travel to the coast for trade (Linklater, 1994:22; Pettipas, 1993:19). In many cases, the inland posts were built at or near traditional gathering sites. In these locations, the traders could take advantage both of the large groups of people likely to be encountered and the abundant food resources which attracted the gatherings (Brightman, 1989:3; 1993:13; Meyer and Thistle, 1995:418,431). When this was the case, the people who had traditionally gathered at the chosen trade post site did not have to alter their annual rounds much at all, other than to add trade with the Europeans to their gathering-time activities.

The main difference in the use of these places by the Cree was that the number of people gathering at them grew as the local residents were joined by people from those bands more distant from the trade posts (Martijn and Rogers, 1969:97,99; Helm and Leacock, 1971:361). In some cases, bands may have adopted the trade post site as their new gathering place and would spend the gathering season there. In others, the people could briefly attend the multi-band gathering around the posts where they traded, but continued to meet at their own gathering places prior to or following this visit. Either way, travel routes leading to and from the trade post sites out of the home territories of these peoples would have seen increasing use, just as the lower Nelson, Hayes and Churchill rivers had become more travelled with the introduction of Bay-side trade.[147]

Another difference in the use of these sites was that sites which had previously been used mainly for seasonal (late spring or summer) camps now had 'permanent' posts on them. The posts remained open for most of the year and could draw people to these places outside of the normal gathering season (Helm, 1981:664). A few families, the Homeguard,

would have stayed near a particular post all year, using the area around the post for their base camps, bringing in provisions for the traders, and doing other necessary tasks for them like building canoes, sewing footwear, dressing furs, and so on (Brown, 1980:19; Helm et al., 1981:156). Other families may have come more sporadically over the year, for trade or to seek aid and shelter when struck by illness or a hard winter (Hanks, 1982:107; Helm and Leacock, 1971:362; Thistle, 1986:65).

Some trade posts were built in locations that had not been used for gatherings in the recent past. If the site was unsuitable for long-term occupation by larger groups, the post was unlikely to be successful, as the post-employees would not be able to survive there easily (e.g. HBCA, B.83/a/2:7,7d). A well-chosen trade post site, on the other hand, often became a gathering site for the people who traded there (Meyer and Thistle, 1995:431).[148] The way that people used these places thus changed considerably with this period.

The inland posts in north-central Manitoba were often visited by Dené as well - especially after 1782 when the Dené were able to expand their territories southwards into the full boreal forest following the smallpox epidemic which so reduced the Cree population. Since at least some of the Dené trappers and post provisioners remained in the forest in the spring and sometimes the summer months, the gatherings at the posts could increasingly be not only multi-band, but multi-ethnic as well. Peace between the Cree and Dené in this region was well enough entrenched to allow them to share the area around the posts during the spring gatherings for canoe building, for example (e.g. HBCA, B.83/a/2:9; B.91/a/2:14d).

Some tensions did remain, however, and there were times that the two peoples had to keep themselves quite separate in order to avoid fights (Tyrrell, 1934:458). Away from the posts, the same tensions could keep both Cree and Dené on their guard against each other (e.g. PAM, MG1 B14, Ia:158; Hanks and Winter, 1991:49). The raiding had settled down years before, however, and now only erupted occasionally (Gillespie, 1975:361; Smith, 1981c:141).

The intensification of trapping for trade and of big-game hunting around the posts forced the Cree to change other aspects of their settlement and subsistence patterns as the period of inland competition progressed. With the disappearance of beaver in the early 1800s, trappers began to focus more on taking muskrat (Brightman, 1993:267; Orecklin, 1976:29; Pettipas, 1980:201). As it became harder to find food in the winters, many people abandoned trapping for trade altogether so they could focus on feeding themselves (Brightman, 1993:270). Cree people were having to turn more frequently to fish and small game, especially hare and fowl, for food and often visited the trade posts for emergency rations (Brightman, 1993:269; HBCA, B.91/a/3:6d,11; Helm et al., 1981:151; Thistle, 1986:75).[149]

As noted, shifts in subsistence emphasis from large game to small game and fish would not have been unheard of before the fur trade. With forest succession and other natural factors that cause variation in the abundance of different animal species, the need of a group to alter their subsistence patterns periodically would have been quite normal. The depletion of beaver and large game in the later years of the competitive fur trade was probably more widespread and of longer duration than such shortages would normally have been in the past. This required a more widespread and long-term change to the way that Cree people lived.

With the shift to a fish and small game-based economy, and in order to trap more effectively, it became more common for Cree bands to disperse into very small groups of only a few nuclear families (Helm et al., 1981:151; Rogers, 1963b:75). Trapping was most efficiently done by dispersed populations, two partners often trapping over a wide area and away from others doing the same. As trapping grew in popularity over the period of inland competition, the early winter season was increasingly being spent by Cree in rather small groups of two trappers and their immediate families, or just slightly larger groups (Brightman, 1993:11; Helm et al., 1981:152; Meyer, 1985:215; Smith, 1981a:264).

As long as the large game had been adequately abundant, families could come together again into slightly larger groups in the mid to late winter for hunting moose and caribou. Larger camps could be supported by large game, and people often hunted large game together in larger groups than was efficient for trapping (Brightman, 1993:11). By the end of the competitive period, however, such game was scarce and the minor gatherings of mid-winter became rare.

Another factor which in time led to some important land use changes was beginning to affect at least some Cree groups by this period. Although most Cree do not appear to have commonly employed dog teams for winter transportation until the later fur trade, i.e. after 1821 (Gillespie, 1981a:16; Helm et al., 1981:154), dogs were being used by at least some Swampy Cree groups by the mid-1700s (Honigmann, 1981:221). It is possible that some inland Cree were adopting this method of travel as well. Use of dog team-pulled toboggans would have allowed greater loads to be transported at a greater speed.

Dogs have apparently been kept by Cree peoples since at least the Late Precontact (Orecklin, 1976:18), but until the later fur trade these were used primarily in hunting (e.g. Mason, 1967:12), possibly as pack animals, and probably as alarms to warn of approaching strangers or bears. One or a couple dogs per camp would have been enough to satisfy these purposes. This small number of dogs could be fed on fish, plus whatever they might scavenge for themselves, with little additional effort beyond what was normally put into fishing and hunting for the families. The sudden increase in the number of mouths to be fed year round with the adoption of dog teams, however, would have required a significant intensification of fishing, particularly in the winter months (Gillespie, 1981a:16; Helm et al., 1981:156).

Use of dog teams could also affected peoples' seasonal rounds of travel. As noted by Sharp (1977:3), teams of dogs had to be fed and otherwise maintained year-round. One or two dogs could be taken along during travel from one place to another without too much trouble. In contrast, greater numbers of dogs, whose primary function was for winter travel,

could be difficult to transport by canoe. An alternative way to deal with the dog teams as winter ended was to just leave them behind. The teams still had to be fed throughout the summer, however, and kept in a place where they could be found when needed again in the following winter. This might include an island reasonably distant from the mainland, so long as the dogs were collected before freeze-up. The dogs' keepers would have to return to the site regularly over the spring, summer and fall to feed the dogs, and they had to return to that same site around the beginning of the winter in order to pick up the team for another season of use. This could have reduced the range over which families were able to travel between the spring and fall seasons.[150]

This alternative was probably uncommon among the Cree at this time, becoming more favourable when people came to settle in more permanent villages around the trade post complexes in more recent times. With the exception of those Homeguard who remained near the posts all year anyhow, most Cree were not yet willing to be tied down to a small area. If anyone other than the Homeguard were using dog teams during this period, they were probably finding some way of bringing the dogs along with them as they travelled to different base camps. Reduced range of yearly travel was probably not a significant effect of using dog teams at this time.

The trends described above for the periods of early inland trade and intense inland competition - increasing trapping and trade, adoption of new technology for trapping and hunting, increasing use of certain travel routes, increasing concentration of bands around trade posts, increasing winter fishing and declining big game hunting, and decreasing winter group size - grew more noticeable as time passed. In the following reconstruction of Cree seasonal rounds during the periods of inland trade, the descriptions are focussed on the changes to the round that occurred in these periods. It should be kept in mind that these new patterns were probably adopted at different rates by different families. It should also be kept in mind that many of the Cree's economic, social and spiritual practices from before

the fur-trade continued through both the Bay-side and inland trade periods (Linklater, 1994:25). The fur trade was an addition to the traditional lifestyles of the Cree, requiring some adjustments to certain aspects of the seasonal round. It did not at this time supplant those lifestyles.

9.3.3 **Spring.**

During the periods of early and competitive inland trade, the early spring continued to be a time for taking advantage of the renewed activity of game and fish. Moose and caribou were hunted whenever they were available (Smith, 1975:180), and some of the meat and hides might be brought into a post by people wintering nearby in exchange for trade goods (HBCA, B.91/a/2:8d; Rich, 1952:39). Small game such as hare and grouse was taken and ice chisels would have been employed for cutting holes for fishing. Small game and fish would have become increasingly important for food at the end of the competitive period, when large game was getting more and more scarce.

The early spring was an important time for the growing numbers of Cree interested in trapping for trade and the meat of the trapped animals was likely as welcome as fresh meat had ever been at the end of a winter. Lynx, otter and marten could be trapped or hunted through the winter and were brought into the posts for trade during the late winter and early spring as well (e.g. HBCA, B.91/a/1; B.91/a/2:8d; Pettipas, 1980:197). It was beaver, however, and later muskrat, which were the most important furbearers. These were often taken in the weeks just before and during the break-up (Meyer, 1985:219; Pettipas, 1980:185; Smith, 1975:180; Winterhalder, 1978:417).

With the loss of their middleman position and with increasingly reliable sources of European trade goods within their own territory, there would have been less reason for the Rock Cree of the boreal forest to make journeys to more distant regions for trade in this season. A decline in long distance trade from that level engaged in during the earlier days of the fur trade, and possibly even from the level engaged in traditionally, would have

resulted. Instead, families would normally just move on from the place where they had spent the late winter trapping to the place where they would spend break-up, retrieving summer equipment from caches along the way (Brightman, 1989:157; Rogers and Rogers, 1959:136).

As interest in trapping increased, the sites chosen for the break-up camp were more and more often those with access to marsh areas and similar habitats where beaver and muskrat could be found. The trapping and hunting of these animals still had to be combined with subsistence hunting and fishing. So, the ideal places chosen for the break-up camp continued to be those where the water would open early, where they could fish and hunt waterfowl at the same time as building the canoes and doing what trapping they chose to do (Rogers and Rogers, 1959:137; Tanner, 1979:40; Winterhalder, 1978:456).

As they had in the years of Bay-side trade, most people would wait until the break-up was over and they had recovered or constructed their canoes before heading over to the posts for spring trade. With trade posts being built through the interior, however, people began to visit for trade more regularly and sometimes would arrive for the spring trade while the rivers were still frozen. In such cases, most of the family might stay back to construct canoes, hunt, fish and trap, sending only a few members on to the posts to trade for a few necessary provisions. The others could then follow after break-up with the rest of the furs loaded into canoes (HBCA, B.91/a/2:11d). It was also not unusual for Cree to stop at an inland post in the early spring to trade for a few provisions, then continue on to the Bay on foot to trade the rest of their furs (HBCA, B.91/a/1:8), usually hoping to get there in time for the goose hunt (e.g. HBCA, B.91/a/1:7; B.91/a/2:8).

Some people, especially the Homeguard, came together at the posts in the early spring for canoe building. In some cases the post was located near a grove of suitable trees and canoes could be made on site. More frequently, however, the people had to go out to cut the bark and wood, bringing the materials back to the post (e.g. HBCA, B.91/a/2:; Tyrrell, 1934:149). When no suitable construction site was available at the post or when the

birch groves or the supplies of good canoe-frame timbers were too distant, then the canoes would be made away from the post at some other site (e.g. HBCA, B.83/a/2:9). Once the canoes were completed, or recovered from their caches, they could be brought to the break-up site where Homeguard families would hunt geese for themselves and for the post (HBCA, B.91/a/1:9).

Near the end of the competitive period, when large game and beaver both were getting to be so scarce, the break-up became more difficult to get through unaided. If enough game could not be taken ahead of the thaw and local small game like beaver had been depleted, waiting for the waterfowl to arrive and the fish to spawn could be a very stressful time. Homeguard and other Cree spending break-up near the posts could sometimes depend on an option that had not been available to people in earlier times or to those more distant from the posts: they could go to the traders to ask for food (e.g. HBCA, B.91/a/2:13d). When Homeguard men left the posts for canoe-building and goose-hunting, they usually left their families at the posts to spend break-up there (HBCA, B.91/a/2:13).

After the break-up, the rest of the trading Cree usually travelled by canoe to the posts. By the 1800s, a credit system had been implemented and this became the time to pay off debts taken in the fall, using proceeds of the winter and spring trapping (HBCA, B.91/a/2:9; Pettipas, 1980:191). This meant that in order to remain in good standing with the trade companies, people had to return in the spring to the same trade post which they had visited in the fall. This probably was not so different from earlier years. Families had often returned in the spring to the place where they had cached their summer equipment the previous fall. Still, there would have been that much more pressure put on them by the traders to make this return to the post. This would have taken away some of the flexibility enjoyed in the pre-credit years. Of the families who were keeping dog teams by this time, those who would not be travelling too far away and who chose to leave the dogs behind would have had to find a place to leave the team at this time, as well.

The waterfowl hunt was still an important post-break-up activity. The main difference was that in addition to hunting for themselves, inland Cree were now often also hunting for the posts (HBCA, B.83/a/1:19; B.91/a/2:13; Rich, 1952:42,43; Tyrrell, 1934:151). The spring spawning runs may have become even more vital in later years of the competitive period when large game was stretched so thin, although fishing seems to have always been emphasized in the late spring. Bear could be hunted at the spawning sites as they had before. With the increasing use of muskets, Cree may have had more success in killing these animals (Brightman, 1993:193,194).

Some people continued to take furbearers after break-up. Beaver and muskrat were emerging from their houses by this time and could be trapped (Meyer, 1985:213; Rogers and Smith, 1981:133). While beaver remained around their houses all year, muskrats abandoned theirs in the spring and so became more widespread in this season (Meyer, 1985:219). Otter could also be taken during the open-water seasons. The furs of each of these animals were best in the mid-winter but remained trade-worthy until at least a few weeks after break-up. Trapping of furbearers later into the spring or summer was probably still discouraged by the traders, however, even during the competitive period. Thus, this activity likely did not increase much.

9.3.4 **Summer**.

During the earlier years of the inland trade, gatherings were often held near the inland trade posts after the break-up, when most families arrived to trade or pay off debt (Helm and Leacock, 1971:362; Martijn and Rogers, 1969:99). It has been suggested that, in general, these post-gatherings were probably fewer in number but larger in size than gatherings had been in earlier times (Helm and Leacock, 1971:365; Martijn and Rogers, 1969:99).

Entries from the trade post journals of the later inland competition period, however, do not seem to reflect the presence of very large groups gathered at the posts for extended

periods of time. Most parties were said to have come to the posts, traded, and left again within a few days (e.g. HBCA, B.92/a/2:17). When people other than the Homeguard were recorded to be camping around the posts, it was usually because they were waiting for the new trade goods to arrive with traders in the summer or fall (e.g. HBCA, B.83/a/2:4d; B.91/a/2:16-17). It may be that the post employees were unwilling to admit to their superiors that the Natives were spending so much time so close to the posts being 'unproductive' (Hamilton, 1991:4,16); or the posts may not have been located in the most desirable places for gatherings; or gatherings may truly have been less common by this time.

It is notable that David Thompson recorded that, during his time in the interior from the late 1700s to the early 1800s, Cree families were dispersed in the summers just as they were in the winters (Brightman, 1993:10). However, Thistle (1986:87) has noted that even by the 1820s, the traders were still trying to discourage the seasonal gatherings and ceremonies of the Cree as these interfered with the fur trade. He asserts that it was only with the post-1821 trade monopoly that the traders had enough influence to be more or less successful in this. It is likely that some families would have started to spend less time at gatherings but that the majority would have gathered for at least part of the summer all through the years of inland competition.

Whether they camped in large groups or small, most families no doubt continued to go on after the spring or early summer trading to spend the rest of their summers at fishing camps (Brightman, 1993:10; Meyer and Thistle, 1995:428; Rogers and Rogers, 1959:138; Rogers and Taylor, 1981:232). Summer trapping was discouraged and fishing and plant collection were, as before, the most important of the summer subsistence activities for feeding both people and, by the end of the competitive period, an increasing number of dogs. As moose were becoming more scarce as the inland fur trade wore on, fishing, plant collection and small game/fowl hunting probably became ever more dominant.

Towards the end of the summer, people began to prepare for the journey to their fall camps. Canoes had to be repaired, food had to be preserved, and any trade goods desired for the fall or winter season had to be acquired (Rogers and Rogers, 1959:138). Sometimes, particularly during the pre-credit years and among people who lived more distant from the posts, people would have traded for their winter outfit earlier in the summer before leaving for their late summer or their fall camps. In contrast, those people who had their gatherings at or near the post would have left the trade post area later in the summer than those who came together at other sites for summer fishing. They could then have waited for the new trade goods to come inland in the later summer. Especially with the development of the credit system during the competitive fur trade period,[151] it would have become increasingly common for families to return to the trade posts from their summer fisheries, if they had ever left the post that summer, later in the season. This journey, made in order to pick up their winter supplies, would be made in the late summer or the fall (e.g. Brightman, 1993:10; HBCA, B.83/a/2:4d; B.91/a/2:29,30; Rogers and Rogers, 1959:138; Smith, 1975:179).

9.3.5 **Fall.**

At the end of the summers, the people broke up into multi-family groups and began to make their way to the fall camps. Whether they were travelling from a summer fishery or from the posts, most people continued to try to make the journey to their fall and early winter territories ahead of the freeze-up, by canoe (Brightman, 1993:10; Meyer, 1985:213; Ray and Stevens, 1971:74; Smith, 1975:179).[152] During the journey, which could take days to weeks depending on the distance and travel conditions, the people would fish for food (Anderson, 1961:105). Some may have picked up provisions from the posts for the journey, as well.

Through the periods of early inland trade and inland competition, building up stores of food through hunting, fishing, and plant collection retained dominance among the early

fall activities (Anderson, 1961:107; Morantz, 1987:219).[153] With the increased emphasis on trapping during the later fall and winter months, building up surplus provisions for the winter would have gradually become all the more important as this allowed trappers to concentrate on furbearers in those later seasons (Anderson, 1961:107; VanStone, 1974:102).

Although most Cree did traditionally store up some surplus, it was rare that this was enough to get them through any longer than very short periods of time without hunting or fishing (Brightman, 1993:358). Traders had begun to encourage Swampy Cree to preserve and store larger food surpluses by the later 1700s (Brightman, 1993:360). This was a period during which game was already becoming scarce in their territories in the Hudson Bay Lowlands. This forced the Cree in this region to either give up trapping and hunting for trade in favour of looking after their own immediate needs or to go to the posts to ask for food. Neither of these options were desirable to the traders. Inland traders were no doubt exerting the same pressure on the Rock Cree, particularly when game resources began to decline during the competitive trade period.

In a good year, it was conceivable that enough fish could be taken during the fall fish runs that, together with waterfowl, plant foods, and whatever other game could be taken in the fall, the surplus could supply a group with food through much of the winter (Orecklin, 1976:66). Caches of the food harvested and preserved in the fall could then be made and distributed throughout the region in which the families planned to spend the winter (Brightman, 1993:360; Orecklin, 1976:122).[154]

Until recently, however, most Cree could readily stop trapping in favour of hunting or fishing anytime food stores ran low (Brightman, 1993:270; Rogers, 1963b:48). Thus the intensification of food getting, preserving and storing that is expected to have occurred at this time may have been only slight. Storage of large surpluses of food, for example, does not appear to have been common among the Cree until after 1900 (Brightman, 1993:357).

An exception to this may have been increasing attention by some families to fall fishing, already important at that time of year, for the sake of feeding dog teams.

In regions where migratory waterfowl were abundant, those families who spent the fall in the vicinity of the posts often brought in waterfowl from the fall goose hunt. Surplus moose meat was also commonly traded by Cree in the fall (e.g. HBCA, B.83/a/1). The trade in large game meat and hides remained reasonably strong throughout most of the periods of early and competitive inland trade. However, by 1810, records show that this trade was declining rapidly at inland posts (Brightman, 1993:270,272). Moose and caribou hunting for basic subsistence followed the same trend.

As in earlier years, berries, nuts, seeds and roots were collected in the fall. Their importance would have grown in those increasingly common years that game was scarce, as would any provisions which could be acquired from the posts. Spawning whitefish and other available fish continued to be taken. These similarly became that much more vital towards the end of the competitive period in places where moose and caribou were becoming scarce (Rogers and Taylor, 1981:235).

As the freeze-up approached, camps were again moved, if necessary, to the place where the families chose to spend the freeze-up and often the early winter as well. Freeze-up had always been a good time to hunt and trap beaver and muskrat, and camp places near marsh areas inhabited by these animals were more desirable than ever (Brightman, 1993:10; Meyer, 1985:213; Winterhalder, 1978:221,417,430). As beaver became scarcer by the end of the competitive inland trade period, muskrat became the focus of furbearer-taking activity at this time of year (Brightman, 1993:267). Camping near muskrat marshes in particular thus became increasingly important to Cree involved in the fur trade (Pettipas, 1980:201).

With freeze-up underway, families spending this time around the posts would seek out birch or other suitable wood for making snowshoes and toboggans (HBCA, B.91/a/2:5; B.91/a/3:6). The others would have been doing the same at their camp sites, during or soon

after the freeze-up, so that this equipment would be ready when the snows deepened. Anyone who had kept dog teams on an island for the summer would probably have had to think about retrieving them around this time as well.

9.3.6 **Winter**.

With the loss of their middleman status during the period of early inland trade, the Cree became increasingly interested in taking beaver and other furbearers for trade during the early winter months. Small game, including furbearers, had already typically been the most reliable source of food during the early winters, and some families had begun to intensify their taking of furbearers slightly as early as the period of Bay-side trade. Still, the inland trade encouraged an even more significant growth of furbearer hunting and trapping activity (Bishop, 1984:32; Brightman, 1993:260; Helm et al., 1981:151; Rogers and Rogers, 1959:135; Tanner, 1979:20). Associated changes in the winter land use of the Cree resulted.

Migrating caribou - woodland and/or barren-ground - did continue to dominate the attention of Cree at the beginning of the winter whenever they were available. Furbearers, however, could be hunted or taken in traps set by people not immediately involved in the caribou hunts. More effort was put into these activities following the end of the migrations in November or December (Smith, 1981a:260) and in years that caribou were uncommon. Gradually, more and more time was dedicated to trapping furbearers (Rogers and Rogers, 1959:135). Women, especially those living at or around the posts, would have been spending correspondingly more time preparing the furs. As the fur trade progressed, it became common for more people to visit the posts periodically throughout the early winter to trade furs and meat (Brightman, 1993:11; Brumbach and Jarvenpa, 1989:117; HBCA, B.83/a/1).

Throughout most of the periods of early and competitive inland trade, the beaver remained the most important furbearer to the Cree, both for trade and for food (Brightman, 1993:267). As the period of inland competition wore on, however, beaver declined and

muskrat became more commonly trapped (Brightman, 1993:267; Orecklin, 1976:29; Pettipas, 1980:197). Other furbearers, including otter, marten, mink and weasel, for example, were also trapped in greater numbers. With the shift in emphasis to the new species, people sometimes had to camp in slightly different areas than they previously had chosen. The early winter camps were located more often near those marshy places preferred by muskrat, for example (Pettipas, 1980:201).

Although Cree continued to hunt large game at least opportunistically (Tanner, 1979:51), fishing grew more important as a source of food for the Cree as they dedicated more time to trapping in the early winters. Nets could be set and left to catch fish, leaving the people freer to concentrate on setting and checking traps, dressing furs and going about their other regular winter activities. Not only that, but as the fur trade intensified and large game declined, fish and small game, especially hare and game birds, were sometimes all that could be caught for meat (HBCA, B.91/a/2:5d; B.91/a/3:6d,11; Helm et al., 1981:151; Thistle, 1986:75).[155] For anyone keeping dog teams, fishing was also important to feed the team (Gillespie, 1981a:16; Meyer, 1985:219). Thus the presence of a reliable fishery became increasingly important in the choice of winter camp places.

Mid-winter had previously been a time for concentrating on activities around camp and for relying on large game for fresh food as fish and smaller game became less mobile. Trapping was not terribly productive, and breaking into beaver and muskrat houses required considerable effort at this time of year, even with ice chisels. Thus some trapping probably did take place around the camps but there was relatively little intensification of this activity until near the end of the competitive period. Most of the traps were taken up and camp was often moved to a more suitable place for waiting out the cold season and for hunting the available game. Several moves might be made during this season in search of game (Rogers, 1963b:50; Rogers and Rogers, 1959:136; Smith, 1975:179,180).

Modest gatherings of Cree could take place during the winters when large game was concentrated enough to sustain them (Brightman, 1993:11). As large game became more

scarce in the later years, though, families would have had to move even more regularly over the winters, dispersing into smaller groups than they had in easier times (Smith, 1981a:264). Winter gatherings became less frequent as families spent more of the winter in greater isolation (e.g. Martijn and Rogers, 1969:100).

Those who had managed to preserve surplus food in an earlier season and who had not yet used up these stores could visit their caches which were strategically placed throughout the winter territories. This was still rather rare at this time, however (Brightman, 1993:357-361; Orecklin, 1976:66). Some families started to resort to the posts more commonly for food during the winters. There was an overall trend of the families remaining closer to the posts so that they could access it, not only for trade but also for these rations, throughout the winter (Brightman, 1993:270; Helm et al., 1981:151; Pettipas, 1980:201; Thistle, 1986:75).

On the other hand, the areas surrounding the posts were among the most depleted in game, firewood and fish due to the continuous, concentrated exploitation of these resources by the traders and their families. The regular flow of people looking for food from the post stores put an increasing strain on post resources. By the early 1800s, Homeguard women were often being sent off on their own to snare hare and grouse for themselves and the posts several miles away during the mid-winter season (e.g. HBCA, B.91/a/3:10). Many families did leave the posts of their own accord during the leaner seasons, searching for better hunting, trapping and fishing when too little was available from the traders (e.g. HBCA, B.91/a/2:5d).

As weather warmed towards the end of the winter, trapping could resume after the mid-winter hiatus. Camp moves brought families closer to their spring camp places. The habitat preferences of the targeted furbearers again influenced the peoples' choice of camp locations in this season. Preparations were made for the break-up, and the year began anew.

10. Fur Trade Age Changes to Dené Seasonal Rounds.

10.1 Introduction.

In comparison to the Cree, the Dené were only minimally involved in the fur trade during the earliest fur trade west of Hudson Bay and during the period of Bay-side trade. The posts were too distant for the northwestern groups to visit except very rarely and the Edthen-eldeli Dené of the east had little interest in most European trade goods; the caribou provided most of their needs and wants already (Smith, 1981b:273; VanStone, 1974:93).[156] Any adaptations to Dené lifestyles to accommodate the fur trade were most likely minimal at this time. Edthen-eldeli Dené, in particular, remained marginal to the fur trade and, except for a few families, changed very little of their land use until the later fur trade, i.e., after 1821 (Smith, 1981b:273,275,276-277; VanStone, 1974:93). The changes to the annual rounds to be discussed in the following sections apply primarily to those Dené who chose to become involved in the fur trade from this earlier date. These individuals, it seems, represent only a minority of the Dené population. For example, even during the period of intense competition it was reported that there were no more than sixty-three Dené individuals who moved south into the region around the Churchill River in response to the lure of the fur trade (Brightman, 1993:277).[157]

10.2 Dené Seasonal Rounds in the Period of Earliest Trade West of Hudson Bay and the Period of Bay-side Trade: A.D. 1611-1667, 1668-1733.

Like the Cree, eastern Dené were probably exposed to European trade goods, or at least to stories of the strangers, even before the arrival of the trade companies on James Bay in A.D. 1668. They do not appear to have shown much interest in the trade, however, until the posts were first set up at the mouth of the Nelson River in 1682. Even then, it was years before Dené began to visit the posts with any regularity. This was in part because of lack of sufficient interest, in part because of the growing hostility of the Cree towards any Dené encroachment southwards. Until about 1700 Dené obtained most of their limited European

trade goods through trade with or raiding of Cree middlemen (VanStone, 1974:91,92; Yerbury, 1986:17).

By 1700, a few Dené were beginning to travel once every few years to Hudson Bay for trade directly with the Europeans (VanStone, 1974:91). Wary of Cree attack, when these individuals did decide to make the journey to the Bay, they tended to do so in large parties. It was not until peace was made between the Dené and the Cree after 1715 that Dené men felt secure enough to come to the Bay in smaller groups or to bring their families with them (Gillespie, 1975:359; Yerbury, 1986:36,38). By this time, Prince of Wales Fort had been established and interested Dené could visit this more northerly post even more easily. Each year after its opening, Prince of Wales Fort was attended by at least some Dené traders (Blondin, 1997:29; Gillespie, 1975:365).[158] Most of the Dené still came to the Bay only rarely, however (Smith, 1981b:274).

Once they began to come more often to the Bay-side posts, Dené individuals could take over from the Cree the role of middleman between the trade companies and those neighbours who did not make the trip to the posts themselves (Birket-Smith, 1930:35; Pettipas, 1993:14; Sharp, 1977:37; Smith, 1981b:273; VanStone, 1974:92). Thus, the only change that they had to make to their annual round was to add trips for trade with their neighbours (and such meetings were probably not uncommon traditionally) and with the traders on the Bay. Use of the Hudson Bay Lowlands by the Dené grew slightly during this period.

This use of the Lowlands would have further increased towards the end of the period of Bay-side trade when a few Dené began to take on a Homeguard role for Prince of Wales Fort. These families would normally come to the post in the spring for the goose hunt, and a few stayed on as post hunters year-round. Others would come in the fall or periodically throughout the year with caribou and musk-ox meat and hides to trade when they desired new goods (Gillespie, 1975:365,366; Pettipas, 1993:20; Yerbury, 1986:38). In time, Dené coming to Prince of Wales Fort in the spring for the goose hunt or for trade

began to hold their gatherings around the post much like the Cree. Spring or summer gatherings were nothing new to the Dené, although the post was a new location for these events. These Bay-side gatherings, when they occurred, were short in duration. Most of the people wished to leave the Bay and get onto the barrens for the summer. Still, these gatherings were accompanied by the usual social and spiritual activities (Gillespie, 1975:365; Jarvenpa, 1980:41; Jarvenpa and Brumbach, 1984:178; 1988:601).

The eastern Dené had little to no need to trap or hunt furbearers themselves at this time. What few trade goods they desired, they could acquire through trade in meat and hides (Gillespie, 1975:366; Pettipas, 1993:20;), or in furs or occasionally copper obtained from their northwestern neighbours (Birket-Smith, 1930:35; Sharp, 1977:37). A few of the younger men may have been drawn into the full boreal forest to trap on a seasonal basis, giving up their emphasis on the caribou in those seasons (Sharp, 1977:37; Yerbury, 1986:34). This would have represented a change from traditional patterns. But for most, furbearers, and the fur trade itself, remained relatively unimportant. They continued to be 'caribou-eaters' and to live the life associated with that subsistence system (Jarvenpa and Brumbach, 1984:148; Smith, 1978:69; 1981b:273; VanStone, 1974:93).

New technologies introduced to the Dené during the period of Bay-side trade did not have much effect on their land use patterns, either. Items like ice chisels, copper pots, metal knives, axes and awls were adopted and used to decrease the labour involved in traditional activities including winter fishing, cooking, timber cutting, and sewing. For lack of need, these items were not used to increase production, nor did they change any aspect of Dené land use significantly at this time (Sharp, 1977:37). The early muskets, as noted earlier, though unreliable, did have a greater firing range than the bow and arrow and so could have been useful for hunting animals easily startled, such as waterfowl or lone caribou, or dangerous at closer ranges, such as bear (Sharp, 1977:39). Again, however, the accuracy of the early muskets was good only at short distances (Given, 1987:10), so even

firearms probably had little effect on Dené hunting patterns until the introduction of more effective rifles in the later 1800s (Sharp, 1977:39).

Overall, changes to the Dené annual rounds were slight during the period of Bay-side trade. They affected only a few Dené; the others continued to live much as they had before the Europeans came.

10.2.1 **Spring.**

During the period of Bay-side trade, most Edthen-eldeli Dené were following the same seasonal rounds that they had for generations. A few individuals did become interested in the fur trade and altered their movements and activities accordingly. But even for those involved in the fur trade, the spring hunts of the northwards migrating barren-ground caribou remained dominant in this season.

Normally, Dené families spent the early part of spring hunting the barren-ground caribou. Because of the traditional importance of the spring caribou hunts, Dené were unwilling to give up this activity in favour of trapping or trade, especially in the earliest years of the Bay-side trade. At that time, the potential of Cree hostility made travel into the full boreal forest for trapping or for access to the posts even less appealing.

It was not until the later fur trade, when more Dené were spending more time trapping and large game had grown scarce, that fishing became an important early spring activity on a regular basis. Still, even prior to the fur trade, spring fishing could be vital in years when the caribou were not behaving predictably. The ice chisel would have made this activity somewhat easier. However, this, like most of the early trade goods, probably did not result in any significant change to Dené land use patterns at this point in time (Sharp, 1977:37).

Until around A.D. 1700, any trade engaged in by the Dené for European items was done away from the Bay, through Cree middlemen willing to trade with them (VanStone, 1974:91,92; Yerbury, 1986:17). This trade might have occurred at any time that the Dené

were in the more southerly parts of their territories and hence closer to the Cree, including the early spring. Trade with middlemen, however, normally required that the Dené have furs to pass on. Since hunting and trapping of furbearers was disregarded by most of the eastern Dené, and was in no season anything more than secondary to the caribou hunt (Smith, 1981b:277), it is unlikely that those Dené occupying the region of northern Manitoba were trading much with the Cree in this season or others. Raiding the Cree for trade goods may have been another option.

Once Dené did start coming to the Bay to trade directly, they at first typically made this journey in June or even July (Gillespie, 1975:359,365) after most of the barren-ground caribou had already moved out onto the barrens. But around the 1740s, after peace had been established and the Dené had grown comfortable enough to visit the Bay more regularly, a few men, with or without their families, would walk over land to Prince of Wales Fort each spring in April or May, ahead of the break-up. This allowed them to arrive in time to hunt waterfowl for the post in addition to trading the proceeds of their winter hunt and any furs procured from their neighbours (Gillespie, 1975:365,366; Pettipas, 1993:20; Williams, 1969:194,195; Yerbury, 1986:38). It also meant that they would have to give up participating in the spring caribou hunt for these weeks.

Although a few of these people would remain at Prince of Wales Fort through the summer months as post provisioners, others would leave after the goose hunt was over. They could either rejoin their families inland where they had parted, or catch up with them and the rest of the band on the barrens where they would spend the summer as usual (Gillespie, 1975:365; Pettipas, 1993:20). Before leaving the forest behind, the small Dené-style canoes would have been made or perhaps collected from their caches, as necessary. Travel was still being made primarily over land, on foot (Hearne, 1971:97; Williams, 1969:194,195), but canoes continued to be necessary for crossing larger water bodies and for summer and fall hunting.

10.2.2 **Summer.**

Except for those few people who chose to remain around Prince of Wales Fort from spring to fall as provisioners of the post, Dené kept on spending summers on the barrens with the caribou during this period (Gillespie, 1975:382,383; Smith, 1981b:277). Summer furs were not as highly valued as winter furs and there was little or no incentive for the eastern Dené to trap furbearers themselves at this time, anyhow. There was no need to change anything about their summer land use patterns on the barrens.

Some people were visiting the Bay-side posts after the break-up before making their way to the barrens. Even if they did not choose to remain at the post through the summer months, the journey north and arrival on the barrens could be delayed for these individuals. This was one significant, if limited, change in Dené land use during the period of Bay-side trade; some small percentage of the population was remaining south of the treeline until after break-up, and a few remained to work for the posts through much of the summer. Thus, though their numbers were small, Dené presence in the forests during summer months would have become more common than it had been in earlier times.

When summering in the northern forests, Dené had to shift to a more generalized diet than they ate while following the caribou. Fishing supplied them with much of their food here, and small game and fowl were also important. The odd moose may have been hunted when the opportunity presented itself, and the more diverse food plants would have been taken advantage of as they were learned (Irimoto, 1981a:126,127; Sharp, 1981:233). Because the early part of summer had always been the least important season for hunting caribou, the economic sacrifice made by the Dené who did not go up on the barrens at this time was not too great. The summer emphasis on fish and game besides caribou had already been a regular pattern (Jarvenpa and Brumbach, 1984:178). These alternative food resources did take on increased importance for those who gave up caribou in the summers, however, and they were being sought out in settings not much used in this season previously.

At this early time, the number of Dené actually represented south of the treeline in the summer, participating in these land use changes, was small. Shifts to summer use of the forests would become more noticeable, though continued to be minor, in later periods of the fur trade (Alcock, 1916:447; Bussidor and Bilgen-Reinart, 1997:19,22; Gillespie, 1975:382,383).

Towards the end of the summer, Dené were traditionally on the southern barrens, preparing for the important hunt of barren-ground caribou for their hides and for their meat. This did not change with the Fur Trade. Even those who had spent the first part of the summer south of the treeline would have travelled inland and north on foot to join the others in this activity, just as many of the Edthen-eldeli Dené have done in the twentieth century (Birket-Smith, 1930:30; Bussidor and Bilgen-Reinart, 1997:37). Dené were still favouring spears and arrows for hunting caribou; the introduction of firearms at this time would have had little effect on the hunt (Birket-Smith, 1930:19,23,26; Sharp, 1977:39; Smith, 1982:59).

10.2.3 **Fall.**

As in previous years, caribou hunting, butchering and meat and hide preservation dominated fall activities. For this reason, most families remained on the southern barrens until the caribou began to migrate south across the treeline around November (Smith, 1981b:276). Because the Edthen-eldeli Dené were not willing to give up the late summer and fall caribou hunts, fishing continued to be primary only in those less fortunate years that not enough caribou had been taken to feed the families and for the winter stores (Yerbury, 1986:144).

Hunting migrating waterfowl for the Bay-side posts was another option for Dené in the early fall. The timing of this event would have conflicted with the chance to hunt the caribou concentrating on the southern barrens at this time of year, however. Because the summer and fall caribou hunts could provide Dené families with such a quantity of necessary hides and meat, even those Homeguard who had hunted waterfowl for the posts

in the spring were unlikely to repeat this in the fall. Trapping also remained marginal to traditional fall activities during the period of Bay-side trade (Smith, 1981b:277).

All the same, the post employees were not necessarily left entirely without Dené business. At first, Dené traders and hunters did visit the posts almost solely in the late spring. However, by the 1730s or 40s some families were returning in the fall, after the early fall caribou hunt, if not later, with meat and hides to trade (Gillespie, 1975:365; Pettipas, 1993:20). Such visits were only made by a few of the people in any given year at this time.

From the treeline, or from the Bay if they had made this additional trip, the families would make their way on foot to their late fall/winter hunting camps in the transitional forest (Pettipas, 1993:20). Most years, this journey would be made after the first heavy snowfall. The barren-ground caribou were retreating into the forest by this point and the hunters could hope to encounter them south of the treeline again (Smith, 1981b:276).

10.2.4 **Winter**.

For most of the people, winters were spent within the transitional forest as before. In the earlier days of the Bay-side trade, Cree hostility towards Dené incursions was great. Those Dené wishing to trap or hunt in the full boreal forest during the winter, or to travel to the posts along the Bay at other times of year, were not able do so with much success or security. Even those remaining north of the full boreal forest had been more on their guard in this period of time (Bussidor and Bilgen-Reinart, 1997:18). If any Dené were indeed choosing to trap farther south during the winters at this time, they were keeping to areas not being used much by Cree (Yerbury, 1986:34) and staying hidden from view of Cree travel routes whenever possible. This was the case in later times (Brumbach and Jarvenpa, 1989:33; Smith, 1981c:140) and would have been that much more vital during the tense years of the early Bay-side trade. The one exception to this may have been those times that Dené sought out Cree middlemen intentionally in order to trade for European goods. They

may also have gone to Cree camps to raid for these same items, but in this case would again have put value on being concealed from view.

Even after peace was established, however, there was little reason for the families to travel any farther south in the winter than they had to in order to find barren-ground caribou. Furbearers may have been more abundant within the full boreal forest, but few of the eastern Dené had any interest in trapping at this time. Instead, their winter economy continued to emphasize the caribou, and groups gathered and dispersed as the herds did (Jarvenpa and Brumbach, 1984:148; Smith, 1982:57; Smith, 1978:69; 1981b:276; Yerbury, 1986:130). Small game was sought for variety and when caribou were scarce, but furs for trade remained largely unimportant.

Possibly, there were at least a few eastern Dené who wished to trap furbearers for trade even at this early time - those not well-positioned to be middlemen but still wanting to trade at the posts in the spring, for example. This would have been the most notable change to Dené winter land use in this region during the period of Bay-side trade; some small number of people would have been drawn into trapping and hunting furbearers between the fall/early winter and spring hunts of the barren-ground caribou. Because of the better fur resources in the full boreal forest, such individuals might have taken their chances farther south (Sharp, 1977:37; Yerbury, 1986:34), closer to the Cree, farther from the barren-ground caribou.

For most individuals wishing to trade at the posts in the spring, furs could be obtained from western neighbours prevented from making the journey to the Bay themselves. Winter would have provided the best opportunity for meetings between neighbouring Dené groups for this purpose. This was because the different Dené peoples tended to affiliate themselves with different 'herds' or breeding populations of barren-ground caribou. These populations (Kaminuriak, Beverly, Bathurst and Bluenose) summered in widely separated calving ground areas on the barrens, leaving eastern groups such as the Edthen-eldeli Dené little chance to meet with peoples farther northwest including

the Dogrib and Yellowknife. In the winter, caribou populations were least discreet and their territories, and thus those of the people hunting them, sometimes overlapped (Gordon, 1981:3).[159]

With the possible exception of a few additional meetings with neighbouring peoples - first with Cree middlemen, and later as middlemen meeting with Dené neighbours - and the increased effort put into trapping by a rather small number of people, the winter activities of the eastern Dené appear to have changed very little during the period of Bay-side trade. Even the meetings for trade with, or as, middlemen were likely not common or annual events for most of the people. Few European trade goods were desired by the Dené at this time; labour-saving devices like metal ice chisels, axes and knives were welcome, but did not need regular replacement (Smith, 1982:60). These could be acquired through minimal trade, and this trade was often made in meat and caribou hides, rather than in furs (Gillespie, 1975:366; Pettipas, 1993:20).

The introduction of European trade goods had potential to result in some changes to the traditional winter land use patterns, but they seem to have had little effect on Dené practices at this time. For instance, the Dené's limited winter fishing had previously consisted mostly or solely of angling. It was too much work to set nets under the ice and angling could usually supply them with the limited amount of fish that they needed in this season. The adoption of metal ice chisels made it easier to cut the many holes needed to set winter nets, so this activity could have increased with the fur trade (Rogers and Smith, 1981:134; Smith, 1981b:281; Yerbury, 1986:144). However, so long as their economy continued to be focussed on barren-ground caribou in the fall and winter and the caribou remained abundant enough to support them, the Dené had little need to increase their winter fishing efforts (Smith, 1982:62,63; Yerbury, 1986:144).

Likewise, although the Dené were aware of firearms from early on in the fur trade, the weapons did not have significant effect on their land use for many years. Muskets were expensive items and required a regular supply of powder and shot. To buy and use a

musket would have required more regular participation in the fur trade than most Dené were willing to put in. Also, while firearms, powder and shot were in chronically short supply, the traditional weapons and methods of hunting caribou were more than satisfactory. There was thus no incentive at this point to replace the snares, spears and arrows with the less reliable firearms of that time, or to change their hunting methods (Sharp, 1977:39; Smith, 1982:59,60).

It has been suggested that even the early muskets could have provided an advantage in the winter for hunting more dispersed caribou on the frozen lakes within their wintering grounds (Sharp, 1977:40). The loud noise of the muskets could have been compensated for by their theoretically greater firing range; game could be killed from a greater distance, so long as the animal was in fact hit with the first shot. Since this was not easy to do, however, it was likely uncommon for the Dené to hunt caribou with these early firearms. There would have been little or no increase in the number of caribou that could be killed in the winter directly attributable to the introduction of these weapons.[160] Likewise, firearms may have been used to more easily kill bear in the winters, if bear was desired. In spite of this, bear, like most of the previously supplementary game, were probably not hunted much more by the Dené than before - not until later times when some people moved farther into the boreal forest for trapping and winter caribou hunting started to decline.

10.3 Dené Seasonal Rounds in the Periods of Early Inland Trade and Inland Competition: A.D. 1734-1772, 1773-1820.

10.3.1 Early Inland Trade (A.D. 1734-1772).

Although trade posts were being built west of Hudson Bay as early as A.D. 1734, these were too distant and too far into the full boreal forest to attract Dené to trade there. The greatest effect of the establishment of these inland posts on the Dené was that by the 1750s, considerably fewer Cree were visiting the Bay-side posts (Gillespie, 1975:366). This left the role of post provisioners for Prince of Wales Fort open to greater numbers of

Dené. With fewer Cree at Prince of Wales Fort, Dené could also grow more comfortable visiting the post.

Even then, there was no great jump in involvement of the Dené in the fur trade. A slight increase in furs being brought in by Dené traders to the Bay-side has been recorded for the 1760s and 1770s (Gillespie, 1975:366), but this was still only minor. Because of their northerly position, to which inland posts did not come until later, the eastern Dené were able to hold onto their middleman role for longer than the Cree had. Any intensification of trapping at that time was probably on the part of their neighbours rather than themselves. The eastern Dené likely continued to spend their year much as they had in the period of Bay-side trade.

10.3.2 **Intense Inland Competition (A.D. 1773-1820).**

In effect, there were no inland trade posts readily accessible to the Dené until the later 1770s, by which time inland competition between the trade companies was already well under way (VanStone, 1974:92; Yerbury, 1986:49). The competition was never as great in the northwest as it was along and south of the Churchill River (VanStone, 1974:93) but it was enough to make trade a little more attractive to some people (Jarvenpa and Brumbach, 1984:148; Smith, 1981b:273; Yerbury, 1986:74). The very presence of the posts closer to their winter territories was probably just as responsible for drawing increasing business from the Dené. The more northerly inland posts, such as those on Lake Athabasca, were considerably easier to reach than Prince of Wales Fort (Gillespie, 1975:382). As a result, Dené trade at the Bay-side post fell off until relatively recent times. Prince of Wales Fort was too far and the area too poor in food resources to attract more than a few of the easternmost Dené to remain attached to that post as provisioners and trappers (Birket-Smith, 1930:13).

It was thus during this period that any more than a few Dené were first drawn into the fur trade economy, resulting in significant changes to the annual land-patterns of some of these individuals. Even then, however, most of the Edthen-eldeli Dené continued to

follow the same way of life as had their grandparents. These people were rarely more than marginally involved in the fur trade at this time (Gillespie, 1975:366; Minni, 1976:61; Smith, 1982:57; Smith, 1981b:273,275,276-277; VanStone, 1974:93).

As the traders pushed north and west into the interior in the later 1770s, the Edthen-eldeli Dené lost the opportunity to act as middlemen between their neighbours to the northwest and the Europeans (Pettipas, 1993:20; VanStone, 1974:92). Northwestern Dené continued to trade through middlemen, but this role had been taken over by the Yellowknife (Gillespie, 1981b:286) and by other eastern Dené peoples living in or moving into the Lake Athabasca region (Blondin, 1997:31). If they were to continue trading with the Europeans, Dené east of the Athabasca region now had to do so with furs that they had trapped themselves, or through increased provisioning of the posts.

Most of the Edthen-eldeli Dené chose to not spend any more time in taking furbearers than they had in previous periods. Other Dené peoples, however, were being gradually drawn more into the fur trade at this time, fitting in trapping and trade where these activities would cause the least disruption to their other pursuits (Smith, 1982:59). At this time, this meant that trapping was restricted mainly to the winter season following the fall caribou hunts, when the people were farther south anyhow (Gillespie, 1975:382,383; Sharp, 1977:37).

Dedicating more time to trapping at the expense of the caribou hunt did not result in too much of a loss of subsistence during the early winter months. This was already a time of year during which barren-ground caribou were less predictable and more difficult to hunt (Irimoto, 1981a:103). Also, so long as trapping was restricted to the winter months and to a part of the forest being used by the barren-ground caribou, caribou could still be hunted whenever meat was needed (Jarvenpa, 1980:42). When trapping drew the hunters farther south into the forest, away from the caribou, it would not have stopped them from making journeys north to search for caribou whenever they wished to do so. As late as the 1900s,

trapping remained only secondary to traditional activities among most of the eastern Dené (Smith, 1978:77).

The loyalty of the more marginal Dené trappers, especially, was dependent on the convenience of the location of the posts. Among the posts most successful in attracting Dené trade were those established at the east end of Lake Athabasca in the early 1800s.[161] This location was one which certain groups of Dené had already been visiting in the winters, it having a good fishery and being a regular wintering place of the caribou. As a result, these posts enjoyed more regular business with the eastern Dené than any other posts had before or after (Minni, 1976:60).

There was, however, a small but growing number of Dené, drawn more fully into the fur trade during the period of inland competition, who were willing to give up certain aspects of their traditional lifeways. Because the furbearers most sought by the traders were not common in either the transitional forest or the barrens, any Dené who wished to participate more fully in the fur trade began to expand their territories at least seasonally to include the full boreal forest (Gillespie, 1976:6,8; Glover, 1962:107; Minni, 1976:61; Jarvenpa and Brumbach, 1984:148; Sharp, 1977:37; Smith, 1981b:272,273).

By this time, there was less active Cree resistance to Dené coming south to trap or trade. Some tensions still remained, however, and most Dené travelling through regions occupied by Cree continued to be on their guard (Hanks and Winter, 1991:49; PAM, MG1 B14, 1a:158; Smith, 1981c:141; Tyrrell, 1934:458). Thus, although this expansion had begun as early as the 1760s (Gillespie, 1975:383), most of the people who pushed southwards did so after the smallpox epidemic of 1781 (Smith, 1981b:273; 1981c:148). This epidemic devastated the Cree populations. It left the northern parts of the full boreal forest more open to the Dené, as many of the surviving Cree had evidently regrouped in the southern parts of their territories where game and fur resources were even more favourable (Smith, 1975:175,176; 1981c:148). By the end of the competitive period, the Dené were retreating slightly northwards again, as Cree reclaimed the Churchill River region

(Brightman, 1993:277; Smith, 1975:176). The number of Dené people trapping and hunting in the full boreal forest and the amount of time that they spent there continued to increase over time, however (Gillespie, 1975:382,383; Smith, 1981b:273; Yerbury, 1986:74).

This new pattern took trapping Dené outside of the normal barren-ground caribou wintering range. These people had to adjust to this new environment, adopting subsistence and settlement patterns more like those of the Cree for those seasons during which they were in the full boreal forest. Although barren-ground caribou were still preferred over any other large game when they could be found in this region (Irimoto, 1981a:41), Dené paid more attention to moose, woodland caribou, small game and fish for subsistence than they did when they were farther north (Gillespie, 1976:8; Jarvenpa, 1976:44,47; 1980:41; Sharp, 1981:223; Smith, 1982:59,63; Smith, 1981b:272). Spending their winters trapping in the forest, and hunting and fishing species less concentrated than the barren-ground caribou in that season, these people began to winter in much smaller groups than they had in the transitional forest (Sharp, 1977:37; Smith, 1982:62). Like the Cree, they would have had to disperse even more as the local game was gradually depleted towards the end of the competitive period.[162]

It has been suggested that winter fishing was unimportant to Dené until they began trapping in the full boreal forest (Smith, 1982:62; Smith, 1981b:281). Fishing would have become that much more important to those people spending time in the full boreal forest as the competitive period progressed, when large game was growing scarce in this region (Yerbury, 1986:144). It was at this point, then, that ice chisels became especially useful, making it easier for the Dené to set nets under ice when angling was not productive enough (Smith, 1981b:281). Winter camps may have become more closely oriented around good fishing sites, and, when even the fish failed, Dené could go to the posts to get rations there.

It should be kept in mind that even as the number of eastern Dené trapping in the full boreal forest region was growing, there were still many more who continued to live as they had in earlier times, following the caribou and only occasionally visiting the trade posts

with meat or hides to trade. At the end of the Bay-side trade years, Hearne, for example, wrote that most of the Dené were uninterested in moving south into the full boreal forest for winter trapping. It was too difficult to get enough caribou to live on there, so only the most ambitious traders among the Dené made this sacrifice at this time (Hearne, 1971 [1795]:81). Throughout the entire competitive period, even those Dené who chose to spend their winters trapping tended to return to the barrens each summer after visiting the posts (Gillespie, 1975:382,383).[163] It was not until the later fur trade that more than a very few Dené stayed in the boreal forest year-round.

The routes and methods of travel used by Dené started to change during the period of inland competition. While travel to the Bay declined with the establishment of inland posts (Birket-Smith, 1930:13; Gillespie, 1975:382), there was increasing traffic to and from the new posts which were often in locations not much used by Dené previously. In north-central Manitoba, this could have meant increasing Dené traffic on or along Southern Indian Lake and the Churchill River, for example (e.g. HBCA, E.3/3:32d; Tyrrell, 1934:338).

Most of the Dené still preferred to walk over land at this time. They were not comfortable with canoe travel, and for those who came south only briefly to trade, there was little need to change (Gillespie, 1976:8; Glover, 1962:109); there were no water routes from their own country down to the Churchill River (Williams, 1969:194,195). Still, those who spent more time in the full boreal forest soon adopted the larger, more stable Cree canoes for travel up and down the river systems. Use of canoes for travel allowed the Dené to move through the forest more quickly, carrying larger loads than if they went on foot. This was a benefit to those involved regularly in the fur trade (Sharp, 1977:38; Smith, 1982:12).[164]

Canoe travel also set new constraints on Dené travel patterns. Most obviously, Dené using canoes for travel were now more often following water routes; before, they had walked over land. Within the full boreal forest, river systems made far more handy travel route, in both summer and winter, than they did farther north where the rivers typically ran

perpendicular to the desired direction of travel. Thus, travelling along waterways by canoe or over ice would not have been such an inconvenience for Dené in terms of reaching their destinations, but it did represent a significant change in the way that they used the land around them. They became more closely oriented around water systems while in the forests, although they still used more of the land away from the major water routes than the Cree did (Brumbach and Jarvenpa, 1989:120,121). As Dené became more committed to travelling over river systems, break-up and freeze-up could have a greater effect on their travel, as they did on Cree travel, than when journeys were made mainly over land. This was more likely to have been a constraint to travel while in the full boreal forest, where the bush is thick. Even for Dené who were now using canoes for travel, break-up and freeze-up did little to stop them from travelling when they were in more open country where overland travel was easier (e.g. Tyrrell, 1934:515).

Because canoes used for travel had to be larger and sturdier than traditional Dené canoes, those people using them now had little choice but to find good birch trees for making covers; rawhide would likely not be suitable for extended trips. When using them for travel, in contrast to their traditional, more limited use of canoes, in which case even a large group could share one or a few canoes (Hearne, 1971 [1795]:119), enough canoes had to be made so that everyone in the party could travel together. Larger birch thus had to not only be found, but found in suitable abundance. It became common for Dené wintering in the full boreal forest to walk to the posts in the spring with their furs and other goods to trade, build their canoes at or near the posts, then canoe away after break-up. This way, birch stands could be found and harvested before the people ever left the boreal forest and its supply of birch trees behind (Smith, 1981b:277).

Making a number of the large Cree-style canoes was a considerable amount of work. Dené would no doubt have preferred to be able to re-use the canoes each spring for as long as these remained in good repair. This required them to return in the spring to the place where they had left the canoes the previous year (Sharp, 1977:38). This preference

reduced the flexibility of their annual round, somewhat. If a group was determined to be in a different area in the spring than where the canoes had been cached, there was little to stop them, of course. But having to make a new set of canoes each year likely made it preferable that they did return to the caches when possible.

During the period of inland competition, canoe travel seems to only have been adopted by those Dené most involved in the fur trade. Among the Edthen-eldeli Dené, for example, few of whom were spending any more time in the full boreal forest than they had prior to the fur trade, most people continued to walk over land in both summer (Alcock, 1916:446,447) and winter (Downes, 1943:114), well after the competitive period. Of those Dené who did take up canoe travel, few were comfortable with it in any but the calmest conditions. They avoided rougher waters (Gillespie, 1976:8; Glover, 1962:109,113) and were less likely than the Cree to attempt to shoot rapids.[165] They did not like to cross larger bodies of water in the windier seasons, and stuck close to the shoreline whenever possible (Irimoto, 1981a:90).[166] This was all common sense; Cree would have taken similar care in choosing where and when to cross dangerous water, but Dené apparently were just that much more cautious due to their lesser experience. Between their dislike of canoeing more difficult waters, this including several parts of the Churchill River, and their desire to summer on the barrens, many eastern Dené preferred to wait until the winter to travel over land or over ice to the trade posts and then back to their own camps rather than making part or all of this journey by canoe (Alcock, 1916:439).

Winter travel also underwent some changes among Dené who had expanded into the full boreal forest. The river and lake systems are the most convenient travel routes in the winter as well as in the summer. It was more feasible for Dené travelling through this region to now do so over ice. People could still walk over land whenever this was more convenient or safer, however, and Dené frequently did (Downes, 1943:114; Jarvenpa, 1976:60). Greater changes resulted when dog teams were eventually introduced for winter travel.

Dogs had been kept by Dené traditionally, and dog teams used for pulling toboggans were not unheard of. All the same, teams were not common as there was little need for them in the traditional life of the Dené. Women could pull the toboggans over the hard-packed snow of the transitional forest as fast as they needed to travel in a normal year. It was not until Dené became more involved in the fur trade and wintered farther south, in the full boreal forest, that dog teams became more useful; use of dog teams increased the speed with which a toboggan loaded with furs, fish, meat and other goods could be carried from place to place (Sharp, 1977:38; Smith, 1982:11,12). Thus, it was not until the later fur trade, particularly after 1900, that use of dog teams by the Dené for winter travel became common (Alcock, 1916:439; Sharp, 1977:38; Smith, 1982:11). They may have been used by at least some families as early as the period of inland competition. If so, however, they were probably still quite rare among the eastern Dené (e.g. Franklin, 1910:219).

With the adoption of dog teams for winter travel, Dené would have experienced some new constraints on their travel routes. Because dog teams have more difficulty crossing over deep, soft snow or over rugged terrain than people on snowshoes, travel by dog team was most effective if limited to routes over ice and to regularly-used trails which quickly become packed down. This may have resulted in an increased orientation around the river and lake systems in the winter. The river and lake systems were the most convenient travel routes in the full boreal forest anyhow. Trap-lines and other paths used day to day could still be followed over land by dog team, but long distance travel over land may have declined for the Dené in the full boreal forest (Irimoto, 1981a:94; Sharp, 1977:38). Other modifications to their previous land use patterns would have been necessary as well. Dené using dog teams would face the same problems stemming from having to feed the dogs year-round as the Cree did.

Other changes to the culture of the Dené during the competitive trade period were material. European trade goods were becoming more common as more people entered the fur trade. Still, traditional weapons and methods for hunting and trapping were still used by

Dené all through this period (Sharp, 1977:39,40). Firearms, for example, were becoming slightly more common, especially by the end of the competitive period, among those people attached to the trade posts in some way (e.g. Franklin, 1910:217), but traditional methods proved more effective for hunting caribou at this time (Birket-Smith, 1930:19-23; Sharp, 1977:39,40). The muskets were more commonly used for hunting moose, woodland caribou and bear while in the forests, and perhaps waterfowl and more isolated barren-ground caribou, if they were used much at all (Birket-Smith, 1930:23,24; Sharp, 1977:39; Smith, 1982:59). Steel traps baited with fish or castoreum eventually came to replace the traditional deadfalls and snares (Jarvenpa, 1980:113), but steel traps were uncommon in the north until after the end of the competitive period (Brightman, 1993:266; Helm and Leacock, 1971:359). Even after 1900, deadfalls and snares were still preferred by the Dené for trapping certain species (Birket-Smith, 1930:24).

Other trade goods sought by Dené were typically the same as those which had initially attracted them to the trade: useful items like metal axes, ice chisels, knives, files, fish hooks, needles and awls, rope, and kettles. Metal tools quickly reduced the need to find sources of workable stone and bone for making knives, axes, awls and so on. However, with the possible exception of the ice chisels, they had little significant effect on how people used the land. Black tea, sugar, tobacco and alcohol, each of which were being traded in increasing amounts during the competitive period, were also desired. These, too, had little effect on land use practices other than to encourage more trade among those who sought them (Sharp, 1977:37-38).

10.3.3 **Spring.**

With the establishment of inland posts, increasing numbers of Dené became more involved in the fur trade. The degree of this involvement varied from group to group, however. Many of the people continued to trade only minimally, even towards the end of the competitive period. The early spring season during the years of inland trade thus could find Dené people occupied in numerous different ways.

Most Dené continued to spend the early part of spring hunting scattered groups of barren-ground caribou (Hearne, 1971 [1795]:14,78; Irimoto, 1981a:15; 1981b:46,48; Jarvenpa, 1980:19), preparing to move north when the caribou did. With the growing influence of the fur trade throughout the competitive trade years, however, a small but growing number of Dené were spending parts of their winters trapping furbearers in the southern portions of the northwestern transitional forest and in the full boreal forest. Some of these people took advantage of the good trapping conditions of the early spring season as well. Marten and otter, for example, were taken as early as February or March (Hearne, 1971 [1795]:21; HBCA, B.91/a/1; B.91/a/2:8d),[167] before the caribou even began to migrate.

If they were lucky enough to find a productive trapping area in the vicinity of a lake where caribou were wintering, people could combine trapping with caribou hunting until the caribou began to migrate or were hunted out. Most Dené were more likely to give up the chance to trap a few marten than they were to miss hunting caribou, however. It is unlikely that many would have bothered with trapping in the late winter to early spring months unless the caribou were farther south that year, where furbearers tend to be more productive.

When caribou failed them in the early spring, Dené sometimes had to resort to fishing (e.g. Hearne, 1971 [1795]:16). Availability of ice chisels probably made this a more feasible option. Good ice fishing sites may have begun to have more influence on Dené camp choice now that it was becoming easier to exploit the fishery. Small game like grouse and hare could also be snared for variety or out of necessity (Hearne, 1971 [1795]:22). If they were far enough south to find moose, Dené sometimes tried to hunt these as well (Irimoto, 1981a:41). With some Dené spending more time in the full boreal forest, the amount of moose taken by them in the early spring probably grew. On the other hand, with spring subsistence based less on barren-ground caribou and more on the more dispersed game, the number of people who could camp together in this season decreased (Smith, 1982:62).

By March or April, people were usually preparing for travel. In past times and, for most of the eastern Dené, during the competitive trade period as well, the journey planned would be to follow the barren-ground caribou northwards. Many of these people would make their own way northwards with the caribou around April or May while the lakes remained frozen (Hearne, 1971 [1795]:25,291; Smith, 1981b:275,276).

During the fur trade, however, some people would first make their way to a trade post instead. As in the period of Bay-side trade, a few Dené hunters would start out for Prince of Wales Fort at this time in order to hunt geese for that post. It was mainly the Dené living closest to the Bay who continued to visit Prince of Wales Fort, but the odd group from farther west may also have travelled there from time to time. In order to reach the Bay by the time the waterfowl arrived in May, the more distant individuals were normally crossing through north-central Manitoba sometime in March or April (Gillespie, 1975:365; Hearne, 1971 [1795]:25,272; Yerbury, 1986:36). If they had any furs or meat to trade, the goose-hunting parties may have stopped in at an inland trade post on their way east, picking up desired supplies; or they may have gone directly to Prince of Wales Fort, stopping only to hunt or fish as necessary along the way.

People travelling to Hudson Bay to hunt or trade rarely took their whole family with them. Usually they left the winter camps together with their families, but parted company somewhere along the way, leaving the others to travel up to the barrens without them. The journey to the Bay could be made more quickly in this way. They would plan to meet up again on the barrens after business at the post was complete (Hearne, 1971 [1795]:25,291). The timing of the families' leaving the forests would be similar to that of people who left with the caribou.

Others ignored Prince of Wales Fort and made the pre-break-up trek to an inland trade post instead, especially after posts had been set up closer to Dené territories. Due to the intense competition between trade companies for furs, some trappers could convince the traders to come to their camps to trade, rather than bringing the furs down to the posts

themselves (HBCA, B.83/a/2:8d). Still, the inland posts at which Dené traded often received a regular supply of furs and meat brought in by their trappers through the months of March and April (e.g. HBCA, B.91/a/2:8-9). Particularly for those people who wished to trade but who still hoped to hunt caribou while travelling to the barrens, this was a good time to come to the posts, pay off any debt taken the previous year, and pick up their supplies for the coming season(s). Trade in this season rarely occupied the Dené for more than a few days (Gillespie, 1975:365). They could still leave the post for their next destination, usually the barrens, well ahead of break-up.

Depending on how long they delayed their departure north, this might have had little effect on their caribou hunting. Migrations of barren-ground caribou can take several weeks to pass through any given area and the males tend to lag behind the more concentrated females and yearlings, often still crossing north through the forests in June (Gordon, 1975:72; Harper, 1955:12; Kelsall, 1968:106,139,140). Given this time span, the point in the season at which people made their way to the barrens could have varied even before they ever became involved in the fur trade. They should have been able to fit in a visit to a trade post at some point before break-up, before they moved beyond the traders, and still be able to hunt scattered bands of caribou as they travelled north themselves as late as June (e.g. Hearne, 1971 [1795]:299).[168]

Even if they left too late to hunt caribou while travelling north, most people did manage to make their way onto the southern barrens by some point in the summer where they would hunt caribou more intensively again (Gillespie, 1975:382,383; Hearne, 1971 [1795]:25,320; Pettipas, 1993:20). But a few, mainly those who were employed by the posts, sometimes remained south of the treeline all through the summer and had no opportunity to hunt barren-ground caribou again until the return of the herds in the fall. If a regular supply of caribou meat was desired by such people as these who could not follow the herds up to the barrens, they would have to take enough caribou to satisfy their wants when the caribou passed by - all in one short period of time.

It was likely at this time that at least some of the Dené began to alter their caribou-hunting strategies. The eastern Dené peoples appear to have traditionally followed the barren-ground caribou through their entire annual round. They would hunt the caribou whenever their paths crossed and could set up an ambush for a larger kill when the opportunity was there to do so. As people began to spend more time in the forests, however, their seasonal movements no longer matched those of the caribou so well. It became more effective for these people, especially those who no longer went to the barrens at all, to switch more exclusively to the ambush approach typical of Dené caribou hunts described in more recent historical accounts (Gordon, 1990b:400; e.g. Irimoto, 1981a:16; Sharp, 1977; Smith, 1978).

By focussing their caribou-hunting efforts on taking as many animals as possible during the spring and fall migrations, it was sometimes possible to get enough meat and materials to carry the people through until the next migration (Smith, 1978:71). To accomplish this, hunters had to get ahead of the migration, leaving fairly early in the spring, and set up their drive lanes and corrals somewhere near the treeline at a strategic location through which large numbers of caribou were expected to pass. Networks of communication between neighbouring groups of Dené would have become all the more important when there was so much more pressure to be at the right place at the right time in order to intercept the caribou (Irimoto, 1981a:16,129; Sharp, 1977:36; Smith, 1978:75).

Unlike the herd-followers, these people might remain in the forest after the passage of the caribou, preserving much of the meat to last them through the rest of the season. They could then retreat southwards in order to return to their trapping or to hunt waterfowl for the posts if desired, and/or to trade. If enough caribou had been killed at this time, there was little incentive to move on to any of these other activities, however (Hearne, 1971 [1795]:81).

As the years went by, it became increasingly common for Dené who had come to the inland posts ahead of break-up to remain there at least until the rivers were clear of ice

(Smith, 1981b:277). They would gather together at or near the posts when the ice first began to break, if they had not been there already. At all but the most northerly posts Dené were not infrequently camping adjacent to Cree (e.g. HBCA, B.83/a/2:9; B.91/a/2:14d). By this time, Cree and Dené could usually share space without incident. There were exceptions, though; consumption of alcohol available at the posts often led to fights between the two peoples, for example (Tyrrell, 1934:458).

Dené who were involved enough in the fur trade to spend the break-up in the full boreal forest or southern portions of the northwestern transitional forest were generally using canoes for summer travel. While assembled around the post in the early spring, Dené, like the Cree, would go about constructing canoes (Smith, 1981b:277). Sometimes canoes had been cached near the previous fall and had only to be retrieved and repaired (HBCA, B.91/a/1:9). Often, however, new canoes had to be constructed by at least some of the people. So, suitable stands of birch trees were sought out at this time (HBCA, B.83/a/1:18d; B.83/a/2:9) if birch had not already been found and its bark harvested and carried with the people until it was time to construct the canoes.

Though canoes were sometimes built right beside the trade posts, Dené would also leave, sometimes with Cree, for more suitable canoe-building sites in the area (HBCA, B.83/a/2:9). As it was for the Cree, canoe-building was probably an activity involving co-operation of many different members of a family, so whole families may have gone together to the canoe building sites. In between time spent working on the canoes, people could go about other activities typical of this season, including socializing, manufacture and repair of items needed for the summer such as fish nets, preserving of meat taken during hunts earlier in the season, snaring small game, trapping furbearers, preparing pelts, and fishing - either through the ice or at sites of the earliest open water.

Canoe-building sites may have been selected based largely on their proximity to places where the water would open early. Not only did this make fishing easier, but waterfowl could also be hunted when they first began to arrive. Around the posts, if

Homeguard could not combine the waterfowl hunt with their canoe-building activities, they would go on immediately from building or fetching their canoes to the waterfowl staging sites. In areas over which migratory waterfowl passed in the spring, Dené still in the forest probably did like most Cree and took the opportunity to hunt geese, ducks and swans for the posts, and for themselves (HBCA, B.91/a/1:9; HBCA, B.91/a/2:13).[169]

Some Dené involved in the fur trade chose not to visit the trade posts until after the break-up. Rather than moving northwards with the caribou, or to the Bay, or to an inland post in the early spring, these people may have spent the season in camps located near muskrat and beaver habitat, as more recent Dené trappers have done (Blondin, 1990:122,147,139,156,158; Irimoto, 1981a:126; Jarvenpa, 1976:46,47,63; 1980:17,71,89). Prior to break-up, muskrat and beaver could have been taken from their frozen lodges in the same way that they were taken by Cree (Jarvenpa, 1980:71; Smith, 1982:9). Once the water began to first open on the streams frequented by beaver, these animals could be trapped, netted or shot after emerging from their lodges (Jarvenpa, 1980:89).

Muskrat and beaver could have provided Dené trappers with some meat (Blondin, 1990:157; Jarvenpa, 1976:55; 1980:17,71). This was a change from their diet while following the caribou year-round, as neither muskrat nor beaver were emphasized by eastern Dené previously. Fishing was also important to these people when they started to remain behind when the caribou moved north (Jarvenpa, 1976:55; Smith, 1982:62), as were waterfowl if they were staging in the area. Other small game could be snared or hunted during break-up as well (Jarvenpa, 1976:55). Moose, woodland caribou and straggling barren-ground caribou may have been hunted when they were available, and sought out when they were not (Jarvenpa, 1976:44,55; Smith, 1982:59).[170] Meat preserved from earlier in the season and foods bought earlier from the posts could be quite important to Dené trappers when they became more and more focussed on the furbearers (VanStone, 1974:102). The earliest of the spring plants could also have been harvested as they came out.

Like the people waiting out the break-up around the trade posts, these Dené had summer equipment to retrieve and repair, or to make, including canoes. The best spring sites for Dené trappers would have been near not only sites of rich furbearer and food resources, but also decent stands of suitable trees and space for canoe-building. A few members of a group could sometimes be sent ahead of the break-up on foot with furs for trade. The others, in these cases, would not join them with the rest of the furs and goods for trade until they could canoe there (HBCA, B.91/a/2:11d).

Once Dené began travelling more by canoe up and down the river systems, they began to cache their seasonal equipment and preserved food along these travel routes. This equipment could be picked up while returning down the same route in the next season (Blondin, 1990:148). So, as Dené left the wintering places or their spring break-up camps for their summer destinations, winter equipment no longer needed could be left behind, while equipment needed for the summer could in turn be retrieved from their caches. Re-use of seasonal equipment could have become more common when Dené began regularly passing through the same places in the spring as they had in the fall - a result of canoe travel and of increasing attachment to specific trade posts.

By the end of the competitive period, a few Dené may have been using dog teams for winter transport. If they did not plan on taking the team with them everywhere they went from spring to fall, Dené dog team users would also have to find some place to leave the dogs where they could retrieve them later. Since this requires that people remain near the dogs through the summer in order to feed them, dog teams were probably not common among Dené until they began to settle into more permanent settlements in the transitional forest, during the later fur trade.

10.3.4 **Summer**.

Summer land use patterns remained much as they had been during the period of Bay-side trade. Most people went north to hunt barren-ground caribou and were already

well on their way to the barrens, on foot, by the time the break-up was complete in the boreal forest. Still, some people were leaving the forests later in the season than people did before the fur trade. Additionally, the small number of Dené who remained in the forests through the summer had to shift to a more generalized diet and the settlement patterns associated with this. Thus, with inland trade posts and with Dené's increasing interest in the fur trade, there were a few new changes.

Of the people who had spent the spring at Prince of Wales Fort for the goose hunt or for trade, a few remained on through much of the summer as Homeguard for the post, just as they had in the earlier trade period and have done in more recent times (Alcock, 1916:447; Birket-Smith, 1930:30; Bussidor and Bilgen-Reinart, 1997:19,22). With the over-exploitation of game and furbearers in the subarctic as the fur trade progressed, the Hudson Bay Lowlands became particularly devoid of large game and beaver (Bishop, 1972:63; Smith, 1981a:258). This would not have had too much effect on Dené, however. Fishing and waterfowl hunting were the dominant subsistence activities in the Lowlands in the early summer (Alcock, 1916:447; Bussidor and Bilgen-Reinart, 1997:19,22). The Homeguard had little need to trap beaver as they could get what they wanted from the Europeans by trading meat and other provisions. And by the later summer, when the fishing was falling off, it was time to move inland and north to the southern barrens where they could hunt caribou (Alcock, 1916:447; Birket-Smith, 1930:30; Bussidor and Bilgen-Reinart, 1997:19,22). If it was simply too difficult to obtain food while in the Prince of Wales Fort area, there was little stopping Dené people from abandoning the post and the fur trade in order to go north to hunt caribou still earlier (Smith, 1982:60). The barren-ground caribou and other game were not nearly so reduced by the Dené hunters in this period as the moose, woodland caribou and beaver had been farther south, where hunting and trapping for the fur trade was more intensive (VanStone, 1974:93).

Most of those people who summered south of the treeline during the Bay-side trade period had been those trading at or hunting for Prince of Wales Fort. With the inland trade,

Dené summer presence in the forests west of the Lowlands would have grown slightly as well. Some trapping groups remained at the trade posts through the break-up, or did not even arrive at the posts for trade until after break-up was complete. After finishing their trading, these people left for wherever they planned to spend the summer, either by canoe (Brumbach and Jarvenpa, 1989:27; PAM, MG1 B14, Ia:147; Smith, 1981b:276; Tyrrell, 1934:495) or over land (Alcock, 1916:446,447; Brumbach and Jarvenpa, 1989:120,121; Glover, 1962:109), depending on the availability of canoe routes to their desired destination and on their personal comfort with canoe travel.

For most, the destination was north to the barrens in order to spend the remainder of the summer as they had for generations (Birket-Smith, 1930:29; Bussidor and Bilgen-Reinart, 1997:12; Smith, 1981b:277). To the disappointment of the company traders, Dené trappers still preferred the barrens - where there were friends, family and caribou - to passing the summer in the forest where it was more difficult for them to get the kind of living they were accustomed to (Gillespie, 1975:382,383; Hearne, 1971 [1795]:320). Mention is occasionally made of Dené trading at inland or Bay-side posts in late June (e.g. HBCA, B.91/a/2:1) and even July (e.g. HBCA, E.3/3:32d). However, even these people likely travelled north at some time before the end of the summer in order to participate in the important late summer and early fall caribou hunts north of the treeline.

If they were lucky, the travellers might have run across a straggling group of caribou during their northwards journey, even at this time of year. More commonly, while travelling, they fed themselves on fish, small and large game, bird eggs, plants and food preserved earlier or bought at the posts. If travelling by canoe, hooks could be thrown into the water or fish nets set each night (PAM, MG1 B14, Ia:153).

Fishing in the early summer was quite reliable. Travel camps would be best set up near those places where fish typically were concentrated in this season: the bases of rapids or falls on the rivers and streams (PAM, MG1 B14, Ia:156); stream mouths and confluences (PAM, MG1 B14, Ia:157); lake and river narrows (Winterhalder, 1978:352);

the eddies formed around small islands (Winterhalder, 1978:352); and the shallow, weedy bays where the jackfish were always ready to take a hook (HBCA, E.3/1:62d). If not travelling along water routes, Dené could still find such sites with some regularity. Jackfish, for example, were available in just about any body of quiet clear water (Rostlund, 1952:34), including many of the bays of the smaller streams and inland lakes encountered while Dené travelled over land. Also, crossings of lakes and rivers were generally made at narrow sections, and camps were often made on either side of the crossing. Fishing would have been productive at such sites.

Dené who were not leaving the forest immediately after late spring trading were even more certain to camp near good summer fishing sites such as these (Irimoto, 1981a:16,40,89). Having given up caribou for this time, they had to turn more to other food resources for subsistence while in the forests, focussing on many of the same boreal species that the Cree did (Gillespie, 1976:8; Sharp, 1981:223), and fish was the most important of these in the early summer (Irimoto, 1981a: 15,126,127; 1981b:45,48; Jarvenpa, 1976:50; Sharp, 1981:223; Smith, 1982:62; Smith, 1981b:281). As on the barrens, summer fishing could be done with nets when large amounts of fish had to be caught, but spearing and angling continued to be popular methods of fishing as well (Birket-Smith, 1930:26-28).

Dené summering in the forest also began to hunt moose, the most important large game of the full boreal forest. Moose hunting was particularly successful as mid-summer approached, when the heat and bugs drove them into shallow water or wallowing holes (Irimoto, 1981a:40,102; 1981b:48; Jarvenpa, 1980:92; Sharp, 1981:223; Smith, 1982:59). People new to moose hunting did not tend to have much success at it, however, or at hunting the similarly behaving woodland caribou (Gillespie, 1976:10). So while these new sources of large game were being taken somewhat more regularly by Dené hunters as time passed, many people restricted most of their large-game hunting to whatever barren-ground caribou they could find still hanging about in the transitional forest (e.g. Irimoto, 1981a:15).

Hunting or snaring nesting and moulting waterfowl, including geese, ducks, loons and gulls, were common alternatives to large game hunting by the Dené (Gillespie, 1976:10; Irimoto, 1981a:103). Eggs of these birds were collected during the early summer, as they had been farther north (Irimoto, 1981a:127). The nesting grounds of waterfowl would have attracted Dené to camp nearby in the summers. Small game like hare, grouse, porcupine and furbearers were also sought out for food while the people were in the forest (Birket-Smith, 1930:18; Irimoto, 1981a:126) and the many plant foods of the forest no doubt were harvested as well. All of these alternative foods, small game, fowl and plants, would have become even more important to the Dené in the forests, as would fish, when large game began to decline towards the end of the competitive period.

The main reason for any Dené to be in the forests at all during the summers at this point was because they were involved in the fur trade, fishing, hunting and trapping for the posts and for themselves. Several of these families may have had connections to the posts through country marriage, and this would have given them more reason to remain nearby.

The weeks after break-up encompassed the time that beaver were taken most intensively by trappers. This could often also occupy people in the early summer, typically until some time in June (Jarvenpa, 1980:86,89). During the competitive period, traders may have been accepting some furs taken during the summer months, in spite of their poorer condition (e.g. HBCA, B.91/a/2). Whether the furs were acceptable for trade or not, people were hunting beaver in the early summer, at least until they became scarce, as the beaver could stay fat into the early summer season and were considered by many to be good food (Blondin, 1990:157). It was usual to net the beaver on their way out of their houses (Birket-Smith, 1930:25). Beaver generally continue to use the same houses until they are destroyed beyond repair. So, people who had come to an area productive of beaver in the spring, before break-up, could have remained in the same general area into the early summer and still take beaver if these had not already been exhausted.

When they had finished with the beaver, these people could have made their way to the posts to trade any acceptable furs taken in the seasons since their last visit with a trader. Furs were being traded at Indian Lake House well into the summer, including June and July (e.g. HBCA, B.91/a/2), and Dené were among the summer visitors to this post (e.g. HBCA, B.91/a/2:1). While some of these people may have travelled to the barrens immediately after this trade, at least a few seem to have chosen to remain in the forest. Like the Cree, Dené summering in the forests began to hold their gatherings at good fishing sites near the trade posts (Irimoto, 1981a:16; Jarvenpa, 1980:41; Jarvenpa and Brumbach, 1984:178). These gatherings tended to be fairly brief, although they sometimes lasted until the early fall (Jarvenpa and Brumbach, 1988:601). It is conceivable that, by this time, the Dené remaining in the forests may have sometimes shared fishing sites with Cree as they sometimes did around the posts and while building canoes.

In addition to fishing, hunting and plant gathering, Dené summering in the forests would have spent much of their time drying fish and meat, preparing pelts and hides, making and repairing equipment, socializing and trading - much as they had on the barrens (Irimoto, 1981a:127; Jarvenpa, 1980:92; Jarvenpa and Brumbach, 1988:601). Summer gatherings were a traditional time for the drum dances and other ceremonies (Blondin, 1990:58,59; Jarvenpa and Brumbach, 1988:601), and these activities likely would have continued at gatherings held in the forest. The size of summer gatherings in the forest were generally smaller than those on the barrens. For one thing, there were far fewer Dené individuals present in the forest to gather together. But even if there had been a large number of Dené summering in the forest at this time, they could not stay in such large groups or for as long as was often possible while hunting concentrated caribou herds farther north (Smith, 1982:62).

Summer gave rise to some new considerations for the Dené when choosing their camps. In former times, they had rarely been in the forested regions during the bug season. Boreal and transitional forest sites used by the Dené for summer camps would now have to

be chosen with consideration given to the need for exposure to breeze. With their greater orientation around waterways than had been the case in the past, they were more likely to be camping next to larger bodies of water anyhow. Some people may still have continued to set their camps back in the trees some distance, feeling safer when hidden from easy view of the water (e.g. Hanks and Winter, 1991:49). However, they were enough at peace with Cree neighbours by this time that it was probably not so necessary to hide anymore. Comfort may have taken precedence in many cases.

Dené had another thing to worry about while summering in the forests: *Nakhani*, the bushmen. This invisible enemy was one reason why Dené were reluctant to spend the summer south of the treeline (Birket-Smith, 1930:29; HBCA, B.91/a/2:13). For fear of this summer hazard, some people still prefer to make their camps on islands. There the water separates them not only from the bushmen, but also other enemies, as well as from bears and forest fires (Irimoto, 1981a:90).[171]

Dené summering in the forests generally gave up intensive fishing by the middle of summer (Jarvenpa, 1976:50; 1980:91,92). By this point in the summer, the barren-ground caribou were aggregating and beginning the first stage of their southward migration from the calving grounds to the southern barrens (Burch, 1972:345; Kelsall, 1968:41,106,107; Smith, 1978:71). Knowing this, and because the late summer/early fall caribou hunts were so important for hides and meat, most of the people who had stayed behind at the Bay or in the forest would begin at this time to travel north to the treeline. Once on the barrens, they could rejoin their bands and participate in the rest of the summer's activities, not least of which were the caribou hunts (Birket-Smith, 1930:30; Bussidor and Bilgen-Reinart, 1997:37; VanStone, 1974:24).

Very few eastern Dené would remain in the forests at this time, i.e., by late July or August. Those who did were mainly those who had chosen to stay south of the treeline all year. These people would do like the Cree, concentrating their hunting efforts on moose (Irimoto, 1981b:48; Jarvenpa, 1980:92) and taking what small game, fish, fowl and plant

foods that they could find to supplement their diet. Berries were collected in this season by people on the barrens, and Dené in the forests began to look for them around this time as well. Furs were of little value when trapped in this season, but people may have visited the posts to trade moose meat when the hunts had gone well. Traffic to and from the posts thus continued for as long as the posts remained open (e.g. HBCA, B.91/a/2:29,30). Many inland posts would close for several weeks in the late summer when the traders left to bring the furs in to their suppliers and to pick up new trade goods.

10.3.5 **Fall.**

The vast majority of Dené people were spending the early fall season in the same way that they had before the fur trade. Firearms had been adopted by some Dené as early as the period of Bay-side trade for hunting caribou in seasons when these were more dispersed. While the caribou were migrating in the fall, however, the traditional method of spearing the animals as they crossed water bodies proved more effective and continued to be used (Williams, 1969:15).

Most Dené tried to be on the barrens by the late summer, when the caribou hides were at their best. The early fall caribou hunts had attracted the largest Dené gatherings of the year prior to the fur trade and this did not change (Gordon, 1975:71,72,73; Smith, 1982:13; Smith, 1978:69,71). Even so, by the time of the competitive trade period there was at least a small percentage of the population each year who did not reach the barrens for this hunt. A growing trade in manufactured cloth and canvas may have lessened the importance of hide preservation for the personal use by those Dené most involved in the fur trade, somewhat, although good hides could, themselves, be traded.

Caribou herds often push southwards into the forest in the early fall (Harper, 1955:18; Irimoto, 1981a:15; Kelsall, 1968:64,107,128), at which time the quality of their hides could still be in reasonable condition. Because of this, Dené who chose to stay in the forests year-round could sometimes still participate in an early fall caribou hunt and acquire not only meat but some good hides from it. They could travel north towards the treeline

near the end of summer, as many Dené have done in recent times, to a place where they anticipated the caribou might cross (Alcock, 1916:447; Irimoto, 1981a:15,16).[172] If the herds behaved as expected, people could ambush the caribou at some likely water crossing along that migration path in the transitional forest in much the same way that the others would hunt migrating caribou farther north (Gordon, 1990b:400; Irimoto, 1981a:15). For the Dené, fall caribou-hunting sites south of the treeline were probably uncommon before the fur trade drew more people into the forest year-round.

While waiting for the caribou in the transitional forest, people could fish, collect berries, and hunt or snare small game for food as well as eating meat preserved earlier in the season, much as they did on the southern barrens (Irimoto, 1981a:16). When the early fall camps were made along a migratory waterfowl flyway, the waterfowl returning southwards around this time could also be an important source of food for people waiting for the caribou, or for when the caribou did not come at all (Jarvenpa, 1976:47). Because this early fall caribou hunt was less predictable than its equivalent on the barrens, such alternative foods could have increased in importance for Dené in the forest.

These resources were even more vital to those Dené who did not go north to hunt barren-ground caribou in the early fall at all. This abandonment of fall caribou hunting was probably very rare among eastern Dené at this time. If people summering in the forests were unable or chose not to participate in early fall caribou hunting, they would likely have adopted a way of living in the fall very much like that of the Cree.

For example, moose hunting could have been important. Dené spending year-round in the forests in recent times have hunted moose in the fall season, especially during the rut. Like the Cree, they have learned to lure the moose out of the bush by using calls (Birket-Smith, 1930:23; Irimoto, 1981a:17,18,122; Jarvenpa, 1976:67). Hunting of moose in this season probably began sometime during the years of inland trade. The Dené were still not very good moose hunters at this time, however (Gillespie, 1976:1), and by the end of the competitive period, moose were becoming hard to find anywhere near the trade posts.

Until they too became scarce later in the competitive period, woodland caribou may have been hunted by Dené in the forests (Smith, 1982:41; Smith, 1981b:272), although the woodland caribou were still considered by the Dené to have inferior meat to that of the barren-ground caribou (Hearne, 1971 [1795]:225). Woodland caribou also undergo migrations in the early fall, albeit in smaller groups and over shorter distances than the barren-ground herds. Dené in the forests may have done like some of the Cree and watched for these limited migrations, hunting the woodland caribou at water crossings in much the same way that barren-ground caribou were taken at this time of year, farther north.

Fish - whitefish, in particular - were probably the most significant alternate resource for Dené in the forests, however, especially after the local large game populations declined. Dené had always fished when caribou were scarce or late in arriving. Still, it was not until the fur trade drew some people away from following the caribou year-round that fish came to be emphasized to the extent that they have been in more recent years (Smith, 1982:62,63). If barren-ground caribou were not to be sought out until winter brought them farther south, then fishing could easily become the chief way for people to feed themselves, and any dogs that they kept, at this time of year. Camps would be made near a fall spawning location or other dependable fishery. Nets or weirs[173] could then be set across a spawning stream to catch migrating fish in bulk, or people could set nets or angle for fish approaching shallower parts of the lakes (Blondin, 1990:55; Irimoto, 1981a:42,43,91,122; Jarvenpa, 1980:75).

Those Dené involved in the fur trade may have made a point of hunting or trapping muskrat, or beaver, in the productive weeks before freeze-up. Their pelts were not yet in prime condition (Jarvenpa, 1980:71), but at least some people were bringing in pelts to the posts for trade in the early fall (e.g. HBCA, B.91/a/2:3d). Even if the furs could not be traded, beaver and muskrat meat could be eaten. They were just two of the small game species which came to be used more and more for food by Dené in the forests when they could not hunt caribou. Other alternative foods could have included hare, lynx, porcupine,

grouse, ptarmigan and any available waterfowl (Birket-Smith, 1930:18; Heffley. 1981:131; Irimoto, 1981a:103).

Small game, with the exception of migrating waterfowl, do not tend to supply enough meat at any one time to result in a surplus. Any meat, fish or berries that did remain after immediate needs were met would be preserved and saved for later weeks or months (Blondin, 1990:156; Bussidor and Bilgen-Reinart, 1997:33,37; Irimoto, 1981a:122). This had always been the case to some extent; preserved foods were useful to have while waiting for caribou migrations (Irimoto, 1981a:91). Still, preservation of extra food taken in the fall also became more necessary for Dené who planned to spend the next few months trapping rather than actively pursuing the caribou. Spending less time hunting during the winters, they would have less opportunity to build up a surplus of meat for the mid-winter period when it became more difficult to get any food. At those times, it was good to have some food in the stores (Blondin, 1990:156).

Some Dené began returning to the trade posts in the fall before the freeze-up. People who had spent the summer and/or early fall on the barrens often had caribou and sometimes musk-ox meat and hides to trade at Prince of Wales Fort and the inland posts (Gillespie, 1975:365). Those who had remained in the south also came, bringing proceeds of their trapping and hunting efforts since their last visit (HBCA, B.91/a/2:3d). Most times, people would come to the posts, trade or pick up their winter outfit, and soon leave for their winter camps. They sometimes had to wait around the post site for some time, however, if they arrived at a time when the traders were away. While waiting for trade, Dené supported themselves by harvesting fish, game and plants near the post (e.g. HBCA, B.91/a/2:3d).

Those people most adapted to the new fur trade economy and using canoes for travel would have wanted to leave the posts ahead of freeze-up so that they could reach their camps while it was still possible to canoe there (Jarvenpa and Brumbach, 1988:601,602). Once the rivers and lakes became too iced up to canoe, the canoes would have to be cached , or abandoned or destroyed if return to that place was not anticipated.[174] Any further travel

would have to be made on foot. For people who travel almost exclusively along river and lake systems, both by boat in the summer and over ice in the winter, the freeze-up can cause them to stop in their travels temporarily. Walking over land at this time of year is not as difficult as in the slushy spring, however. Dené, already accustomed to walking long distances over land, could have continued to travel until a water body had to be crossed. Even they would have had difficulty passing through denser woods, though (Tyrrell, 1934:515).

During this period, however, most Dené still travelled mostly by foot in all seasons and were not restricted to following water routes (Brumbach and Jarvenpa, 1989:120,121). The timing of their arrival and departure from the trade posts would have been less closely tied to break-up and freeze-up events than it was for those more dependent on water routes. For some people, then, it became normal to travel to the posts only after the early fall caribou hunt was over and all the meat and hides preserved and cached. Most years, this would not be complete until the freeze-up had already begun. From the posts, these people would then leave for their winter camps on foot, as they had come (Bussidor and Bilgen-Reinart, 1997:37). Similarly, whether they were using canoes for travel or not, if anyone had been keeping dog teams, they may have chosen to remain by the posts until after freeze-up. This way they could take the dogs over land to the next camp rather than trying to load them all into canoes for the journey.

Often, people would try to follow the same route taken in the spring in order to reach the caches built earlier in the year (Blondin, 1990:148). From these, winter equipment which had been left behind, including toboggans, harnesses, snowshoes and heavier winter clothing, might be recovered. The freeze-up was a good time to repair these items. It was also a good time for manufacture of new clothing and other goods. More work on hide and pelt preservation could likewise be done (Irimoto, 1981a:122,123; Tyrrell, 1934:513).

For food, people could eat preserved meats and plant materials. Some may have traded for food at the trade posts as well. If needed, i.e., if caribou had not been hunted

intensively, for example, and the stores were low, fresh meat could be procured. Fishing could be difficult during the freeze-up, but small game like hare, fowl and porcupine could be readily hunted or snared around the camps (Irimoto, 1981a:122; 1981b:48). Some limited amount of trapping or hunting of furbearers might have been done around the camps at this time as well (Irimoto, 1981a:122; Tyrrell, 1934:513). The muskrat marshes would have continued to be good places to be at this time of year for anyone particularly interested in taking furs.

As in other seasons, a number of different options existed for Dené in the weeks following freeze-up, depending largely on the degree of their involvement in the fur trade. Those who had remained on the barrens with the caribou through the fall generally spent freeze-up preserving hides and meat just inside of the treeline as before. Most of these people would put off going farther south into the forests until the caribou did, usually after the first heavy snow. When they did travel southwards (generally over land, on foot), they might have visited a post to trade some of the meat and hides (e.g. Bussidor and Bilgen-Reinart, 1997:37). Those people with no need for or interest in trading at that time could, on the other hand, go on directly to where they would spend the first part of the winter. For most of the eastern Dené, this would again be where the caribou were (Hearne, 1971 [1795]:81-83; Irimoto, 1981a:103,122; Jarvenpa and Brumbach, 1984:178; Smith, 1981b:272,276).

A smaller number of people had been keeping to the forests during the summer and fall. If there had been no early migration of barren-ground caribou into the forest where these people had been before freeze-up, the late fall/early winter migration of the herds into the forests would have been their only chance to take advantage of large concentrations of caribou until the spring. So, sometime before, during or soon after freeze-up, some Dené would have been travelling towards the barrens in order to intercept the migrating caribou and get themselves a supply of meat for the winter (Alcock, 1916:447; Irimoto, 1981a:15; 1981b:48; McInnes, 1913:7). This was a change from the more traditional pattern in which

people travelled south with the caribou. Still, the same time-proven methods and tools were likely used to hunt the migrating caribou in much the same sorts of strategic locations (Sharp, 1977:39,40).

In more recent times, some Dené have spent the late fall and early winter seasons in intensive hunting and trapping of several furbearer species, including beaver and lynx, as well as mink, otter, wolverine and marten, for example (Birket-Smith, 1930:24,25; Bussidor and Bilgen-Reinart, 1997:21; Jarvenpa, 1976:50; 1980:17,110-113; Tyrrell, 1934:511), whose pelts are then in good condition (Irimoto, 1981a:91; Jarvenpa, 1976:52; 1980:70). Once the snow was deep enough, toboggans could be used to transport the loads, making transport of furs and other necessary goods easier (Birket-Smith, 1930:30). Additionally, the weather was still mild enough that the furbearers were quite active and it was easy for the people pursuing them to be active as well (Blondin, 1990:154; Jarvenpa, 1980:70).

During the early inland and competitive trade periods, it is possible that a few Dené may similarly have been going directly from the trade posts to their trapping grounds before freeze-up and staying there through the early winter, as they have done more recently. While trapping, people could have fed themselves on preserved foods, by fishing at open water sites or through the ice, snaring hare, and eating the meat of the animals trapped, as well as hunting caribou or moose opportunistically (Jarvenpa, 1976:55). The majority of the people who would turn to trapping at some point during the winter, however, would not do so until after the barren-ground caribou had more or less completed their migration into the forests and had begun to disperse again for the winter (Irimoto, 1981a:103,122; Sharp, 1977:37).

10.3.6 **Winter.**

Dené had always preferred to winter in the forests. Involvement in the fur trade did not change this (e.g. Hearne, 1971 [1795]:6). What it did do was encourage some people to work their way farther south for the trapping season. Furbearers could be found within the transitional forests traditionally occupied by Dené in the winter, and many people did

choose to remain there even when trapping (Irimoto, 1981a:15; Sharp, 1977:37). Still, the most valuable furbearers, like beaver, were more abundant in the full boreal forest. Because of this relative richness of the full boreal forest, some Dené did take the opportunity to expand their territories southwards after smallpox epidemics so reduced the Cree population of the Churchill River region in the early 1780s (Gillespie, 1975:375; Glover, 1962:107; Smith, 1981b:273; 1981c:148). Many Dené were regularly wintering as far south as the Churchill River by the 1790s (Jarvenpa and Brumbach, 1984:152; Gillespie, 1975:382). At least a few probably trapped and traded even farther south, in spite of the fact that barren-ground caribou rarely migrated south of the Churchill River in those years (Hearne, 1971 [1795]:225). By this time, Cree hostility was apparently no longer enough to keep Dené from the full boreal forest.

In the early fur trade, up to and including the period of inland competition, the majority of eastern Dené peoples continued to follow the same seasonal rounds as their predecessors. Even in the winter when they would be in the forests and closest to the trade posts and furbearers anyhow, few people bothered to trap or trade more than occasionally. The barren-ground caribou continued to be central to their lives (Jarvenpa and Brumbach, 1984:178; Smith, 1981b:276; Yerbury, 1986:130). With the greater convenience of the inland trade posts and the increased efforts of the trade companies to win business of the subarctic peoples, greater numbers of Dené gradually became involved in the fur trade. These were the people who could be found wintering more regularly in the southern portions of the northwestern transitional forest and in the full boreal forest.

Most of the people continued to spend the early winter in the transitional forest where most of the barren-ground caribou could be found once they had completed the southward leg of their migration. These people lived primarily off hunting the dispersing herds of caribou, some fishing when necessary, and a variety of small game (Hearne, 1971 [1795]:78,81,85; Irimoto, 1981a:103,122; 1981b:48; Smith, 1981b:276; Yerbury, 1986:130).

Dené had little need of the increasingly available firearms in the earliest part of the winter. At this time of year, as in the spring and the late fall, snares could be placed in hedges or pounds constructed along the caribou migration path and the still migrating caribou herded into them to be killed with lances or arrows. Even as winter progressed and the caribou became more dispersed and less mobile, this method of hunting could be quite effective when a large enough group of caribou could be found to make construction of the traps worthwhile (Franklin, 1910:216,220; Hearne, 1971 [1795]:78,79,85).

The fur trade was not entirely without effect on these people. A few individuals might leave their hunting group for a time during the winter to travel to Prince of Wales Fort or to an inland trade post, depending on which was more convenient. For some, the winter became a favoured time for visiting the trade posts as it did not require travelling by canoe or leaving the caribou for any extended period of time (Alcock, 1916:439). If they wished, people could combine caribou hunting with minor amounts of trapping. Snares and traps for furbearers could be set around the winter hunting camps (Irimoto, 1981a:103,122; 1981b:48).

For the most part, however, trapping furbearers for anything other than household use was unnecessary. Most Dené did not have to trap in order to trade, because caribou meat, hides and other country-products were generally welcome at the posts as well (Gillespie, 1975:366; Pettipas, 1993:20). In fact, they may not even have had to travel to a post to acquire trade goods: people who chose to remain in the transitional forest hunting caribou and other game could trade meat and hides to those others who gave up caribou in favour of more intensive trapping in the full boreal forest. Because caribou were more difficult to find in the southern portions of the northwestern transitional forest and in the full boreal forest, especially when people were concentrating on their trap-lines, these trappers often had a difficult time in getting enough meat during the winters. Meetings with Dené farther north for trade in meat were sometimes desired (Hearne, 1971 [1795]:81-83).[175]

Like trapping, ice fishing was still of only limited importance to those Dené who stayed in the transitional forest to hunt caribou. While some fishing was necessary to feed the dogs if not the people (Irimoto, 1981a:122; 1981b:480), it did not take on the additional importance that it did for people farther south during this time period (Smith, 1982:62; Yerbury, 1986:144). The large game of the transitional forest, barren-ground caribou, were not so devastated by overhunting towards the end of the competitive trade period as moose and woodland caribou were farther south (VanStone, 1974:93). For these same reasons, winter gatherings of larger groups of Dené were still possible in the transitional forest. People continued to gather whenever the caribou were both abundant and concentrated within a wintering place (Smith, 1981b:276).

Prior to the fur trade, Dené normally travelled into the full boreal forest or even into the southern portions of the northwestern transitional forest only in those winters that the caribou migrated so far south that few remained in the northern portions of the transitional forest. This remained true for most of the eastern Dené even into the competitive trade period (Hearne, 1971 [1795]:82; Smith, 1978:69; 1981c:136). Of those who did begin spending more time hunting and trapping furbearers for trade and less hunting caribou, many still chose to stay in some part of the transitional forest and just trap what was locally available (Irimoto, 1981a:15; Sharp, 1977:37).

All the same, there were also at least a few who did go farther south beyond the normal wintering range of the barren-ground caribou,[176] to spend their winters taking furbearers for trade. In many cases, these were men who had not been successful caribou hunters to begin with; others may have been motivated more purely out of ambition for acquiring more trade goods or for some other perceived advantage (Hearne, 1971 [1795]:81,82). Whatever their reasons, during the period of competitive trade a relatively small but still significant number of Dené were trapping in the southern portions of the northwestern transitional forest and in the full boreal forest after the late fall/early winter caribou hunt (Hearne, 1971 [1795]:81; Sharp, 1977:37).[177]

At least until their numbers became depleted towards the end of the competitive trade period, beaver could be taken through the late fall and early winter by Dené hunters breaking into their iced up lodges in the same way that the Cree did (Birket-Smith, 1930:25). In some instances, rather than trying to block off all routes of escape for the beaver, Dené would allow them to escape into their bank dens and remove them from these with little difficulty (Hearne, 1971 [1795]:236,237). Traps were also sometimes set under the ice at the lodge entrance to catch beaver without having to break through the lodge itself. sEven with ice chisels and metal axes, however, such activity became too difficult as winter progressed and the ice thickened (Jarvenpa, 1980:112).

Otter, like beaver, were taken mainly between freeze-up and mid-winter (Jarvenpa, 1980:79). Otter favoured open water at rapids and falls in the winter where they could fish (Hearne, 1971 [1795]:374). Dené trapped and shot otter at the places where they came up onto shore from the water. When otter were found on land, at a crossing place, for example, the people could also catch them by chasing them into deeper snow and clubbing them (Hearne, 1971 [1795]:375). Unlike beaver, otter were fairly common even in traditional Dené wintering territories (Hearne, 1971 [1795]:208,209,374) and so could be also taken by the people farther north from time to time.

Lynx were fat in the early winter and were considered good food (Hearne, 1971 [1795]:355; Jarvenpa, 1980:17). Their furs were also valued by the traders,[178] and Dené did begin to take lynx in the winters for trade (Smith, 1981b:272). Traps and snares were set along game trails followed by lynx, and in the stream valleys which they often frequented for travel (Jarvenpa, 1980:111).

Muskrat have also been taken for both food and fur by Dené in the forests (Heffley, 1981:131; Jarvenpa, 1980:17,110; Smith, 1981b:272). Although mention of Dené trading muskrat furs during the early trade period is infrequent, those who still wished to trap and trade when beaver became scarce may have begun to take more of these animals. Muskrat

would have been taken in the same way as beaver, by breaking into their houses in the early winter.

Because the weather was still relatively mild in the early winter, people could travel farther than they would later in the winter. If desired, traps could be set all over in order to capture a variety of species (Jarvenpa, 1976:58). In addition to those already mentioned, other furbearers may have been taken at this time as well. Marten were traded in considerable numbers by Dené trappers during the winter months, for example (Bussidor and Bilgen-Reinart, 1997:21; Hearne, 1971 [1795]:378). Weasels, ermine, fisher, fox, wolverine, wolf and bear were also trapped over time once the Dené had become more involved in the fur trade (Smith, 1981b:272). Some of these furbearers could have been taken in the early winter.

Other than bear and sometimes marten, however, few of these carnivores were considered good to eat (Jarvenpa, 1980:75). Fox, weasels, wolf and wolverine, in particular, were rarely eaten (Hearne, 1971 [1795]:250; Jarvenpa, 1980:18; Smith, 1982:5). Because the pelts of most of these furbearers were generally less valued than those of the beaver, and the animals more difficult to capture in any quantity, people were less likely to spend as much time trying to trap them if beaver were available (Jarvenpa, 1980:113).

The Dené had to make some changes to their settlement and subsistence patterns when engaged in early winter trapping, whether they were in either the full boreal or the transitional forest. If not following barren-ground caribou, for example, they would not have as much opportunity to make the large kills periodically through the winter that allowed them to live well off of caribou meat for extended periods of time at one site. As a general rule, people who chose to emphasize trapping in this season had to switch to eating a more generalized diet (Gillespie, 1976:8; Jarvenpa, 1980:41; Sharp, 1981:223; Smith, 1982:59,63; Sharp, 1981b:272), camp in smaller groups, and move more often (Jarvenpa, 1980:114; Smith, 1982:62).

Winter trapping did not normally require giving up caribou altogether. People trapping in the transitional forest regularly had the opportunity to encounter and hunt barren-ground caribou. In some years, the herds worked their way even deeper into the forests, so even those Dené who had gone to the full boreal forest to trap could hunt the caribou from time to time (Jarvenpa, 1980: 19,42). Depending on their concentration in the area, caribou may have been hunted opportunistically from the trapping base camps or time may have been taken out from trapping and special trips made to hunt larger numbers of caribou. Use of snares and pounds would have continued to have been most effective when a concentration of caribou were present. Muskets could have proven useful to those possessing them for hunting more solitary caribou - not uncommon during the winter. The use of firearms for hunting caribou in the winters probably grew during the competitive period as more Dené became more closely affiliated with trade posts and had greater access to ammunition (Sharp, 1977:40; Williams, 1969:16).

When barren-ground caribou could not be killed in sufficient numbers to feed the people, Dené trappers turned to other sources of food. In addition to eating the meat of many of the furbearers hunted or trapped, they began to hunt moose and woodland caribou when these were available (Birket-Smith, 1930:23; Jarvenpa, 1976:55; 1980:75; Smith, 1982:59). These animals can be difficult to hunt in the early part of winter, however, and by the end of the competitive period had become quite scarce as well. More commonly taken by Dené trappers in this season were small game like hare, grouse and ptarmigan - often caught in snares set around the camps - and porcupine (Heffley, 1981:131; Jarvenpa, 1980:55; 1980:75; Smith, 1982:63).

Even more important at this time of year were fish. Winter fishing had not been especially important to the Dené involved in the traditional caribou-following lifestyle except as a source of emergency food and for dog food. With less time dedicated to hunting large game, however, and especially as large game and beaver declined in the 1800s, Dené trappers began to take more fish in the winter, both for themselves and the dogs and to trade

to the posts. It was probably at this time, when a few Dené were first becoming more intensively involved in the fur trade south of their traditional range, that winter fishing became so important (Smith, 1982:62,63; Smith, 1981b:281; Yerbury, 1986:144). The use of ice chisels made it possible for them to set nets more easily under the ice in order to take greater amounts of fish at once, which Dené began to do (Hearne, 1971 [1795]:16,17; Smith, 1981b:281). Angling also continued to be practiced as well (Birket-Smith, 1930:30).

With the increasing reliance on fishing for food, Dené made even more of a point to choose early winter camps which were close to reliable fisheries (Irimoto, 1981a:91). Often, Dené would use whatever fishing places fell within the area in which they were trapping. With the ground frozen and overland transport thus easier, this could include many of the inland lakes deep enough to not freeze to the bottom (Blondin, 1990:209; Jarvenpa, 1980:60,82). From these places they could take numerous whitefish, jackfish, trout and burbot (Hearne, 1971 [1795]:16,211,212). The same sorts of sites which were preferred by Cree in this season for fishing would likely also have been selected by Dené.

Dené committed to the fur trade and wintering south of the normal barren-ground caribou range liked to camp near not only good trapping and fishing places but also near trade posts (Brumbach and Jarvenpa, 1989:117). Access to trade posts meant access to trade at whatever point in the winter that the people preferred. It also gave them access to ammunition for the muskets, desired by Dené trappers for hunting lone caribou and moose.[179] Just as important, when all their food resources failed them, they could usually hope to get some food from the trade posts, either by trading for it or just by asking for food when times were hard. Trade posts became a place to leave family members when the trappers went out on extended trips which the others were too sick or weak to make with them, or when hunting was expected to be poor (Franklin, 1910:225; HBCA, B.91/a/2:5d; B.91/a/3:11). If they could not winter near a post, Dené trappers may have continued to trade European trade goods to their caribou-hunting neighbours in exchange for meat and hides (Hearne, 1971 [1795]:82).

Around this time, Dené and Cree may have started to share winter territories. This may have occurred on occasion in the past as well, when the caribou were especially far south, for example (Smith, 1981c:135,136). The regularity with which at least some Dené now wintered farther south and even shared space, around the trade posts, with Cree was new (e.g. HBCA, B.83/a/1). The numbers of eastern Dené so dedicated to trapping that they were willing to give up caribou hunting themselves at this time was small, however. Most tried to situate their winter camps within the region occupied by the barren-ground caribou, closer to the treeline, even if they were also participating to some extent in the fur trade (Smith, 1981b:281).

By mid-winter, setting traps under the ice and fishing through the ice dropped off as the ice thickened. Even if people took the time to try to cut through the ice, fish and furbearers were so inactive at this time of year that neither fishing nor trapping was likely to be worth the effort. Although beaver and muskrat could still theoretically be taken from their houses, breaking through the thick ice and frozen structure of the lodges was also considered to be too much work to be worth it by most Dené (Blondin, 1990:156; Irimoto, 1981a:125; Jarvenpa, 1980:70,79).

Thus, mid to late winter was a time for most of the Dené trappers to rejoin those who had remained marginal to the fur trade and hunt dispersed barren-ground caribou around the lakes of the transitional forest (Irimoto, 1981a:15,125), at which time of year muskets may have been useful for hunting (Sharp, 1977:40). Aside from the adoption of this new technology, most of the people continued to use the same methods of hunting caribou as they had done for generations: snaring caribou and herding them into pounds when encountered in larger groups; stalking more solitary caribou and driving them into deeper snows where they could be stabbed or shot with arrows or, now, with firearms (e.g. Franklin, 1910:216; Hearne, 1971 [1795]:78,79,85; Williams, 1969:16). During the mid-winter, caribou were especially wary; even with firearms, people still may not have been able

to get enough fresh meat at this time of year to feed their families. As before, dried caribou and fish could sometimes be a staple (Blondin, 1990:156).

Some trapping may have continued sporadically through the mid to late winter, mainly around the hunting camps. Recent Dené trappers have concentrated on taking lynx in this season since these animals remain fairly active all through the winter (Jarvenpa, 1980:80). Like most of the carnivores, marten could be similarly active and so could have been taken in this season as well. Whether or not trapping took place even at this level, however, would have depended on how far north the people went in order to find caribou.

Towards the end of the winter, when the daytime temperatures began to warm slightly sometime around March, the forests came back to life with activity. Small game like hare became more active, as did the fish in the lakes and streams (Blondin, 1990:222; HBCA, B.91/a/3:14). The barren-ground caribou began to re-group for their migration northwards in the early spring. For many people, this was a time to continue hunting the caribou (Irimoto, 1981a:125; 1981b:48). Trapping and trade also began again for those so inclined.

11. SITE LOCATIONS IN THE BOREAL FOREST: SOME SITE-SPECIFIC FACTORS.

11.1 Introduction.

Ethnohistoric reconstructions of Cree and Dené lifestyles and of their seasonal rounds of land use during the late precontact and early fur trade periods have been presented in preceding chapters. Knowing what activities a group of people had been carrying out in a given season, where and how they travelled across their territories, and how they interacted with the land and people around them helps to identify what areas or types of areas they may have been using in each season. The resources and conditions which influenced peoples' movements within and between areas at different times of the year have been discussed in chapters 7 through 10.

Within those general areas selected largely for their resource potential, other more 'logistical' factors affected the specific locations which would be chosen for camps and other land use activities. These factors, some of which have been noted in the earlier chapters, will now be discussed in greater detail. Because the camps were the hub of people's activities, are often the most visible in the archaeological record of the boreal forest, and are among the most predictable of archaeological sites, they will be given the most attention in this chapter. It should not be forgotten, however, that people's activities often took them beyond the boundaries of their camps; every way in which they used the land around them, whether archaeologically visible or not, was an important part of their lives.

11.2 Camps.

11.2.1 Base Camps.

In general, the sites most carefully chosen by people are those selected for living spaces. Base camps, in particular, tend to be chosen with an eye for the comfort of the site. These are the general-purpose habitation sites, typically occupied for a more extended

period than any more special-purpose camps established in the surrounding area (Rogers and Black, 1976:23).

Some factors had greater influence on the desirability of a site than others, and the importance of these factors could vary with the seasons. While each group of people may have had somewhat different criteria for their camp sites, depending on their specific needs, goals and tastes, certain factors seem to have been almost universally desired by people in the boreal forest. These are sometimes described in such sources as ethnographic and ethnoarchaeological accounts, oral histories and historic documents, and may be inferred from observations of site distributions in the archaeological record. The factors thus determined to have likely been most important to people in the boreal forest for their camps will be presented below.[180]

For a site to be considered for a camp, it first had to be in a location which was accessible to the people. Camps would not be located in any place which the people could not or would not travel to in that season. If, for example, a people tended to travel by canoe in the open-water seasons as the Cree did, it is unlikely that they would often locate their base camps far inland, distant from any navigable canoe route, at any time between break-up and freeze-up. The first criteria of a camp site, then, would be that the site must be *accessible from a seasonal travel route* (Brumbach and Jarvenpa, 1989:117; 1997:423; Orecklin, 1976:125; Rogers and Black, 1976:25; Tanner, 1979:37,45). It is also reasonable to say that *more readily accessible sites would also have been preferred to those which, though not impossible, were more difficult to reach.*

Based on the descriptions of Cree travel presented throughout the reconstructions of their seasonal rounds, it could be reasonably expected that if a site in the boreal forest required extensive overland travel to reach, it is likely that Cree people were camping there only during the frozen seasons, if at all. Archaeologists studying the boreal forest have sometimes additionally stated that for a site to be accessible from water during the warmer seasons, there would have to have been a place at which canoes could be easily landed and

brought up on the bank. If the approach was too shallow or rocky to land a canoe without damaging it, or if the shoreline appeared to be too steep or difficult to climb, it has been suggested that no spring through fall camps should be expected there (e.g. Hanna, 1974:7). While this prediction is generally valid, it does overlook the fact that Cree were highly experienced canoeists. People who have spent so much time in canoes could have landed their crafts just about anywhere, if it was necessary, with the exception of vertical or very steep, high shorelines (Orecklin, 1976:167).[181] If the water became too shallow or rocky near shore, they could sometimes get out of the canoes at that point and guide them up by hand (Ahenakew and Wolfart, 1992:95). Sites with less favourable canoe landings would certainly have been used less often during the open water seasons than those with more ideal landings; but it is not impossible that even sites with the less favourable landings may have been used at times. For example, there may have been a specific reason to access a site which was not near an easy canoe landing; or there may have been no better landings nearby at all.

Aboriginal canoes were additionally quite small and light. Even when moving camp, they could be used on many water routes too shallow for the larger and heavier canoes used by the Europeans during the fur trade, or for their own canoes when loaded to the maximum with furs to be taken for trade (Ballantyne, 1871 [1879]:71; HBCA, E.3/3:30; Merk, 1968:14*n*; Tyrrell, 1934:13). Aboriginal travel routes thus could possibly have included streams which are probably not so heavily used anymore, particularly by people using larger boats with outboard motors. Early routes can be discovered through an investigation of early travellers' accounts and of maps drawn for fur traders by Aboriginal people which often detail these routes (e.g. Warkentin and Ruggles, 1970:142,143).

In contrast to the Cree, Dené were more accustomed to walking over land in both winter and summer, even after the introduction of the fur trade (Brumbach and Jarvenpa, 1989:27; Downes, 1943:114; Hanks and Winter, 1991:51; Helm, 1988:5; Hearne, 1971 [1795]; Warkentin and Ruggles, 1970:90,91). Once in the full boreal forest, such travel

would become more difficult, and Dené who became more involved in the fur trade subsequently began to adopt more Cree-like modes and routes of travel while in the full boreal forest. But within their usual winter territories, i.e., the transitional forest, Dené camps could certainly have sometimes been located farther inland from navigable water routes than those of the Cree.[182]

Still, even when travelling over land, Dené preferred specific routes of travel which were favourable for walking and would not often have camped where there was poor access from these. Overland routes are discussed in section 11.3.3, "Paths and Trails."

Having reached an area within which most of the various resources which were to be harvested throughout that season could be found, people would then seek out a site for their camp along or near the routes of travel taken. Typically, sites were chosen around which the *resources most necessary for day to day survival could all be found, and collected with little difficulty, relatively nearby.*[183] A requirement for almost all camps within the boreal forest, for instance, was that there be *a source of potable water* nearby (Jarvenpa, 1980:114; Rogers and Black, 1976:23,24; Tanner, 1979:38). In the boreal forest, water is not difficult to locate (Jarvenpa, 1980:114). It can be found in the form of the many lakes, rivers, streams, springs and wetlands, and, in a pinch, snow and ice during the cold seasons. The Cree, in particular, were known to almost always place their camps - especially base camps - near a lake, river or stream (Drage, 1982 [1748]:12; Martijn and Rogers, 1969:146; Mason, 1967:11; Meyer, 1985:77; Rogers and Black, 1976:25). This preference, however, was related not only to the presence of drinkable water, but to the fact that lakes and rivers offered a number of other advantages to the people. These advantages ranged from the service of lakes and rivers as travel routes, to the abundance of fish, game and useful plants which could often be found in or near the water, to the improved view of the surroundings available along shorelines (e.g. Hanks, 1983:352; Meyer, 1985:11; Shay, 1980:252).

The other critical resource to have near a camp was *a source of dry wood for firewood.* Both Cree and Dené people, when in the boreal forest, made certain that they had

access to firewood from their camps.[184] Important at all times of year for cooking, smoking hides and meat, and for light, a fire was essential for warmth in the cooler seasons, and smoky fires could also be invaluable in the summer season for repelling biting insects. A huge amount of firewood could be required at a base camp just for day-to-day needs.[185] For this reason, people tried to camp in places where there was a good supply of dry wood (Hanks, 1983:351; Heffley, 1981:137; Irimoto, 1981a:91; 1981b:49; Jarvenpa, 1980:114; Lister, 1988:78,79; 1996:295; Rogers and Black, 1976:23,24; Tanner, 1979:38) - preferably well within a kilometer's distance (Irimoto, 1981b:49). Concentrations of dead, standing trees, ideal for firewood, could often be found within and around the edges of areas recently burned, for example (Hanks and Winter, 1991:54; Irimoto, 1981a:91; Tanner, 1979:38).

The amount of dry wood around the camp was one of the main factors determining how long a single base camp could be occupied. By the time all the potential firewood had been used within about a quarter mile (400 m) of the camp, it was time to consider moving to a new location (Jarvenpa, 1980:115). This local depletion could occur particularly quickly during the coldest months of the year. This was one reason why camp moves tended to be most frequent during the mid-winter season. However, it was generally a gradual process, often taking several years of seasonal use of a site before a location was completely devoid of dry wood resources nearby (Jarvenpa, 1980:115).

Other resources were perhaps not vital, but highly desirable to have in or at least quite near a camp site in the boreal forest. *Live timber* was important for the construction of lodge frames, drying racks, platform caches, fishing weirs, and a multitude of other structures useful around camp (Lister, 1988:78; 1996:295; Tanner, 1979:38). *Spruce and fir boughs* were used in all seasons for bedding inside the tents and had to be replaced regularly as they dried out (Drage, 1982:12; Rich, 1949:102; Rogers and Rogers, 1959:136; Tanner, 1979:38). A supply of *moss* was important for a variety of domestic uses (Ahenakew and Wolfart, 1992:223; Lister, 1996:295; Smith, 1981a:260; Van Kirk, 1980:20). Both Cree and Dené tried to camp in locations which had sources of these

resources nearby, within a few kilometers and preferably well within one kilometer (Ballantyne, 1971 [1879]:70; Irimoto, 1981b:49; Lister, 1996:295; Tanner, 1979:38).

A dependable source of food was also advantageous to have within a few kilometers of a camp site. It has been said of the Cree, for example, that they always tried to camp near a reliable fishing site. Fishing was the most certain way to get protein food, and this activity often provided people with food when hunting and trapping had been less successful (Hanks, 1983:352; Lister, 1988:78; 1996:16). Thus, the presence of a seasonal fishery nearby was considered an important factor when selecting camp sites, even when fish were not the primary food being sought in that season (Hanks, 1983:352; Lister, 1988:78; 1996:16; Martijn and Rogers, 1969:150; Tanner, 1979:38).[186] Dené, too, appear to have favoured camp sites near fishing sites, at least during the open water seasons (Blondin, 1990:64; Brumbach and Jarvenpa, 1997:423; Irimoto, 1981a:91).

Similarly, close proximity to harvesting areas for other dependable resources including plant foods and small game for which snares could be set around camp was also important.[187] With this, not only were a variety of relatively reliable food resources available nearby in case of unsuccessful hunts, but individuals (including women, children and elders) other than those who hunted big game could in this way contribute to the diet of the group and could support themselves when the hunters were away (Brumbach and Jarvenpa, 1997:419, 423,425,426; Lister, 1996:78).

The most favourable base camp sites were those from which there was access to multiple reliable food resources nearby, as well as access, through a network of travel routes, to a variety of more distant harvesting areas for less immediately necessary resources (Blondin, 1990:167; Brumbach and Jarvenpa, 1989:117; Bussidor and Bilgen-Reinart, 1997:31; Tanner, 1979:45). Such locations included those at intersections of water travel routes: the entrances and exits of rivers from lakes; stream confluences; narrows separating two larger bodies of water; and portages joining either two different water routes or sections of the same route (Brumbach and Jarvenpa, 1989:117). This could also include the

intersection of eskers and other preferred overland routes with water bodies. Such strategic locations were, in fact, often chosen for camps (Bussidor and Bilgen-Reinart, 1997:31,32). This tendency for camping at intersections of travel routes shows up regularly in the archaeological record (e.g. Orecklin, 1976:168; Martijn and Rogers, 1969:146; Rogers and Black, 1976:8,25), although these were certainly not the only camp sites used.

One last 'resource' which is often desirable to have near a base camp is *a vantage*, or *view of the surroundings*, from which game could be spotted, as well as approaching friends and enemies (Martijn and Rogers, 1969:147; Orecklin, 1976:116,167). In the full boreal forest, a good view of surroundings is often available only at prominent points along shorelines due to the dense bush inland which would otherwise obstruct this view (Martijn and Rogers, 1969:147). However, in more open areas, such as recent burns, wetlands, open jackpine forest in more elevated locations, or the open lichen woodlands of the transitional forest, it is possible to see farther through the vegetation from a height, such as the top of a hill, ridge or esker, or some other prominent position. In such cases, even an inland vantage point might be useful to the people (Brumbach and Jarvenpa, 1989:111; Martijn and Rogers, 1969:147).

The importance of a vantage point would vary with the needs of the group at that time. If, for example, a group was wary of enemy attacks, or if they were on the look-out for large game animals, a vantage point could be quite useful (e.g. Blondin, 1990:53; Boulanger, 1971:51; Brumbach and Jarvenpa, 1989:33). Camps established for hunting migrations of caribou, for example, were almost always positioned in a location which offered a view of the surroundings so that the hunters could watch for the herds' approach (Downes, 1943:120; Hearne, 1971 [1795]:42; Nash, 1975:3). Signals made to attract the attention of friends or family were also more visible when made from a height or a prominent position along the shoreline (e.g. Blondin, 1990:42; Hearne, 1971 [1795]:42). If, on the other hand the people had little or no worries of attack by enemies, were not watching

for friends, and were emphasizing fish, small game and plants for food, a view would be of less importance. Still, it might be considered a pleasant feature to have.

The Dené, in particular, were generally wary of attack, especially when they were in regions which brought them closer to the Inuit or the Cree. They often had surveillance sites set up from which they could watch for enemies (Blondin, 1990:52,53; Brumbach and Jarvenpa, 1989:33; Bussidor and Bilgen-Reinart, 1997:18; Hanks and Winter, 1991:49; Jarvenpa, 1982:285; Smith, 1981c:140). However, to be out on a vantage point generally also made it easier for people to be spotted by their enemies. Thus, it was rare that people who were worried about attack would camp in places which left them very visible, such as prominent points or up on hill tops (Blondin, 1990:52; Hearne, 1971 [1795]:149). Likely, they would prefer access to these sites, to be used for their look-outs, but would set up their camps in more concealed locations (e.g. Hanks and Winter, 1991:49).

Related to this last concern, if there was any worry of being raided, people would have preferred to camp in locations which were *safer from attack*. Such sites included those which were more difficult to detect, as noted above, and/or sites which were more easily defended, or more difficult to reach, giving the occupants more time to escape or prepare to defend themselves if the attackers were noticed in time. Dené on the MacKenzie River, for example, were recorded as having camped always up on higher shorelines. This made the camps more difficult to reach from the water, in addition to providing them with a view of their surroundings. Alternatively, their camps would be hidden back in the bush some distance from the water, regardless of the season (Hanks and Winter, 1991:49). In contrast, Cree in the full boreal forest, and even when farther north, i.e., in Dené territories, apparently had fewer concerns and so took fewer precautions (Jarvenpa, 1982:285).

The overall *safety of the site from natural and supernatural hazards* was also important in its selection. For example, locations in which there was a danger of rock fall from cliffs overhead, which were very unstable, which were very close to a location frequented by bears, or which were riddled with sump holes in which people could become

stuck were probably not chosen for camps or other activities if there were safer choices. Similarly, people tried to avoid locations which malaevolent beings were known or rumoured to inhabit (Downes, 1943:38,39; Irimoto, 1981a:90; Norman, 1982:13), just as they often avoided human enemies (Brumbach and Jarvenpa, 1989:33; Jarvenpa, 1982:285; Smith, 1981c:140).

At the location of the camp itself, there were further requirements for comfort. For one, a minimal amount of *suitable space* was needed for the people, their tents or lodges, structures such as drying racks and caches, and for in-camp activities (Orecklin, 1976:104). It had been observed during surveys of archaeological sites in the Churchill Diversion study area, for example, that camp sites tended to be found in locations with at least 20 meters or more of useable space in at least one dimension (Hanna, 1974:7). The amount of space required for a camp would, of course, vary with the size of the group occupying it and the amount of time to be spent there. People tend to build more structures and desire more space on sites that they plan on using for longer periods of time, for example, than on those which are to be used only briefly (e.g. Brumbach and Jarvenpa, 1997:425; Jarvenpa and Brumbach, 1988:607; Orecklin, 1976:104). Cultural differences in perceptions of space and in peoples' relations to their neighbours can also result in variation in how much space would be required for a camp.[188]

Another characteristic of sites most suitable for camps was that they offered *protection from the elements*. During the cold seasons, people always tried to camp in places *sheltered from the winds*, particularly from the strongest, coldest winds (Hanna, 1974:7; Lister, 1988:79; 1996:295; Mason, 1967:11; Orecklin, 1976:125,169; Rogers and Black, 1976:8). West of Hudson Bay, the strongest, coldest winds typically come from the northwestern quarter (Fisheries and Environment Canada, 1978: Map 16; Williams, 1969:171), while the prevailing winds come from the westerly quarter (Dickson, 1972:128).

In general, camps made beside water bodies in the winters would be made in sheltered locations facing out of the prevailing winds.[189] The northerly to westerly winds are generally of the most concern all through the subarctic regions around Hudson Bay, and so shelter to the north and west of the camps was generally most important (e.g. Ballantyne, 1871 [1879]:81; Hanks, 1983:351,352; Martijn and Rogers, 1969:151; Orecklin, 1976:125). Shelter from winds could be achieved by camping on the leeward side of topographical barriers such as ridges, hillsides and valley slopes. In Cree territories through central Québec, for example, the cold winter winds also come predominantly from the northwesterly quarter. There, winter camps tend to be located along the northern or western shores of rivers and lakes in locations where they were sheltered from these winds by the land and trees behind them (Hanks, 1983:351,352; Martijn and Rogers, 1969:151).[190] When facing other directions, these winter camp sites tended to be placed considerably farther back in the bush (Martijn and Rogers, 1969:151).

It seems that no matter what direction a site faced, however, winter camps were almost always located at least somewhat farther back in the bush than most of those used in warmer seasons (Gordon, 1988:14; Hanks, 1983:351,352; Hearne, 1971 [1795]:211; Lister, 1988:79; 1996:295; Martijn and Rogers, 1969:150). In the cold seasons, desire for a view of the surroundings from the camp generally took back seat to a need for warmth (e.g. Lister, 1996:86; Orecklin, 1976:123,124,140). Likely, the denser the barrier of trees between the camp and any open areas, the closer to the edge of the bush winter camps could be comfortably located (Orecklin, 1976:96,123,124). The camps themselves were best placed not only behind, but within relatively dense stands of trees. Still, enough open space had to exist to allow them to set up camps and move freely within them; stands of tall trees at roughly 25% the average forest density have been cited as being suitable for winter camp sites (Hanks, 1983:351).

A desire for shelter from the winds was probably one reason why Dené people chose to move into the forests in the winters and did not like to camp in open muskeg areas

even when south of the treeline, after the ground had frozen (e.g. Glover, 1962:113). The same site characteristics sought by Cree for shelter from winter winds were similarly important to Dené when selecting their camp sites (Irimoto, 1981a:92).

In contrast, during the warmer seasons a breeze could be a blessing. Not only did it help to keep the camp cooler during the summer, but *exposure to winds* helped reduce the hoards of biting insects typical of the boreal forest from roughly late spring to early fall. Black flies and mosquitoes can be bad enough inland that even the hardiest individuals may be tormented by them (e.g. Ray and Stevens, 1971:72,73). For this reason, unless there was a good reason to be camping back in the bush (for example, in order to remain hidden for reasons of defense, or for access to some important inland site for resource gathering or spiritual reasons), people in the subarctic both south and north of the treeline most often set up their warm season base camps in locations with exposure to the breeze. In the forests, these camps were placed closer to the shoreline, as a rule, or at least in more open areas on elevated landforms such as the tops of hills, ridges or eskers (Ballantyne, 1971 [1879]:223; Hanks, 1983:352; Hearne, 1971 [1795]:141; Lister, 1988:79; 1996:295; Martijn and Rogers, 1969:146; Nash, 1975:21; Orecklin, 1976:140,169). Points along shorelines of larger water bodies facing at least partially into the prevailing winds are among the best locations for exposure to winds (e.g. Martijn and Rogers, 1969:146). They might be less desirable during stormy seasons or when the weather was a little cooler, however. These would thus not be expected to be chosen to the exclusion of slightly more sheltered locations.

Seasonal water levels could also affect the location of sites used (Martijn and Rogers, 1969:146). Water levels in north-central Manitoba can vary greatly from season to season. For example, in the Nelson House region, on Footprint Lake (before the diversion), the water levels had been observed to vary as much as 4 m in a year (Orecklin, 1976:176); on Southern Indian Lake, they had regularly fluctuated 2.5 m per year (Geotechnical Section, 1974:242). On the Churchill River and its lakes (before the diversion), the waters

tended to be lowest in the early spring and rose until late spring. Water levels tended to remain at this peak through the summer, until around August (Fisheries and Environment Canada, 1978: Plate 23; Geotechnical Section, 1974:242). In the late spring and summer, it was important that base camps be *placed high enough up the shore* that the spring floods would not wash them out (Lister, 1996:295,296).[191] The same would apply to any camps meant to be occupied year-round, as many of the fur trade posts were (e.g. Tyrrell, 1934:107).[192]

A number of other factors more or less universally affected the comfort and suitability of a site for a camp. Like a need for shelter versus exposure, many of these factors varied in importance with the seasons. Among these further requirements for a more ideal camp site was the presence of *level ground* (Ballantyne, 1971 [1879]:70; Brumbach and Jarvenpa, 1989:111; Hanna, 1974:7; Mason, 1967:11; Meyer, 1985:77; Orecklin, 1976:169) over at least enough space for the tents or lodges to be set up within (Orecklin, 1976:95). The flatness or levelness of the ground surface would generally have been more significant in the summer than during the winter: during the winters, snow could be used to help level out the ground beneath the dwellings and other structures (Orecklin, 1976:96). Overall, however, more level areas were preferred for camps and many other activities.

Existing surveys have indicated differing degrees of levelness of ground on which sites may be found. Ground with less than 2° slope has been suggested as being most ideal for setting up dwellings (Orecklin, 1976:95). However, winter camp sites, at least, have been found on ground sloping as much as 5° (Orecklin, 1976:169). The space surrounding the structures could be slightly more sloping. For example, artifacts were found on ground sloping up to 10° on sites in the Churchill River Diversion Archaeological Project area (Hanna, 1974:4), although any locations of less sloping ground within the site area were probably selected for the specific locations of dwellings.

Slope could also affect the ease of access to a site. While it was possible to climb up a steeper slope to reach a suitable camp site, it was preferable if an easy ascent could be

made. This is one reason why sand beaches were often favoured by travellers using water routes in contrast to the higher shorelines. The latter were used if necessary (e.g. Ballantyne, 1971 [1879]:102), but probably less commonly (Glover, 1962:116). The slope of the shoreline also affected the ease with which canoes could be landed, again affecting the ease of access to the site during open water seasons for those people travelling by canoe.

Most people also preferred surfaces with *little local relief* and *few rocks* as this made setting up and moving about the camp much easier. Rough ground or ground which would have to be cleared of many cobbles or boulders before use was not chosen for campsites if any better locations could be found (Downes, 1943:35; Hanks, 1983:351,352; Kvamme, 1985:217; 1990:271). This criteria, like level ground, would have been more influential during the snow-free months. Once snow depth becomes great enough, minor roughness of the ground surface tends to be covered up and leveled out and people can build their structures and go about their day to day activities on top of tramped-down snow (Orecklin, 1976:96).

Surficial geology directly affected not only the roughness of the ground, but also such characteristics as its firmness, stability and drainage. Under the force of gravity, water both drains downward through the sediments and rock and runs off the surface down any slope. How quickly and how much water can drain away in either of these ways is a factor of slope and elevation of the ground surface as well as of the porosity and permeability of the soil or sediment and the underlying rock.[193]

In general, the wettest locations tend to be those in topographic depressions in deposits of till or clay, or in organic materials underlain by till or clay (Department of Natural Resources, n.d.:12; Geotechnical Section, 1974:48,56,58). Because most tills are not as permeable as sandy soil, and clays are even less so (Dyke and Dredge, 1989:201; Klassen, 1986:4; McInnes, 1913:85,86,116), the rate of absorption and drainage into the ground-water system is slow. The ground becomes waterlogged and muskeg vegetation dominates (Klassen, 1986:4). Any increase in elevation, however, or the presence of even a

moderate slope can significantly improve the drainage of even clay ground (e.g. Flanders et al., 1973:24; Geotechnical Section, 1974:57,64).

Well-drained ground was preferable for all activities, but especially for camps (Ballantyne, 1971 [1879]:210; Brumbach and Jarvenpa, 1989:111; Glover, 1962:116; Hanna, 1974:7; Meyer, 1985:15,77; Orecklin, 1976:168,169). For example, the Dené were especially fond of camping on level sand terraces, such as those characterizing outwash plain features, in contrast to the muskeg and other low, wetter surrounding areas (Brumbach and Jarvenpa, 1989:111). Most people in the subarctic prefer to camp on sandy beaches during the summers rather than on mucky or rocky ground, because the sand is usually dry, firm and comfortable (Glover, 1962:116).

Good drainage was particularly important during the warmer seasons when the ground had thawed. During these seasons, poorly drained ground was difficult to move over, often being spongy or mucky; it was also wet and uncomfortable for walking over, sitting on, or laying on. Mosquitoes tend to be more abundant in such locations, favouring standing water (Steegman, 1983:256). As well, any slope that is particularly waterlogged tends to be unstable (Plummer and McGeary, 1988:183), and sump holes are not uncommon in muskeg (Norman, 1982:125; Steegman, 1983:256). So these areas can be less safe for moving over.

Of course, the ground did freeze in the winter. Thus a boggy low area would be no wetter than a high gravel ridge for walking over, making use of the muskeg and other hydric sites easier (Boulanger, 1971:15; Brown, 1986:213; Brumbach and Jarvenpa, 1989:110; Hanks, 1983:35; Honigmann, 1956:52; 1981:221; Ives, 1982:110; Martijn and Rogers, 1969:126; Orecklin, 1976:34; Stock, 1999; Tanner, 1979:29). All the same, poorly drained sites tend to be more poorly treed, as well (Beke et al., 1973:73,88; Department of Natural Resources, n.d.:12; Flanders et al., 1973:93,95; Geotechnical Section, 1974:58,61,73,74; Glover, 1962:113). Given the importance of timbers, both live and dead, to the people at their camps, their desire for denser tree stands in the winters for shelter from the wind, and

the attraction of more richly-vegetated places for a variety of animals useful to people, well-drained sites would often have been more favourable to people for their winter camps as well (Lister, 1996:295).

So, people - both Cree and Dené - generally avoided camping on poorly-drained ground (Brumbach and Jarvenpa, 1989:110; Glover, 1962:113; Ives, 1982:110; Steegman, 1983:256). In a muskeg-dominated region such as the northern forests of Manitoba, this significantly cuts down on the number of locations suitable for camps.[194] The greater prevalence of coarser (fluvial) deposits along river and lake shorelines, the slope which is characteristic of the backshore for some variable distance inland, and the proximity of the open water body into which both surface and ground water may drain contribute to the tendency for the shorelines of lakes and streams to be better drained, overall, than much of the surrounding land in the subarctic (see Appendix 1 for details on characteristics of different types of shorelines). The greater prevalence of better drained ground in a band of variable width along the shorelines was yet another reason why people in the boreal forest tended to camp near water bodies more often than far inland (e.g. Glover, 1962:58; Lister, 1988:79; 1996:295).

Aside from the sloping and elevated shorelines, other well-drained locations often selected for camping and preferred for most other activities included areas of extensive bedrock outcrop (Department of Natural Resources, n.d.:12; Meyer, 1985:15; Orecklin, 1976:168) and any location elevated above its surroundings, particularly if the sediment was coarse (sandy silt, sand or gravel). This included the intermediate and higher terraces of stream valleys, old beach ridges, and the tops and slopes (including the bases of the slopes, or the 'toes') of hills, eskers and other ridges (Brumbach and Jarvenpa, 1989:111; Department of Natural Resources, n.d.:12; Downes, 1943:67.68; Ives, 1982:97; Petch, 1997b:14; Stock, 1999). Even flat areas of clay or till such as outwash plain and ground moraine features could be reasonably well-drained if elevated above surrounding land (Department of Natural Resources, n.d.:12) (see Appendix 6). The choice of these

situations that would have been most preferable for a camp would have varied according to the many other factors affecting site choice by the people at different times of the year.

Finally, base camps were often chosen by people according to some *aesthetic* criteria. Sites which not only met the above criteria for a living space, but from which there was also a beautiful or impressive view or whose settings were otherwise pleasing to the senses, were especially favoured campsites (Brumbach and Jarvenpa, 1989:111; Meyer, 1985:77). Alternatively, a site which possessed unappealing characteristics but which was otherwise a suitable camp site might still be passed over if there was any other option nearby.

What is aesthetically appealing to people can be hard to define. Not only are the qualities difficult to isolate, but these tastes can vary for people of different cultures, as well as for different individuals. It can thus be difficult to work aesthetic criteria into a predictive model of archaeological site distributions. Like variation in individuals' ability or need to tolerate less than optimal camping conditions, this range in personal taste and other preferences further increases the diversity of site types which have been selected for camps within the boreal forest.

In summary, the assorted conditions which are vital or desirable in a boreal forest camp site, particularly in a base camp, are the following:

1) access to a seasonal travel route (vital)
    * more easily accessible sites are additionally preferred over those not impossible but more difficult to reach
2) access to resources necessary for day to day living:
    drinking water (vital)
    firewood (vital)
    timbers, spruce boughs, moss
    a reliable source of food (typically fish, edible plants or small game)
3) access to a view of the surroundings
4) safe from enemy attack
5) safe from natural and supernatural hazards
6) minimal suitable space for the people and their activities (vital)
7) seasonal protection from the elements (seasonally variable; can be vital):
    shelter from winter winds
    exposure to breeze in the summers, to combat heat and bugs

suitable height above spring flood levels
8) reasonably level ground (less than 10°), at least for the tent and activity places
9) little local relief and few large stones (particularly in spring through fall)
10) good drainage (particularly in spring through fall)
11) aesthetics

The many conditions which together made for an ideal camp location would not necessarily be found all together in all the areas used by people in the boreal forest. Once the most important criteria had been met (accessibility, adequate space, access to critical resources, adequate shelter from the elements), how well the others were met could vary somewhat.[195]

Still, ideal or even good sites for camping would be somewhat limited in the boreal forest. Once a very good site had been found within an area that was suitable for a seasonal base camp, it was likely to be revisited. Thus, so long as the local resource base could continue to support repeated occupations, base camp sites were likely to be re-used (Martijn and Rogers, 1969:150; Orecklin, 1976:104; Rogers and Black, 1976:27). From time to time, the site and its immediate surroundings would have to be abandoned for several years in order for the needed plants and animals to re-populate the vicinity and for more dry wood to accumulate (Jarvenpa, 1980:115). Often, these camps would be used again following this fallow period (Tanner, 1979:73).

In general, the length of time a single site could be occupied, how often it could be re-used before it had to be left to recover, and how many years had to pass before it could be used again depended on the amount of needed resources present in the local area around the camp, and how long it took these resources to be renewed if they were renewable (Hamilton and Larcombe, 1994:37; Tanner, 1979:38). Base camps used during the winters had to be abandoned far sooner than those used in other seasons, as a rule. People were less willing to travel far from the camp in order to gather day-to-day resources like firewood, spruce boughs and small game during winter than they were during the warmer seasons, and more firewood was required in general. So, base camps had to be moved more often in the winter, and no specific site within the area was likely to be used for a winter

base camp again for many years. The general area in which these camps were located, however, could be re-used from year to year until there were no more suitable sites remaining (Martijn and Rogers, 1969:150; Rogers and Rogers, 1959:134; Rogers and Taylor, 1981:232; Tanner, 1979:73,74).

11.2.2 **Satellite Camps.**

Base camps were located in places around which people could find most or all of the resources required for day-to-day use nearby. Certain foods and materials were desired, however, which required trips farther afield to find. This sometimes included large game. Large mammals tend to be more mobile over a region than small game, fish, or plants; as a result, while highly desirable to the people, they were also more elusive. Hunting trips for large game often required that the hunting parties travel fairly far from the base camp (Brumbach and Jarvenpa, 1997:419,420). Certain other resources were similarly important to the people but did not require daily harvesting, such as birch bark for constructing or repairing canoes and containers, good-quality lithics for stone tools, and certain medicinal plants. It was not vital to locate the base camps near such resources, but when they were needed, special trips would have to be made into the areas where they could be found.

When the more regularly required day-to-day resources were depleted within a few kilometers (or even a few hundred meters, in the case of firewood), it made more sense to move the base camp than to make repeated extended trips (Jarvenpa, 1980:115). Still, there were some conditions under which it was not favourable for people to move. For example, fur traders often sent their employees or their families out from the posts to more distant fisheries or hare snaring areas when the local food supply was becoming depleted (HBCA, B.91/a/3:10; Van Kirk, 1980:59) to support themselves away from the post and/or to bring back provisions to the post. This made more sense to them than moving the trade post.

Satellite camps are the special-purpose camps established for harvesting desirable resources which are too far away from the base camp to allow individuals to reach the resource area, get what they had come for, and return within a day (Brumbach and Jarvenpa,

1997:419,420; Jochim, 1976:63; Martijn and Rogers, 1969:151; Rogers and Black, 1976:23,24). They were therefor normally several kilometers (often at least 10 miles, or 16 km) away from the base camp (Rogers, 1963b:47) in or very near an area where the desired resources could be found (Wood, 1978:261). These camps were often smaller than base camps used by the same group, usually occupied only by a portion of the group, and were used from one night to as much as several weeks, but rarely for more than a few nights (Martijn and Rogers, 1969:151; Rogers and Black, 1976:23,24). The types of resources which might have been sought out in different seasons, sometimes requiring the use of satellite camps, may be determined from investigation of the reconstructions of Cree and Dené seasonal rounds presented earlier.

As noted earlier, most special-purpose sites (including satellite camps), being temporary, could be chosen with less concern for all the comforts and conveniences desired in a long-term base camp. For satellite camps, proximity to the targeted resource was the most important factor. A comfortable and convenient site was still preferred, but was chosen only if one could be found within a reasonable distance, probably within a few kilometers,[196] of the location at which the hunt or harvest was expected to take place (Kvamme, 1985:228; Rogers and Black, 1976:23-25; Wood, 1978:261).

At satellite camps and other special-purpose sites, it was thus less important that criteria for comfort such as pleasant surroundings, good ground drainage, little local relief, a rock-free surface, and level ground be met as well as at base camps. Access to day-to-day resources like drinking water, firewood, spruce boughs, moss and fish was still quite necessary (Heffley, 1981:137; Jarvenpa, 1980:114; Lister, 1988:78,79; 1996:295; Rogers and Black, 1976:24; Tanner, 1979:38). Yet, while necessary, these resources could be farther from the camp location than would be considered convenient enough for anything longer-term (Blondin, 1997:203).

For example, while Cree base camps were always next to a water body, and satellite camps usually were, the latter occasionally had to be established well inland (Rogers,

1963b:49; Rogers and Black, 1976:8). Satellite camps for inland resources were sometimes located as much as a kilometer or more from any significant water body (Rogers, 1963b:49). In such situations, access to the water, and thus to fishing sites, to the major routes of travel, and so on, was considerably less convenient (Rogers and Black, 1976:25).[197]

In the same way, people could take their chances at short-term camps which were not near any reliable food source, unless, of course, harvesting these resources was the primary reason for establishing a satellite camp in the area to begin with. People could bring along preserved foods, if there was any stored up, or they could go farther out from the satellite camp than they would otherwise like to in order to find the fish, hare and plants which were the most dependable food sources in the forest.[198]

People may have been willing to travel somewhat farther out from a satellite camp for needed foods and materials than they would have preferred to do over a longer stretch of time. On the other hand, smaller amounts of important resources like firewood, spruce boughs, and fish were needed around a camp which was to be occupied for only a short period of time by a smaller group, as satellite camps often were. As a result, sites too poor in these resources to be suitable for long-term base camps could still be quite adequate for a satellite camp or other short-term camp.

There were certain conditions which were more than simply issues of comfort or convenience. Those characteristics which determined whether or not a site would be inhabitable at all had to be met for all campsites, not just base camps (Rogers and Black, 1976:24). For example, all sites used by people in the boreal forest had to be accessible from their routes of travel. If a site could not be reached, it could not be used (Kvamme, 1985: 230,231). If it was not impossible, but still quite difficult to reach, somebody could have used the site, but this was likely rare unless the need to access the area was very great.

Also, people could only stay where there was enough available space for them to set up camp. Satellite camps, as a rule, tended to be smaller than base camps, however, with

fewer structures (Brumbach and Jarvenpa, 1997:425; Jarvenpa and Brumbach, 1988:607; Orecklin, 1976:104). Less space would have been needed.

Protection from the elements could be just as important for a satellite camp as for a long-term camp when those elements posed a threat not only to people's comfort but also their safety. Bitterly cold winter winds could be just as dangerous for people to be out in at a short-term camp as they were at a long-term camp, for instance, and at least adequate protection could be considered vital at any winter camp (Rogers and Black, 1976:24). A lack of exposure to the breeze during the summers may have been less critical, but it could certainly be miserable.

Reasonably level ground (at most 10° of slope) also continued to be an important factor when people chose a satellite camp. While the slope could likely have been slightly greater than what was preferred for the base camps, the ground still had to be relatively level, at least where the tents or lodges were to be set up, or the sleepers and their belongings might roll downhill.

Although base camps would have been made almost exclusively on well-drained ground, people could 'make do' with wetter locations for shorter periods. For example, while travelling through the Hudson Bay Lowlands in the spring during and after the thaw, people were hard pressed to find any dry land at all. Dené elders recall having simply piled up the spruce and willow boughs extra thick on the ground surface until all the water was covered. Over this they could set up their tents and be elevated above the wet ground (Bussidor and Bilgen-Reinart, 1998:23). The same measures could be taken to make short-term satellite camps more livable.

Some sort of vantage was often an advantage. For one type of satellite camp, i.e., special-purpose hunting camps, access to a vantage point could be expected to be among the most important criteria. A view could be helpful for hunting any game large enough to be spotted from a distance (e.g. Boulanger, 1971:51). It could, however, be vital for the success of a cooperative caribou hunt. This success depended on people being able to spot

the herds approaching so that they could determine where the animals were likely to pass and when to start the ambush. For this reason, people regularly camped up on heights when hunting caribou (Hearne, 1971 [1795]:79).

Satellite camps, generally occupied for only short periods, could be located in a wider range of sites than base camps would be. Re-use of these sites was probably less important as well (Martijn and Rogers, 1969:151). However, if a particular resource area was frequently used by people and if there were any favoured campsites in the vicinity, these were likely to have been re-used, much as base camps were. Modern trappers, for example, often establish campsites at various points along their traplines. These camps are generally used for only a few days at a time, but are used repeatedly through the trapping season and from year-to-year as different portions of the traplines are re-visited (Jarvenpa, 1980:114). Likewise, planned kill sites are often in locations which could be used for repeated hunts, in any year that the targeted game was in that area. Thus, any well-placed hunting camps associated with these sites are also likely to have been re-used (e.g. Gordon, 1981:17).

Special-purpose hunting campsites could be chosen with some care. The primary criterion for selection of a hunting site was that it be in or near an area containing habitat which the targeted game species frequented. But within any such area, the hunters could choose where to set up camp according to their various needs and wants.

Kill camps are those hunting camps established after the fact - for use while butchering game too large to carry back to camp, whether that had been a seasonal base camp or another satellite camp, such as a special purpose hunting camp. They were used anytime it was perceived to be easier to temporarily move the camp to the kill rather than to haul back the unbutchered carcass(es) to the existing camp (Martijn and Rogers, 1969:117,151; Rogers, 1963b:40; Rogers and Rogers, 1959:136; Williams, 1969:171). Kill camps are, then, satellite camps as well, although they are established after the game has been hunted and killed, rather than before.

If the purpose of setting up a separate kill camp was to avoid carrying the carcasses all the way back to the existing hunting camp, then it is unlikely that many people would have chosen to set up anywhere too far away from the site of the kill.[199] Between the random nature of the location of many kills and the relatively short distance from those locations that the kill camps might be expected to be, the choice of where to camp would be more limited than for the hunting camp. If this reasoning is correct, then it would be likely that kill camps were more often made in less comfortable locations than other, more thoroughly planned-out camps would be. For these reasons, it is unlikely that kill camps were re-used (e.g. Martijn and Rogers, 1969:151). The exception to this would be those camps associated with planned kill sites such as the hunts of caribou at water crossings or pounds. However, because the locations of such kills were planned, the camps to be used were generally set up prior to the hunt, and were thus special purpose hunting camps, or even base camps if the location was suitable, not kill camps as defined here.

11.2.3 **Gathering Sites.**

Sites at which a number of groups belonging to one or more regional bands came together for a time are called gathering places, or sometimes 'rendezvous sites' or 'aggregation sites'. Typically, these were seasonal base camps, shared by people from the surrounding region or regions, at or near a seasonally productive source of food (Conkey, 1980:611,612; Meyer and Thistle, 1995:409; Tanner, 1979:1,49). Minor gatherings could also take place for shorter periods of time, however, for special purposes - economic, social, or ceremonial (Conkey, 1980:612,620). Examples of special purpose gatherings include those associated with Cree Goose Dance ceremonies, or with cooperative hunts and other feasts. During the fur trade periods, some groups might also gather together for a short time near the trade posts although their seasonal base camps were located elsewhere.

The conditions required for a good gathering place varied according to the size and composition of the gatherings, the planned duration of the gathering, the season, and any special purpose for the gatherings. In most instances, the gatherings were large and

extended, and a great diversity of economic, social and ceremonial activities were associated with them. Essentially, longer-term gathering places were large, multi-group base camps. As such, the same criteria which defined a good base campsite were also important for a long-term gathering place (Meyer and Hutton, 1998:96). A few other conditions were specifically required for these gatherings.

As for any camp, sufficient space was a necessity. The sheer amount of suitable space required for a large gathering, however, was significantly greater than for base camps used when the population was more dispersed (Meyer and Thistle, 1995:409). As many as a few hundred people could sometimes come together at a gathering place (e.g. Hearne, 1971 [1795]:279,280; Leacock, 86:151; Martijn and Rogers, 1969:153; Meyer and Hutton, 1998:94; Smith, 1981b:276). Similarly, the amount of day-to-day resources required would be that much greater for a larger group. Not only did a gathering place have to be in an area of seasonally abundant foods; it would have to be in an area from which there was access to an abundance of firewood, spruce boughs, moss, plant foods, timbers and other local resources.

As noted, a lot of food was required to support such large groups. Among the types of locations which could meet this need were those within a few kilometers of seasonally productive fisheries, like the spring spawning areas (Martijn and Rogers, 1976:152,153; Petch, 1997b:74). In regions through which waterfowl passed during their migrations, or where they would nest in the summer, the concentrations of waterfowl could sometimes support larger groups, especially if other foods were available as well (Meyer, 1975:446; Meyer and Thistle, 1995:428). Migrating caribou could also support large groups of people. Gathering sites were sometimes located on lakes or rivers by known caribou crossing places. For example, Dené gatherings north and sometimes south of the treeline often coincided with the barren-ground caribou migrations. Their camps at these times were normally in a location which overlooked a strategic place for ambushing the caribou, with

access as well to a seasonal fishery (Gordon, 1981:2; Heffley, 1981:138; Legat, 1995:9; Petch, 1997b:74; Smith, 1981b:276).

Finally, because groups of people from a number of different regions or areas within a region were to come together at gathering places, it was best to select sites which were not only accessible from a route of travel, but which were accessible to all the people who would gather there. Gathering places were generally found in locations which were central to the territories used by the various groups who would attend (Meyer and Thistle, 1995:409). Locations which were at or near the intersection of travel routes from these different territories were often favoured (Meyer and Hutton, 1998:96).

Special-purpose gatherings, such as those associated with communal hunts, particular ceremonies, or sometimes with canoe construction, for example, would have required much the same sorts of conditions as the longer-term annual gatherings. Space and accessibility for all the peoples involved were still required. As noted, the amount of local resources needed may have been less, considering that many special-purpose gatherings would have been shorter-term; but the area around the gathering place would still have to be capable of supporting the assembled people for whatever amount of time that they were there. Regarding the need for food enough to feed the gathering, people could have brought along food stores to sustain themselves, in these cases (e.g. Meyer and Thistle, 1995:422). This was not a long-term option, however. The food stores would run out if people spent too long at a gathering place with little fresh foods available. Depending on the activities which were emphasized by the people at a gathering, certain other conditions might have to be met for a special-purpose gathering site. These would be much the same as the criteria for camps established for smaller groups for the same types of activities.

Because of the special set of conditions which had to be met for an effective long-term and even the shorter-term gathering places, re-use of gathering sites was probably common (Martijn and Rogers, 1969:152; Meyer and Russell, 1995:409). This would, however, be subject to the same need for recovery after the local resource base had become

depleted. How often they were re-used could vary (Conkey, 1980:612), depending at least in part on the rates of depletion and replacement of the local resource base.

11.2.4 **Travel Camps.**

The final major category of camps are the travel camps: those used while travelling from one base or satellite camp to another. These sites were generally occupied only for short periods of time, often only overnight, unless the travellers were unavoidably detained by bad weather, break-up or freeze-up, or some mishap (Martijn and Rogers, 1969:150). At times, people would have to stop for a number of days in order to replenish food supplies (e.g. Hearne, 1971 [1795]:17), or because a large mammal had been killed and required butchering. Travel would resume as soon as it was practical, however.

One defining criteria of a travel camp, logically, would be that it be located along the route being travelled. The seasonal modes and routes of travel used by Cree and Dené peoples during the precontact and early fur trade periods have already been detailed in the descriptions of their seasonal rounds. Cree, for example, while they sometimes made short inland trips, tended to limit most of their extended travel to water routes in both the warm and cold seasons. Their travel camps, which are required only when the journey would take more than one day, were thus most often set up alongside a water body which was part of a travel route (Martijn and Rogers, 1969:150; Orecklin, 1976:115). For convenience, these camps were probably set up either along the shoreline or only a short distance inland, depending on the season and the local conditions. Inland travel camps used by the Cree would be expected to occur primarily along the long, overland portages sometimes used to travel from one water system to another.

For the safest canoe travel, particularly on the rougher lakes, warm season travel routes often followed closely along more sheltered shorelines (Riddle, 1994d:24; 1996:4). Especially favoured were those which offered decent camping along much of their length, in case the travellers were forced to put up due to poor weather (Downes, 1943:74; Tyrrell, 1934:13). Sheltered routes would likely have been preferred during the winters as well for

warmth. The water routes used during the warmer seasons were not necessarily the same as those used in the winters, however, as the destinations were generally different at different times of year (e.g. Orecklin, 1976:117,118). Cree travel camps set up along water routes were probably not restricted solely to being beside those routes with sheltered shorelines, since certain travel routes or portions of routes might have had to be used which offered no such shelter. However, they may be reasonably expected to be more common there.

As noted earlier, during seasons of open water, canoe travellers often came to difficult stretches of water which the canoes had to be portaged around or tracked up or down. Cree travel camps (and later in the fur trade, those of some Dené) were often made at either end of these portages (Martijn and Rogers, 1969:146,150; Tanner, 1979:38,40; Wood, 1983:51) [200]; the people and packs had to be unloaded from the canoes at these locations anyhow (Tanner, 1979:38). Because portages are basically unchanging in location, these camps were frequently re-used (Martijn and Rogers, 1969:150; Tanner, 1979:74).[201] Travel camps could also be expected in suitable locations along overland trails which could not be walked in a day, including the long portages sometimes used to travel from one water route to another by Cree during the winters (Orecklin, 1976:117).

The Dené more commonly travelled over land from water body to water body rather than along them, even for journeys of more than a day. Dené travel camps would be expected along the overland routes followed, these often being along an esker or some other well-drained feature. Each day's camp, however, was generally determined by where water could be found (Franklin, 1971 [1828]:3), so even Dené travel camps would more commonly than not be found along the shoreline of some sort of water body. These water bodies may not have been connected to any more extensive water route, however. Later in the fur trade, when some of the Dené began to spend more time in the boreal forest, their orientation around water routes increased somewhat (Brumbach and Jarvenpa, 1989:120,121). Dené camps, including their travel camps, would in turn have been more closely associated with these routes.

Other criteria for travel camps included the same minimal criteria for any camp. The site had to be accessible. The space required varied according to the size of the group travelling together. While the available space had to be great enough for the people to set up at least a minimal camp within, they could get by with little more space than this; space for few structures other than tents and hearths would normally be required. Additionally, there had to be enough level ground to sleep on, preferably at least some shelter from the elements, plus the availability of drinkable water and firewood within reasonable walking distance. A nearby source of food was also always appreciated. For example, travel camps were frequently made beside a location where the fishing was likely to be productive (Hearne, 1971 [1795]:17,212; Tyrrell, 1934:13).

Because travel camps were meant to be short-term, the sites could be selected with less regard for all the comforts desired for a base camp or longer-term satellite camp (Martijn and Rogers, 1969:150). Travellers often were forced to camp in far from ideal situations when no good campsites were to be found along the travel route within that day's journeying, or when poor weather or other unavoidable circumstances such as an accident or illness forced them to stop where they were (Ballantyne, 1971 [1879]:102; Downes, 1943:35,71; Steegman, 1983:256).[202] These were, perhaps, the only times that truly bad camping places would be used at all (Downes, 1943:35). All the same, comfortable sites would still be preferred, as usual.

Along known routes, the travellers could plan out their destinations, i.e., suitable locations for camping which could be reached before the end of the travel day. Old camps, whether they had been base camps or some type of satellite camp, or only previously used overnight travel camps, were regularly selected (Brumbach and Jarvenpa, 1989:73; Martijn and Rogers, 1969:150). Along less frequently travelled routes, re-use of travel camps would, of course, be less common.

11.3 Special-Purpose Sites.

11.3.1 Rest Stops.

Rest stops are the brief stops made throughout a day of travel. They were used as an opportunity to rest, to eat or drink a little, to warm up in the winter or cool down in the summer, and to make repairs to equipment damaged during the journey. Camp was not struck, but time might be taken to make a small fire. A hearth, possibly a few faunal remains, and a limited number of items accidentally dropped or broken and left behind may be all that remains to indicate that people once stopped there. Like travel camps, rest stops would of course have to be located along the route taken.

Because a rest stop would normally be used only for a brief period, not even overnight, many of the factors important for a camp, such as proximity to vital resources, abundant level ground, a rock-free surface, and so forth, were far less pressing criteria for selection of the site (e.g. Orecklin, 1976:169). Because people could afford to be less 'fussy' regarding where they would stop for a break than where they would stop for the night, a wider selection of sites were available for their use. Basically, when travelling by canoe in the summer, people could stop at any place convenient for landing the canoes. Alluvial (sand, gravel or sandy silt) beaches were likely preferred when these could be found when it was time to stop. At other times, whatever the best site was that was available would be used. Orecklin has noted, for example, that low bedrock spits and points were the preferred rest stops for Cree canoeing along the boggier portions of the shorelines of Lake Wapisu (Orecklin, 1976:115,116). During overland travel, a stop could be made just about anywhere when it was time to rest or eat (Blondin, 1990:189).[203]

The more comfortable and safe locations would normally have been preferred when they were available. For example, aesthetically pleasing locations were likely favourite places to stop, and seasonal shelter from the elements could also be quite influential. Exposed points along the water route were often favoured for summer travel stops when canoeing (Orecklin, 1976:91,92) while spots well sheltered from the winds would have been

preferred during summer storms or winter travel. A comfortable and pleasant rest stop would often become well-known and its use would be planned into the day's travel any time that route was taken (Brumbach and Jarvenpa, 1989:73).

11.3.2 **Portages.**

As discussed, portages are the land-based detours taken from one point along a water route to another. They were used in many cases to bypass a difficult stretch of water when canoeing. Examples of difficult waters include un-navigable rapids[204] or other very strong sections of current, all falls, and places too shallow or rocky to pass through without scraping bottom (McInnes, 1913:31; Morse, 1979:7; Orecklin, 1976:32; Rogers and Black, 1976:8; Steegman, 1983:256; Tanner, 1979:38). Portages were also used to avoid open ice when travelling over frozen rivers or streams during the winters (Tanner, 1979:40; Wood, 1983:42) or to cross between two adjacent lakes or water routes separated by land at any time of year (Ray and Stevens, 1971:127). The trails preferred for the portage would likely be the shortest passable detour or link which was reasonably convenient at each end for getting up and down the banks and, when canoeing, for loading and unloading the canoes.

Because the conditions which made portages necessary were generally present from year to year (although they could vary seasonally), well-placed portages tended to be re-used regularly for as long as that particular route of travel was taken and as long as the environmental conditions forcing the detour persisted. Important portages still in use today, for example, are often the same as those referred to in historic documents, including the maps made by early explorers; evidence of precontact use is also often present (e.g. Downes, 1943:32; Duckworth, 1990:xiv; Martijn and Rogers, 1969:146; Tyrrell, 1917:375,376; Tyrrell, 1934:338; Wood, 1983:42,45,63). The portages, used for many generations, tend to be well-worn (Riddle, 1972:16), although they may not appear to be anything more than a simple path, for all their use (Downes, 1943:32).

11.3.3 **Paths and Trails.**

Paths or trails, which include portages, are any routes taken over land from one location to another. The distance covered can vary from hundreds of kilometres to a few metres; i.e., they could be used for extensive overland travel from one camp to another, or for shorter excursions from the camp into the bush to access a nearby resource harvesting area or other special-purpose location (e.g. Ballantyne, 1971 [1879]:81). Some trails were well-established and often re-used (e.g. Andrews and Zoe, 1997:162; Martijn and Rogers, 1969:135; Rogers and Rogers, 1959:133) while others were used only once, out of necessity, when pursuing game into the bush and then returning to a more open area, for example (e.g. Martijn and Rogers, 1969:135; Rogers, 1973:20).

Certain characteristics made the routes chosen for portages and other overland travel more desirable, causing them to be used rather than less favourable surrounding land. Among these, it could be expected, would be the characteristic that the land be a favourable surface for walking on, i.e., a firm, well drained, fairly level or at least not terribly steep or rough surface. For example, systems of long, north-south trending eskers and similar well drained, linear ridges were commonly used by Dené in their travel between the barrens and the transitional forest (Downes, 1943:83; Nash, 1975:25; Irimoto, 1981a:90; Petch, 1997a; 1997b:66,67). High, well-drained features such as eskers and other ridges were preferred to the lower land for travel during the warmer seasons in particular. This was not only because they were generally easier to move over, but also because they offered better exposure to the breeze. Inside the boreal forest, these features also tended to be more open than the lower land, again making passage easier.

In general, when travelling over land within the northern forests, both Cree and Dené probably chose routes through open forest areas with less dense undergrowth, over better-drained ground. This made travel less difficult and camping more comfortable (e.g. Brumbach and Jarvenpa, 1989:111; Orecklin, 1976:168; Stock, 1999). Dense bush was not favourable for moving through as trails would have to be cut (e.g. Rogers, 1973:20). One

reason why Dené were more used to walking distances over land than were the Cree was that farther north, in the transitional forest and the barrens, the tree cover, where it existed, tended to be quite open and therefor passable (e.g. Tanner, 1979:38).[205] Of course, when Dené began to moved farther into the boreal forest, they too became more constrained by the bush to more open paths and to use of the water ways. This was especially true when people began to make more extensive use of dog teams for travel; a single person or small group of people can make their way over rougher terrain and through denser bush, if necessary, than a team of dogs pulling toboggans (Sharp, 1977:38).

On the other hand, most people preferred not to have to travel over extensive tracts of muskeg, even in the winter when it was frozen. There was little dry firewood in such settings and little shelter from the winds; this made the muskeg a poor place for comfortable travel or for camping. Thus it was undesirable to have to make extensive journeys through it (Glover, 1962:113).

Overland routes are also, of course, dictated at least in part by the location of the beginning place and of the destination, as well as any intermediate locations which the user might wish to encounter along the way. Aside from resource locations which people might want to visit while travelling from one place to another, these intermediate places to be encountered could include certain landmarks or logistically-important locations for the travellers. For example, when Dené travelled over land in the spring through fall seasons, they preferred to cross any water encountered at relatively short, easy crossings. This included shallow sections of streams which could be forded (e.g. Bussidor and Bilgen-Reinart, 1997:23; Hearne, 1971 [1795]:37,201), narrow sections which could be bridged (e.g. Bussidor and Bilgen-Reinart, 1997:19), or calm waters which could be safely crossed by canoe.

11.3.4 **Resource-Harvesting Sites.**

Many sites were visited specifically for harvesting particular resources. This could include fishing spots, trapping sites, hunting stations, berry patches, stands of birch, and

other locations visited for the collection of plants for food, medicine and other uses, as well as quarries for lithic materials or good sources of clay for pottery. Like any special-purpose site, it was the presence of the desired resources and the accessibility of the sites from the travel route or camp being used by the people, preferably within a few kilometres from the camp, which determined the selection and use of those sites.

While any base or satellite camps established nearby for the purpose of visiting those sites were best chosen with an eye for convenience and comfort, the specific sites visited for collection of the resources were less influenced by these additional factors. For example, wet ground was never comfortable or very easy to move over, but muskeg areas, marsh and other wetlands were nonetheless useful for the resources they offered to the people. Camps may not have been set up on muskeg very often, and even travel over it was limited (Brumbach and Jarvenpa, 1989:110; Ives, 1982:110), but this did not stop people from visiting such areas for harvesting plants and other resources (Ives, 1982:110). Even then, however, people appear to have favoured the drier ground for the locations of their operations. Waterfowl hunting stations, for example, were typically set up on whatever dry ground could be found in the marsh areas (Orecklin, 1976:168,169).

So long as the potential harvesting sites were accessible and relatively safe, they could be used. So long as the travel patterns of the people continued to bring them into proximity of these places, and the resource based remained stable and productive, these sites could be re-used. Details on resource-harvesting activities and sites have been provided throughout preceding chapters.

11.3.5 **Spiritual Sites.**

A number of special purpose sites used for purposes other than travel or resource gathering and processing were also used by Aboriginal peoples in the boreal forest. Among these were sites important to the spiritual life of the people. Such sites could be obvious, archaeologically, such as the rock paintings at which offerings were often left. Or they might be archaeologically invisible, identified only through knowledge of oral traditions

referring to the significance of the site (e.g. Linklater, 1994:1,2). Several of these types of sites have already been discussed in some detail in Chapter 5 and elsewhere throughout the thesis, including rock paintings, *kipochihkans* and other places for leaving offerings, dream quest sites, places for divining the future, locations of special dances and feasts, and burial sites. Only a few generalizations are thus required here.

Like any other sites used by people in the boreal forest, spiritual sites had to minimally be seasonally accessible from the travel routes and camps used by the people. However, it was often the case that sites used specifically for activities requiring the aid of the spirits were in locations more "off the beaten path" than most of the camps. For example, while rock paintings were typically made along the banks of water bodies which could be visited easily enough by people who sought them out (Jones, 1981:7), the lakes or streams on which they occurred tended to be those less commonly travelled, and the sites themselves were normally quite isolated from any regularly used camps (Steinbring, 1998:93,121,132). Sites from which sacred and medicinal plants were to be collected by Cree were, by necessity, similarly accessible, but were still best chosen from places away from the camp. This ensured that the place from which they were collected would be 'clean', not stepped all over or otherwise contaminated by day-to-day activities associated with the camp. If not collected from a spiritually clean place, the medicines were said by the Cree not to work (Zieba, 1990:61).

Whether the relative isolation of such sites as these from camps and other regularly used places was a criteria for their sacredness or a response to it, it was in part the sacredness and 'clean' nature of a place that often attracted people there for spiritual purposes. While neither the Cree nor the Dené separated the spiritual from the other aspects of their lives, certain places were specifically known to be inhabited by powerful spirits, and these places were often selected for dream quests, the leaving of offerings, and other ceremonial activities during which the people hoped to be able to communicate with the spirit world (e.g. Brightman, 1989:161; 1993:82; Dewdney, 1965:14; Merasty,

1974:17). Other locations were sacred because they were a part of the traditional landscape, i.e., landforms and other features which bore evidence of an event that happened long ago according to the oral histories of the people (e.g. Hanks, 1997:180; Linklater, 1994:77).

Certain observable features of the landscape were regularly associated with spirits: heights of land were often favoured for spiritual activities because they brought people closer to the spirits of the sky (Linklater, 1994:92; Martijn and Rogers, 1969:147); and high cliffs alongside water, particularly those near falls and rapids, were often known by Cree to be inhabited by *Mimikwishwahk* (Brown and Brightman, 1988:197; Dewdney, 1965:12-14; Downes, 1943:39; Ray and Stevens, 1979:15,96), which is why offerings were often left at such places.

Other spiritually important locations are not always predictable, however, without knowledge of the traditions of the people who occupied the land during the time being modelled. As noted earlier, the best that we can sometimes do is to acknowledge that such activities probably did occur and would have been important in the lives of the people living there, even when these do not show up in the archaeological record in an observably patterned way, or at all.

Graves, as discussed in Chapter 5 (Section 5.5), were typically made at or close to the place where the person had died. They thus had to be made in places accessible to those already being used by the people at the time of the death. If the person was to be buried, the graves were best made in relatively well-drained ground, and a place relatively safe from disturbance may have been preferred. While specific grave sites were not necessarily re-used unless another death occurred nearby, and were sometimes avoided for a time, they could be re-visited for other purposes.

11.3.6 **Caches.**

Cache sites are another type of special-purpose site. Caches were often made by boreal forest peoples for the temporary storage of surplus stores of food, hides, moss and other materials, seasonal equipment, and any other items which would have to be left behind

when travelling to a new area. If items were to be stored in a cache only while people were occupying that site or others nearby, these caches could be made right by the camp or processing site (e.g. Lister, 1996:70). At other times, however, the caches were used to store items which were being left behind as the people moved on to new areas. These would only be useful to the people if located in places which would be returned to when those items were needed.

In this latter case, it was more the area or region than the specific location which was important regarding the site chosen for a cache. For example, for stores of food to be of any use to the people during the winter, they had to be made near or within the winter camp area (Brightman, 1993:360; Honigmann, 1956:44; Orecklin, 1976:122), probably within a couple days walk at most. These could have been scattered throughout the wintering area, isolated from any particular camp. Recent caches found on the land around Lake Wapisu, for example, are usually isolated from any other camp feature (Orecklin, 1976:122). Alternatively, caches made to store tools and equipment used during the summers could be left alongside routes followed from the summer or fall territories to the winter grounds, with the expectation that the same route would be followed in reverse - if not in the following year, than in some other. The same would apply to caches of winter equipment, when travelling in the opposite directions (e.g. Blondin, 1990:148; Brightman, 1989:157; HBCA, B.91/a/1:9).

The specific types of locations selected for a cache could vary considerably. They might be along a shoreline (e.g. Blondin, 1990:148), or well inland (e.g. Blondin, 1990:143). They were often made beside or within the base or satellite camp (e.g. Rogers, 1963b:49) but could also be made beside a more distant resource harvesting site (e.g. Brumbach and Jarvenpa, 1997:425,426; Lister, 1996:70). They might be placed in rock crevasses (e.g. Orecklin, 1976:122; Petch, 1993a:3; 1993b:90), on a platform (Meyer, 1985:219) or hidden in the bush (Orecklin, 1976:122). Meat cached away for the winter could be buried under snow (Birket-Smith, 1930:20) or in the frozen muskeg (Fiddler,

1985:107). Other than the seasonal accessibility of the site, about the only other consistent criteria in choosing a site for a cache , apparently, was that the people leaving it could find it again, weeks, months or years down the road, and that it be relatively safe from destruction by flooding, animals and other natural factors.

11.3.7 **Fur Trade Posts.**

One last type of special-purpose site used by Aboriginal people specifically during the Fur Trade period were the trade posts themselves. Being long term habitation sites as well as places of trade for people throughout the region and even more distant places, trade posts were best located on the same sorts of sites selected by Aboriginal peoples in the boreal forest for their base camps and gathering places. Because they were normally meant to be occupied year-round and often at least initially planned for more than one year of use, certain other conditions had to be met as well.

The locations for a fur trade post were those situated along a major travel route, preferably one which accessed territories used by people willing to trade with the company (Anderson, 1961:79; Tyrrell, 1934:114,115). Frequently, in fact, they were placed in locations central to the territories of a number of bands, although many traditional gathering places were also favoured for the trade posts (Meyer and Thistle, 1995:418).

Not only did the posts have to be in locations where the traders in question could attract trade, they also had to be placed where they could compete with other companies for that trade. A good view of the water routes in various directions from the post was thus beneficial, as it allowed the traders to see not only potential customers approaching or passing, but to watch the activities of any competitors (Tyrrell, 1934:114,115) who were often located nearby, sometimes right "next-door" (e.g. Brumbach and Jarvenpa, 1989:113; HBCA, B.83/a/1:5,8).

For the trade to be lucrative, posts were best placed in regions with abundant furbearers for the Aboriginal customers to trap or hunt (Anderson, 1961:79; Brumbach and Jarvenpa, 1989:113). In order to support themselves all year, not to mention their

Aboriginal families and any others camping at the post or nearby, the company traders had to additionally be sure to locate the post in an area with abundant food resources. The most reliable food resource being fish, inland posts were most often located on lakes with productive, year-round fisheries (Anderson, 1961:79; Brumbach and Jarvenpa, 1989:113; Glover, 1962:93,94; Tyrrell, 1934:114,115). If a post was established in a place lacking a good fishery nearby, it did not tend to survive long (e.g. HBCA, B.83/a/2:7,7d; Tyrrell, 1917:376).

Traders probably relied on Aboriginal suggestions regarding fisheries, but they also knew from experience to look for lakes "of at least twenty miles in length by two or three miles in width ... as it is only large and deep lakes that have fish sufficient to maintain the Trader and his Men..." (Glover, 1962:93). They also realized that those lakes with sandy or pebbly bottoms provided spawning habitat for the fall-spawning whitefish - a highly desirable food resource (Glover, 1962:94). Sites on lake shores at or near the mouth of a river were often chosen for the trade posts (e.g. HBCA, B.83/1:4d; Linklater, 1994:22; McInnes, 1913:2; PAM, MG1 B14, Ia:157). While such locations would have been useful simply because so many people were bound to pass by them, they additionally tended to be places of good fishing.

In addition to requiring at least sufficient necessary food resources nearby, trade posts could not be easily built in any location where there were not enough suitably large trees to be used for timbers for its construction (Tyrrell, 1934:107). Abundant firewood would also have been desired (Anderson, 1961:79; Brumbach and Jarvenpa, 1989:113), and stands of birch nearby were often considered favourable as well (Tyrrell, 1934:114,115), these trees being useful for many purposes.

The specific site chosen for the post had to be high enough above the shoreline to avoid being flooded with the spring thaw (Tyrrell, 1934:107,113,114). Being occupied through the winters, it is likely that most posts would additionally have been placed back in the bush a way, behind a wind break of trees. Level, well-drained ground with not too many

boulders would also have been preferred, as it was for most large base camps; and the suitable space available had to be extensive enough to support the post as well as all the associated activities, including the camps of visiting customers and of family members.

Table 11.1 summarizes the various different types of sites which might be found reflected in the archaeological record, together with a statement of their purposes, and an assessment of what types of factors most influenced their use. As has been demonstrated, the availability of specific resources was often influential on site choice. The types of locations in which plant, animal and mineral resources could have been found have been detailed throughout earlier chapters, and in the appendices to follow.

Table 11.1 Examples of land use sites and site choice factors.

Site Type	Typical Character of the Site	Expected Priorities for Selection
CAMPS.		
Base Camps.	Longer-term residential camps in which a variety of activities associated with day-to-day living take place. Often re-used (Lister, 1996:165; Rogers and Black, 1976:8,27).	Site should be safe, accessible and comfortable. Multiple resources should be available nearby (Kvamme, 1985:228; Rogers and Black, 1976:23-25).
Satellite Camps: e.g. hunting camps, kill camps, plant-harvesting camps.	Shorter-term camps established away from the base camp for taking of resources (game, fish, plant or mineral) more than a day's journey away. Generally small and special-purpose. Activities are dominated by harvesting the desired resources. Re-use less common (Irimoto, 1981a:129; Martijn and Rogers, 1969:151; Rogers and Black, 1976:23,24).	Sites must be accessible and should be reasonably safe and comfortable, but the last two criteria are not as important as proximity to the resources desired (Kvamme, 1985:228; Rogers and Black, 1976:23-25; Wood, 1978:261).
Gathering Places.	Base camps at which groups belonging to one or more regional bands come together. A variety of ecological, social and ritual activities take place. Duration of use may vary. Often re-used (Conkey, 1980:612; Martijn and Rogers, 1969:98,152,153; Meyer and Thistle, 1995).	Site should be safe, accessible and comfortable. The site and its surroundings must be able to support a large group for the duration of the gathering. It should be conveniently placed for the various groups gathering there (Meyer and Thistle, 1995:409).
Travel Camps.	Short-term camps made en route from one base or satellite camp to another. Length of occupation depends on travel conditions and proximity to desired resources. Often re-used (Martijn and Rogers, 1969:150).	Site must be accessible and convenient to the travel route. Safety and comfort are still desired, but are less important than in a base camp. Proximity to food resources is desirable.

SPECIAL PURPOSE SITES.		
Rest Stops.	Brief stops made en route during travel. Camps are not set up, but a fire may be built, food may be prepared, repairs may be made to equipment, and so forth. Often re-used (Orecklin, 1976:90,116).	Site is generally directly along the travel route. Convenience, comfort and aesthetics may be primary considerations (e.g. Orecklin, 1976:90).
Portages.	A detour taken around a difficult section of water when travelling over water-routes: e.g. during open-water seasons, canoes/boats are carried around falls and bad rapids; in the ice-covered season, when walking over the ice, a similar detour may have to be made around open stretches of water. Rest stops may be made in association with the portage. Re-used.	Portages are made where needed. The route taken is usually the shortest detour which is still accessible, passable and safe.
Paths or Trails.	The route taken over land from one location to another, both within and between greater areas. In some cases the trails may be well-established (e.g. Andrews and Zoe, 1997:162; Martijn and Rogers, 1969:135; Rogers and Rogers, 1959:133), while in others they may be unmarked and/or newly made (e.g. Rogers, 1973:20). Re-use variable.	Trails should be made between locations over ground which is accessible, passable and convenient to the beginning and end-points, and any intervening destinations.
Resource Harvesting Sites:	The sites from which specific resources are taken. Site may be re-used as long as the resources remain available and the people continue to use the general area.	The sites must be accessible and should be safe, but are defined by the presence of the desired resource.
- Kill Sites.	Ethnographically defined, this is the specific location at which game is caught or killed. Repeated use of the location is likely limited to planned kill sites, such as caribou surrounds.	Sometimes this is a planned location, as when caribou are herded into a pound. Other times it is more random, as when an animal is stalked and killed at whatever point the opportunity arises.
- Fishing Sites.	The location at which fishing (with any method) occurs. Often, the cleaning and preserving and sometimes storing of fish is done on shore adjacent to the fishing station (e.g. Lister, 1996:61,70). Often re-used.	The sites must be accessible, but are chosen based on their known or expected productivity of fish.

- Trapping Sites.	The locations at which traps or snares are set for catching game. Traps are set and the sites re-visited periodically in order to clear them out. May be re-used.	The sites must be accessible. It must be possible to set traps/snares there. Locations are chosen based on known or expected productivity of the site for targeted species.
- Plant-Gathering Sites	The locations at which different plant types are harvested for food, medicine or materials (e.g. berries or herb picking, moss gathering, birchbark harvesting). Re-use variable.	Sites must be accessible, but it is the presence of the desired plants which are of primary concern. Proximity to camp is often - but not always - desirable.
- Quarries.	Locations at which lithic materials for making stone tools are excavated from the landscape - typically at bedrock outcrops. Re-use likely at good quarry sites.	The site must be accessible and should be safe. The presence of the resource is vital.
- Clay-gathering places.	The locations from which clay for pottery-making is dug. Favoured locations may be re-used.	The site must be accessible, but it is the resource which is of primary interest. Proximity to the pottery-making location would likely be a concern.
Ceremonial Places or Spiritual Sites:	Special-purpose sites (e.g. rock paintings, landscape features associated with some mythic or historic event, *Kipochihkahn* sites, dream quest sites, dancing circles). Use tends to be short-term but the sites are often revisited regularly.	Spiritual associations with the place are often important. Some physical characteristics of the site may be influential. The site must be accessible; however, isolation from more intensively-used areas is often a factor as well (e.g. Steinbring, 1998:121,132).
- Burials.	The place at which a deceased person and/or their belongings have been interred. The location may or may not be marked with a cairn or some other grave marker. May be re-visited.	Burial sites are typically made near the place where the person died. Within that area, a "good" site for burial would be selected based on the physical setting (Riddle, 1994a:23).

Caches.	A cache is made for storage of surplus preserved foods, seasonal equipment, or other goods which people leave behind for later use. Caching methods vary.	Caches may be made at a camp or processing site (e.g. Lister, 1996:70); or they may be isolated (e.g. Orecklin, 1976:122). The location must be accessible and convenient to return to.
Trade Posts (Fur Trade).	Typically semi-permanent establishments out of which fur trade interactions were based. In addition to being locations of trading, the posts and their immediate surroundings served as residential base camps for post employees and their families, and temporary camps for people visiting for trade, aid and other reasons. Duration of use varied, but posts were generally intended to be used for at least one season.	Sites should be safe, accessible and comfortable (in all seasons). Resources must be enough to support people year-round and so are an important factor. The convenience of the site to the Aboriginal people in the region is another primary consideration.

12. SUMMARY AND DISCUSSION.

12.1 Introduction.

Hundreds of archaeological sites have been discovered throughout the boreal forest of north-central Manitoba over the past thirty years. From the increasingly large data base of sites and artifacts produced during the activities of the Churchill River Diversion Archaeological Project and a handful of other, smaller projects within the region, much has been learned about the people who once lived there. Our awareness of the extensive and complex history of occupation of the region has grown considerably. Occupation of the region has been pushed back thousands of years, and based on analyses of the stylistic variations in artifact classes and assemblages, as many as 39 groups of people have been identified as having used the region (Historic Resources Branch, n.d. [1998]:4).

However, investigation of the region has been limited almost exclusively to the shorelines of the water bodies affected by Manitoba Hydro developments. While the lakes and rivers were undoubtedly focal points in the lives of boreal forest peoples such as the Rock Cree, there is still more to the history of use of the boreal forest than the history of its shorelines. This much should be clear from a consideration of the land use patterns reconstructed in the previous chapters of this thesis. Additionally, while extensive analyses have been made of some of the artifacts recovered from these shoreline sites, with few exceptions comparatively little interpretation has been made of the sites themselves. The vast majority have been identified simply as "camp site" or "large camp" or "small camp" in the site inventory forms, and generally only the most productive of these have been considered in any more detail in subsequent reports.

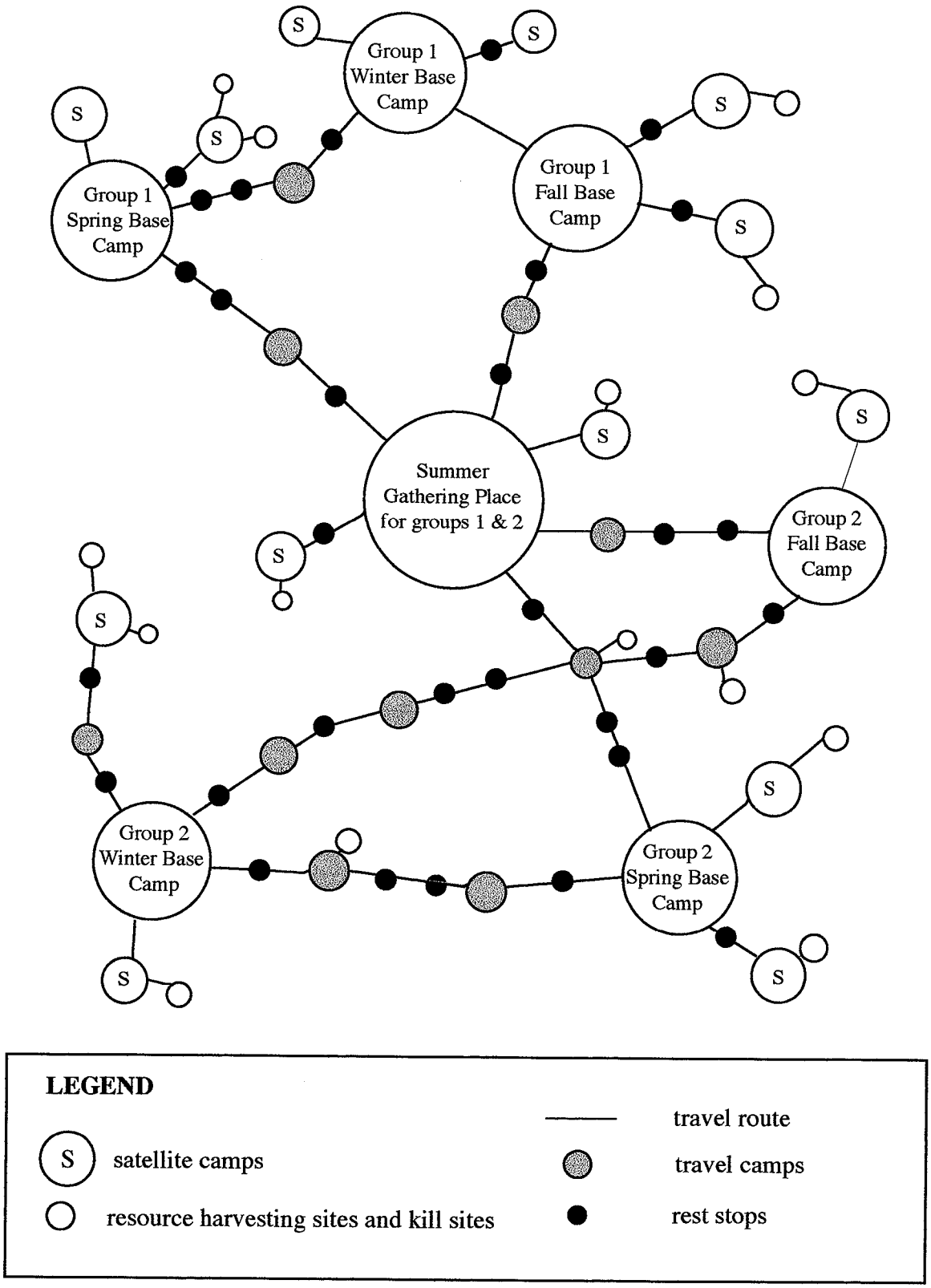
Without recognition of the variability inherent in the distribution and location of sites, not only between different culture systems or different time periods, but even within a single cultural system, it is not possible to fully understand the nature of these people's land use systems. This is because the activities of Aboriginal peoples throughout the boreal forest and others, elsewhere, are bound to have varied across the landscape:

> ... human systems of adaptation are assumed to be internally differentiated and organized arrangements of formally differentiated elements. Such internal differentiation is expected to characterize the actions performed and the locations of different behaviors. This means that sites are not equal and can be expected to vary in relation to their organizational roles within a system (Binford, 1980:4).

In order to better interpret and explain the nature of Aboriginal land use within the boreal forest, it is vital that we recognize this patterned intersite variability. The inter-related and complementary roles of activities carried out at often spatially distinct locations is what ties them together into land use systems, "that is, sites are articulated into networks because each served a specialized function and together they formed a whole" (Chang, 1972:12). These systems can be visualized as seasonal rounds of land use activity, i.e., seasonally variable patterns of economic, social, political, ritual and 'random' behaviors and the locations in which they took place. Additionally, utilized locations might be linked up into a network of seasonal base camps, special-purpose satellite camps and various limited activity or special purpose sites (figure 12.1). Thus, not only must the cultural and temporal affiliation of each site be identified, but also their season of occupation and their function(s) (Willey, 1968:209). To date, this interpretation has not been made to any great extent in the boreal forest of north-central Manitoba. As a result, a more complete system of past Aboriginal land use has not yet been considered in much detail. As noted earlier, this is due largely to the absence of recognized indicators of site function and seasonality in boreal forest archaeological sites.

The CDAP and other projects have truly produced an immense body of site data which could be used in the potentially informative study of archaeological site distributions and the land use systems which they reflect. However, two criteria must still be met. First, a more fully representative site sample needs to be surveyed; or alternatively, assurance that the existing site sample is in fact representative of the variability of sites existing in the boreal forest of north-central Manitoba. Second, there is a need for more meaningful interpretation of the sites discovered. People used the land extensively for many purposes,

Figure 12.1. Schematic representation of a portion of a boreal forest settlement system.



and not all archaeological remains are necessarily going to represent camp sites or camp sites alone. Also, not all camps were occupied for the same purposes, by the same people, for the same length of time, or in the same season. Without a good representation of the various activities which took place and without the ability to interpret what these activities were, any system of land use which might be reconstructed would be incomplete and potentially misunderstood.

To these ends, archaeological predictive modelling has been suggested as an effective means to not only make testable predictions of site distributions, but also, when based on theory or ethnographic analogy, to interpret them. The theory on which these models are based can be used to explain the role of individual predicted or observed sites in the wider network of site locations reflecting the land use system of a people. It may also be used to present hypotheses regarding those components of the land use system which are less likely to show up in the archaeological record to begin with. This is helpful when the goal of an archaeologist is to try to visualize a more complete way of life than is reconstructable from the more evident archaeological remains alone.

12.2 **Summary: a Recognition of Variability.**

It has been the aim of this thesis to present a set of relatively comprehensive ethnohistoric reconstructions of Aboriginal land use within the boreal forest which could then be used in the future development of theory-based predictive models of archaeological sites in north-central Manitoba. Recognizing the need to identify the differences in land use according to the people being considered, separate ethnohistoric reconstructions were presented for the Rock Cree/Selkirk occupants of the region and the Edthen-eldeli (Caribou-Eater) Dené/Taltheilei who appear to have been seasonally resident, sporadically, until the fur trade, after which a certain percentage of the Dené population became even more regular users of the region. Recognizing that land use changes over time in response to various ecological, social and even spiritual factors, the land use patterns of these peoples were further considered separately for the Late Woodland and Early Fur Trade culture

periods. And in order to consider the seasonal variations in the land use by each of these peoples in each time period, their systems of land use were presented in the form of seasonal rounds of activities and changing criteria for these. For this purpose, a wide variety of ethnographic, ethnohistoric, archival, archaeological and 'emic' sources of information on the land use of Cree and Dené peoples within the boreal forest were studied and the data were synthesized to produce the ethnohistoric reconstructions presented in this thesis.

12.2.1 **Variability by Culture.**

The results of this investigation have clearly illustrated the importance of the boreal forest to both Cree and Dené people in this region. Any predictive or interpretive model of Aboriginal land use in the boreal forest would have to take not only the Cree, but also Dené, presence into account. While Rock Cree were the year-round occupants of the boreal forest, Dené people were at least seasonally resident, occasionally ranging as far south as north-central Manitoba when the caribou drew them there. But still, their traditional use of the forest was certainly different from that of the Cree, as was the extent of that use. A model of land use would have to consider each of these peoples separately, or risk glossing over these differences and their significance.

To begin with, the role of the forest in the land use systems of the Cree and Dené peoples was not the same. The Cree were boreal forest generalists. They lived year-round within the forest, making their living by utilizing a wide variety of resources within it. They switched their economic emphases on particular animal and plant species not only seasonally, but also across space and time as resource availability fluctuated with successional changes in the boreal forest habitat patches (Feit, 1969:94). Short of a catastrophic event such as an extensive, severe forest fire which left a whole region uninhabitable or an event such as a devastating epidemic of disease which left a region virtually uninhabited, Cree people were able to remain within a region; they would move

only from area to area within that region, dispersing and gathering as necessary, for as long as they could find sufficient resources to support themselves.[206]

For the Dené, occupation of the boreal forest was only a seasonal component of a larger system of land use which also included use of the tree line and the southern barrens. Until their entrance into the fur trade, Dené were generally present south of the treeline only during those seasons that the barren-ground caribou were in the forest - from the late fall or early winter until early spring (roughly November to April or May, under current climatic conditions). In contrast to the Cree, Eastern Dené peoples traditionally focussed more specifically on the barren-ground caribou for their subsistence. They did look to other animals and plants for alternate sources of food and materials, sometimes due to a temporary lack of caribou and sometimes simply for variety. But still, when the caribou left the barrens to spend the winter in the northern forests each year, the Dené tended to move south as well, travelling after the caribou. Because the specific path taken by the caribou in any given year can vary, as does the distance into the forest which they travel, Dené use of the boreal forest as far south as north-central Manitoba was rather less stable or predictable than that of the Cree. All the same, use of this region was still an important part of their lives when the caribou drew them there.

Once in the boreal forest, Cree and Dené people moved through the region in different ways and this affected their use of specific parts of the forest. The Cree tended to travel along the major water routes both in summer, by canoe, and in winter, on foot. Inland locations which were not readily accessible from these routes of travel were not extensively used by Cree people. They did make more use of inland lakes during the winters than they did at other times of the year; these were easier to get to in that season, when the sometimes unnavigable tributaries were frozen and the biting insects were dormant (Ives, 1982:97,99; Tanner, 1979:40). But this use was still restricted primarily to the winter months and to those water bodies which could be accessed by following a tributary much of the

distance.[207] With the exception of longer portages between waterbodies, they did not tend to make many extensive journeys over land.

Travelling roughly north-south, Dené entered and left the boreal forest over land, crossing lakes and rivers rather than travelling along them as the Cree did. The types of locations readily accessible to them from their routes of travel would thus likely have included numerous places which - although not impossible for the water route-oriented Cree to reach - would have been more out of their way and, so, less likely to be used.

Dené could be expected to use not only the area immediately surrounding lakes, rivers and streams, but also the land between them, minimally for travel, rest stops and travel camps, if not necessarily for their base camps. Particularly during the winters, the season when Dené were most often in the boreal forest, it was not essential that people camp near a water body. Snow could be melted for water, if necessary. Hence, some of the travel camps used by Dené within the northern portions of the boreal forest could be expected to occur farther inland from any water body than those regularly used by the Cree. The Dené's daily activities of hunting and resource collection and likely some of the satellite camps associated with these could likewise be expected to occur farther inland from the major lakes and rivers than was typical for the Cree, although not necessarily any farther off their overland trails than Cree would travel away from their water routes.

Cree people might use suitable land all around lakes and rivers for their camps and activities. The Dené, in contrast, were likely to particularly concentrate their use of the shorelines to those places where the caribou tended to emerge from the bush, most typically along the eskers where these meet the water bodies. They likely would have spread out along the shorelines themselves once in an area where the caribou halted or slowed down their travel for a time, however, as the caribou dispersed across the area, or when there were no caribou to hunt.

Further differences in Cree and Dené land use resulted from the different range of game which they emphasized. Dené people were likely to pursue caribou all through the

winter, living on surplus meat when the caribou were too dispersed or wary to be hunted in great numbers. Cree hunters were unlikely to ignore herds of barren-ground caribou when these ventured into their territories, and more than likely would have at least established satellite camps near strategic hunting locations in order to take advantage of this comparatively concentrated game while the animals were migrating. Cree were less likely to move to entirely different lake systems, the way the Dené were, in order to stay where there were caribou, however. If other game could be found in suitable abundance within their own familiar territory, Cree people were more likely to remain there and shift their hunting emphases to these other animals instead. These territories could have included a number of different lakes, but shifts between these was less tied directly or solely to the presence of barren-ground caribou than similar movements made by Dené hunters in a single season.

And so, even without taking into account the various resources which they would stress in the other seasons, Cree were more likely than Dené to locate themselves and their activities in a wide variety of areas bearing a wide variety of habitats. The Dené would concentrate primarily on those areas with access to the more open lichen woodland preferred by barren-ground caribou. Their use of other habitat patches was probably limited to those times that the caribou were difficult to get, when they desired some other game for variety, or when certain plant or mineral resources not available in the lichen woodlands were needed or desired.

One important point to consider here is that due to frequent forest fires and resulting forest succession, an area preferred by caribou at one point in time, for example, might become unfavourable to them after a burn; thus, Dené interest in that patch of forest might also decline somewhat at that time. Meanwhile, the early deciduous browse that colonizes many forest sites in the years after a burn might attract more moose, which although not terribly tempting to most Dené are quite attractive to Cree hunters. In other words, the same general area might be exploited by the Dené and Cree for quite different reasons at different

points in the history and development of the forest. This fine level of palaeoecological reconstruction is beyond the abilities of most researchers at this time.

However, this phenomenon must still be considered when investigating or predicting Cree and Dené land use within the boreal forest; what exists in an area today is not necessarily what was there at the time that it was being used by the occupants of a given site. All too often the environment has been presented as unchanging and homogeneous when described in reports. This of course presents problems for analysis, as behaviors can easily be matched to the wrong environmental variables (Winterhalder, 1978:118-148; 1981b:78; 1982:15,17). Ideally, the entire range of forest stages characteristic of that type of landform at that latitude, and the plant and animal resources which might be available at those different stages over time would have to be considered.[208] At the very least, fire succession and other such processes in the boreal forest may be offered as possible explanations for what appear to be anomalous or disadvantageous site location choices in the context of the modern environment (Hamilton et al., 1994:7).

At a more site-specific level, it is likely that similar types of sites would be chosen by the Cree and the Dené for similar types of activities. For example, many of the same criteria for a good winter camp place chosen by the Cree would apply to those chosen by the Dené: these would be sites which were accessible from their routes of winter travel, with relatively level, even ground, access to a source of water, abundant firewood, moss and spruce boughs, (probably) a reliable winter fishery nearby, and protected from the cold winds.

As has already been noted, however, because they differed in their routes of travel, Cree and Dené would likely define accessibility of sites differently. Other site-specific variables would similarly vary according to the different needs of these peoples. For example, in contrast to the Cree, Dené tended to winter in larger groups whenever the caribou were concentrated enough to support these numbers; thus they would have required somewhat greater amounts of space for their winter base camps. Dené were also more wary

of Cree attack when in the boreal forest than Cree were of the Dené. Dené would therefor likely put more emphasis on being either in a location well-hidden from the travel routes used by the Cree and/or in a defensible location with a good view available of the surroundings.

Because the Dené spent mainly the colder seasons in the boreal forest, any precontact Dené camp sites in this region are likely to represent winter camps. It is not difficult to understand why Taltheilei materials are rather rarely encountered in this region. Between their wariness of the Cree, their greater use of the overland trails, and their tendency to be in the forest only during those seasons that shelter from the wind is desirable, it is unlikely that many Dené camps of that age would be located immediately along the shoreline, where most survey efforts have been concentrated. Because Cree occupied the boreal forest year-round and were less concerned with attack, their choices of camp sites would have more often included locations along the shorelines, exposed to the breeze, than those of the Dené. Cree would only regularly camp well back from the shoreline during the winter months or when they were after a specific inland resource requiring use of a satellite camp.

As should be evident from the above examples, the variability in land use by different culture groups could be detected at a number of levels. At the regional level, the overall territories used by different groups of people over a year are bound to be different. Even during the winters, when both the Cree and Dené were in the boreal forest, for example, the Dené tended to remain farther north in the forest than the Cree. At the intermediate level, areas for camping within were chosen based on what types of resources the people were after, how close they wished to be to their neighbours, and whether or not there were any spiritual reasons to want to come to or avoid a specific lake, island or other area. Thus, this too could vary. For example, because Cree and Dené traditionally had at least slightly different resource goals even when in the same general region in the same season, the areas within which they chose to camp could vary. Dené were additionally likely

to try to avoid areas inhabited by Cree, further helping to keep them somewhat separate. And at the site-specific level, while the same criteria for site comfort may have influenced both peoples when using sites for the same purposes in the same season, issues of accessibility and convenience would have varied according to their different modes and routes of travel, and issues of safety from attack would have varied with different needs for defensibility or secrecy.

12.2.2 **Variability by Season and Site Function.**

As has been touched on just above and should be clear from the investigation of Cree and Dené land use in the framework of a seasonal round of activities, land use of any people within the boreal forest would be expected to vary rather significantly between seasons. Presented in this way, it can be seen that the land use patterns followed by both Cree and Dené did differ from season to season. For the Dené, the region which they occupied changed seasonally as the caribou moved from the barrens to the forest in the fall, and then back again in the spring. The size of the groups travelling or living together varied as well, as did the types of 'secondary' food resources sought. The Cree did remain within the boreal forest, as a rule, but may have travelled to different portions of this huge region in different seasons, exploiting different resources, and gathering and dispersing as resource availability changed.

The particular types of activities which they carried out - economic, social, political and spiritual - varied by season. For example, among the Cree, spiritual activities (including the dream quests, and the goose dance and associated feasting) tended to be greatest in the spring season. Mining for clay and the construction of pottery was limited largely to the warmer seasons, as was the quarrying of lithic materials to be used in stone tool making. Fishing could be important year-round, but the locations of the best fisheries altered seasonally, as did the species which could be caught and the fishing methods preferred. Cree tended to be most concentrated and stationary while gathering in the late spring or summer; they were generally most dispersed and mobile at various points during the winter

when food was hardest to come by and firewood was needed in the greatest amounts. The same type of variability by season existed for the Dené both while in the boreal forest and outside of it.

Because of these seasonal changes in 1) diet, 2) hunting and fishing methods, 3) the types of resources required for the manufacture and repair of seasonal items such as canoes, 4) the locations of procurement of mobile animal and fish resources, 5) settlement size and composition, and 6) concerns with the spiritual environment, as well as in the multitude of other factors which could affect land use patterns, boreal forest peoples would be emphasizing different types of areas in different seasons. This was based in part on the variable seasonal resource potential of these areas. Unfortunately, with the exception of mineral resources and usually fisheries, the resource potential of particular parts of the boreal forest change over the years in response to forest succession. For this reason, these particular aspects of land use - the nature of the areas or habitats favoured by the people being studied - might not be quite so clear from an observation of archaeological site distributions as they would be while observing a living population.

On the other hand, seasonal variations in the specific types of locations chosen for specific land use activities, especially regarding camp sites, are generally more evident. For example, camp sites occupied during the winters are almost universally farther back from the shorelines than those used during the summers when the bugs are biting and the shorelines may be the only places in the forest to find relief (e.g. Hanks, 1983:352). The use of less well-drained ground and less level ground for camping could increase after the freeze, when even muskeg becomes solid and snow-covered. Recent burns and their abundance of fire-killed, dry wood would be increasingly attractive for camping near as the weather turned colder. Portages around very shallow stretches of water, important features while travelling by canoe during seasons of open water, would be unnecessary during the winters.

Similarly, the site-specific requirements for different activities varied as well, and because these activities could be season-specific, any related variations in site location could again be seen as being patterned by season. For example, a rather specific set of criteria should be met for a good ambush site for barren-ground caribou during their migrations: hunters were most successful when they chose to wait along an anticipated or observed migratory path of the caribou, in a place where they had a good view of the surroundings, where they could keep themselves somewhat hidden, and where they could either use natural features of the landscape to direct the caribou to a specific point, or where they could set up drive lanes to funnel the caribou in this same way (e.g. Hearne, 1971 [1795]:78, 79). Such sites as these were most effective, however, only when the caribou were actually migrating during early spring and late fall/early winter. And because the paths taken by the caribou are not necessarily the same in the spring and fall, ambush sites useful in one season were less likely to be useful in the next.

So, like the variability in land use by different culture groups, variability in land use by season and by activity could be evident at several levels. It could be reflected in the region occupied, especially in the case of the Dené who left the forest when the caribou did in the spring and returned in the fall. It would be reflected in the different types of areas emphasized by season, according to the different resource, social and spiritual needs. And perhaps more obviously, when observing the archaeological record, in the specific types of locations selected for the sites.

12.2.3 **Variability by Time Period.**

Peoples' land use patterns can and do change over time with changes in their cultural goals or technology, or with changes in their environment, whether ecological, economic, social, political or spiritual. The land use systems of both the Cree and Dené changed to some extent with their involvement in the fur trade and with the effects of this trade economy on the resource base of the boreal forest. Relatively few Aboriginal people in north-central Manitoba were as immersed in the fur trade lifestyle during the early fur

trade periods as they came to be during the later fur trade. However, the Rock Cree and, to a lesser extent, the Edthen-eldeli Dené were becoming increasingly involved in the fur trade economy throughout even the early fur trade. Consequently, there were certain changes to their land use patterns which ought to show up at some level in the archaeological record. These changes have been discussed in the description of the history of the fur trade as it affected Cree and Dené, and in the descriptions of the changes to the seasonal rounds. Examples of some of the more apparent land use changes will be summarized below.

The earliest changes to Aboriginal land use following the introduction of the fur trade were likely changes in economic focus. This included the greater commitment to trapping for trade; beaver, muskrat, marten, otter, mink, weasels, lynx, wolverine, wolf and fox all took on a new importance with the fur trade, so more time was dedicated to the taking of these animals than had likely been the case in earlier days. Among the Cree, many of the animals trapped for trade had also previously been taken for both furs and meat, although in considerably smaller numbers, so that the new emphasis on furbearers was more an intensification of an existing practice than it was a new introduction (Brightman, 1993:248; Helm et al., 1981:151).

The most notable effects of the addition of trapping for trade would have been to increase the influence of furbearer presence on peoples' choices of where to live and work in trapping seasons. They would also have been attracted to visit the locations where the trade posts were to be found. These were sometimes places that were not visited frequently previously by that group of people (Pettipas, 1980:201), particularly before the influx of inland posts, when almost all direct trade was at the Bay. This resulted in increasing use of certain areas and the travel routes leading to and from them.[209]

With the increasing local scarcity of large game towards the end of the 1700s, and especially by the second decade of the 1800s, Cree families in the boreal forest had to catch more small game and fish for their food, breaking up into smaller groups which could more readily be supported by this fare, whether they themselves had been significantly involved in

the fur trade or not (Bishop, 1972:65; Brightman, 1993:267-269). Cree hunters did continue to hunt moose whenever they could (Hanks, 1982:112), but the large mammals were no longer abundant enough to be taken reliably. With the food shortages, there was also greater reliance on foods bought from the trade posts (Helm et al., 1981:151; Pettipas, 1980:201), further increasing the people's need to trap, and discouraging families from travelling too far from the posts.

The Dené, particularly the Edthen-eldeli Dené, came later to the fur trade than the Cree, and few ever became as heavily involved, trading meat and caribou hides more often than furs.[210] For those Dené who did become committed to capturing furbearers for trade, mainly those groups whose territories came to be centered around the Lake Athabasca region, the economic shifts were considerable. In addition to the new emphasis on furbearers, Dené people who came into the full boreal forest to trap through the winters had to give up their winter hunting of barren-ground caribou in those years that the herds did not range so far south. They had to hunt caribou more opportunistically than before and so spent the winters in smaller groups. A few Dené also chose to spend their summers in the boreal forest. This likely represented the first time that Dené people were more regularly south of the treeline in seasons other than late fall through early spring. Those few Dené who did spend their summers in the forest, near the posts, had to give up hunting barren-ground caribou entirely in that season.

These latter people traded in a specialized, caribou-focussed economy for a more generalist one. They expanded their subsistence hunting to include boreal forest species like moose and woodland caribou, beaver and the other furbearers, while at the same time they increased their emphasis on winter fishing significantly. It was probably not until the fur trade periods that the Dené regularly used gill nets for winter fishing (Rogers and Smith, 1981:134). Hardly any Dené ever gave up hunting caribou in the fall, however, preferring to travel north to the treeline in order to wait for the migration (Alcock, 1916:447).

Additionally, when they moved into the full boreal forest where water routes were more convenient than farther north and walking through the often dense bush less so, these Dené had to adopt more Cree-like travel patterns. They began to travel more by canoe during the warm seasons and over ice in the winters. Their land use within the forest became more constrained by the accessibility of sites by water route. The time investment in making quality canoes required for extensive travel was such that Dené were also less willing to abandon their canoes each year. This reduced some of the flexibility with which they had travelled through their territories in previous years: they were more pressured to return to the same place in the spring where they had left the canoes cached in the fall (Sharp, 1977:38).

Not all changes in territory were limited to those people actively engaged in the fur trade. Following the devastation of Aboriginal populations in Manitoba resulting from the 1781-82 smallpox epidemics introduced by the Europeans, the surviving Cree people re-concentrated in the more productive parts of their old territory. This allowed them to retreat back from the somewhat less attractive Hudson Bay Lowlands and the southern parts of the northwestern transitional forest (Smith, 1981c:148), so their territories shrank for a time until their population grew again. At the same time, the Dené were able to expand their own territories southwards into the lands abandoned by the Cree. At this time, Dené people began to more regularly occupy the full boreal forest of north-central Manitoba in the winters and sometimes during other seasons as well (Gillespie, 1975:375; Smith, 1981b:273; 1981c:148). Most did so in order to take advantage of the better fur resources available there and to increase their profits from the fur trade. Others may simply have moved southwards because caribou often travelled as far south as the full boreal forest and could now be pursued there by Dené hunters as well.

Certain implications for archaeological site distributions are evident from this brief summary of fur trade aged changes to Aboriginal land use in the boreal forest. For one, it seems likely that among the most obvious changes in terms of site distribution patterns

resulting from the fur trade was the expansion of Dené territories farther south into north-central Manitoba and their increasing presence there in seasons other than the late fall through early spring. The southward shifting of the Cree after the smallpox epidemics might be a less dramatic change, given that they were still living a life based within the boreal forest. Still, this would also have been a change which would still have to be considered when developing predictive or explanatory models of Cree land use during this time period. Similar changes in territory have no doubt occurred throughout the past as well, especially with north and southwards fluctuations of the treeline, and thus of the geographic zones used by the Cree and Dené peoples.

The addition of trade posts to the archaeological record was another obvious change, and the increasing concentration of people around these might also show up in terms of the concentration of sites around them. The placement of trade posts at traditional gathering sites encouraged continuity of use of those sites for gatherings, but it led to a change in the role and nature of the gatherings themselves. Gatherings at the post sites tended to be larger and more often multi-band or even multi-ethnic than during the precontact periods (Helm, 1981:664). While trade had quite possibly always been a part of the seasonal gatherings in the boreal forest, it became more central to the reason for visiting the sites. As well, with year-round posts established on the gathering sites, visits to these locales may have been made by more people, more regularly through the year than had been the case previously, when they were used for gatherings primarily in the spring or summer.

Many other significant changes in land use occurred with the fur trade. These included the increasing emphasis on furbearers, the reduced need to mine clay for pottery after the adoption of copper kettles, the increasing ability to fish through the ice after the introduction of ice chisels, the increased dependence on fish and smaller game, and the decreasing size of groups when large game became scarce. As notable as these changes may have been, however, the changes in site distributions resulting from these altered patterns of land use might still be rather subtle.

This is because the site criteria most affected by the above changes would be almost all related to the resource areas emphasized. As already discussed, because of the changing nature of boreal forest resource patches, it is often difficult to identify what specific resources were present in an area to draw the people there. It is possible to predict what types of areas people would have selected for use by considering what resources were important to them at that time. However, without a detailed understanding of the palaeoenvironment of each portion of landscape being modelled, it would be difficult to determine which specific areas on the landscape would have fit these descriptions.

Causing yet more difficulties for detection of fur trade changes in the archaeological record is the fact that, for the Cree especially, most of the changes in land use brought on by their involvement in the fur trade were more often "shifts in emphasis", i.e., a growth or decline in activities already a part of their adaptation to the boreal forest, rather than "dramatic transformations" of their land use and culture (Hamilton and Larcombe, 1994:32).

More evident in terms of patterns relating to more stable environmental features are the site-specific factors. With the exceptions of site accessibility, which might change with changing modes and routes of travel, as in the case of the Dené adopting canoes for travel or either Cree or Dené people making increasing use of dog teams in the winter, and of the space required for camps as group sizes changed, the site-specific factors affecting camp sites are related primarily to the comfort, safety and convenience of the site. These criteria were generally unchanged by the fur trade (Hamilton and Larcombe, 1994:12; Kelly, 1982:8; Orecklin, 1976:76,77; Wood, 1983:110).

Because site-specific factors do differ with the functions of sites, the introduction of a new activity such as trapping, or an increase in that activity, might be expected to show up in terms of the number of sites found in those locations best suited for that activity. But trapping is a low-visibility type of activity in the archaeological record. It is typically carried out by small groups - usually pairs - of individuals, widely dispersed, and therefore leaving

behind rather little in the way of concentrated debris to mark their passage. The materials used in Aboriginal traps, including deadfalls, fibre nets and snares, would not preserve often in the archaeological record. Also, the steel traps, which were used in greater numbers as the fur trade progressed, were generally removed and re-used repeatedly so that very few trap sets would remain in evidence (Jarvenpa and Brumbach, 1989:188).

Without the benefit of temporally specific artifacts, it could often be difficult to tell whether a site had been occupied before, during or after the fur trade. The changes introduced to Cree and Dené land use during the fur trade were significant, even if at first they were only slight. But without an awareness of the history of the fur trade in this region, of the resource area-related variables influential on land use during that period, and of changes in the biophysical environment, it would be difficult to detect many of the changes in Cree and Dené land use of that time. This is just one reason why the study of ethnohistory can be so useful and an understanding of palaeoecology can be similarly important.

12.3 Discussion: Site Representation in the Boreal Forest and the use of Ethnohistory in Theory-Based Predictive Models.

The variability of land use by culture, season, purpose and temporal period has been made clear through the investigation of the ethnohistory of Cree and Dené land use within the boreal forest. Equally clear, however, is the fact that there is far more to the past land use systems of the people who lived in this region than has so far been discovered or perhaps ever could be discovered archaeologically.

The bias of most boreal forest archaeological surveys to the shorelines of lakes and rivers effectively makes it unlikely that any sites will be found representing activities carried out at any great distance inland from shoreline, or on the smaller lakes, ponds and streams which are similarly rarely assessed. Just a few examples of the materials which could be missed include those related to any camps which do not extend below the backshore terrace

to the shoreline. This includes many of the winter camps of any subarctic people, thus including the majority of any Late Woodland aged Dené/Taltheilei sites which might be present. Similarly, evidence related to winter hunting, inland trapping, and overland travel, including most traditional Dené travel routes, could be missed, as would sites related to the collection of berries and plant medicines which do not grow along the shoreline.

Additionally, there is so much in terms of peoples' land use which simply leaves behind little or no recognizable evidence under normal conditions of preservation. That certain activities included in reconstructions of a people's land-use will not likely be overtly represented in the archaeological record needs to be recognized. Plant collecting, of quite considerable importance to boreal forest peoples for their foods, medicines, dyes and fibres, is one example of a 'low visibility' activity since the plant materials collected do not tend to preserve in the archaeological record and there is little in the way of artifacts likely to be left behind at the collection site.

Another example is the Cree vision quest. Vision quests and other spiritual activities were an important part of both Rock Cree and Edthen-eldeli Dené culture, yet the sites inhabited by Cree dreamers for days on end (and sometimes for much longer) will not show up as readily identified 'sites' in the archaeological record of the boreal forest. Dreamers set themselves up in isolated locations in the bush. They were expected to fast and were allowed no fire while fasting (Brightman, 1993:78-80). Other than a few scattered lithics that might perhaps have been dropped during construction of a dreamers' platform, there would likely be little or nothing to mark the presence of the vision quest site that would survive to the present - not even a hearth. The former presence of scaffolds constructed for the vision quest might be identifiable if a surveyor knew what to look for, but preservation of any obvious trace of these is unlikely.

Yet another example are the travel corridors which were often well-known and repeatedly used in boreal forest environments (Tanner, 1979:37,38). Yet no concentrated archaeological resources are likely to be found along the whole extent of the path itself,

whether a land or a water route. Rather, any such deposits would be expected to occur primarily at any rest stops or travel camps set up periodically along the way.

The possibilities are of course many, and it becomes quickly apparent that the archaeological sites found across a landscape really reflect only a small percentage of the total use of the land, due either to survey bias, or the difficulty of detecting the small amount of recognizable evidence left behind by certain activities, and the virtual absence of evidence for others. A use of more probabilistic survey techniques, including more subsurface testing and more careful examination of a representative range of locations within the forest, both along the shorelines and away from them, might at least help to produce more of those under-represented sites for which there is some archaeological evidence. This is, however, a costly, time-consuming and often unrewarding method, and hence is rarely applied. Forest fires, low water levels and areas cleared for silviculture can significantly increase the ease with which land within the boreal forest may be surveyed for archaeological sites. These opportunities should be taken advantage of when presented, in order to more easily survey a wider and more representative range of locations within the forest.

If there is to be any hope of more regularly discovering traces of those less archaeologically visible activities, it is additionally necessary that surveyors be more open-minded about where to expect sites and about just what constitutes a 'site'. Rather than considering only the more extensive archaeological deposits to be significant, surveyors would have to record any and all evidences of human activity encountered across the landscape, whether these be isolated finds which appear to be 'anomalous' or not (Dalla Bona and Larcombe, 1993:3). [211]

It is, on the other hand, virtually impossible to include archaeologically 'invisible' activities in a model of Aboriginal land use which has been based solely on the observation of archaeological sites, i.e., without recourse to a theory or ethnohistoric reconstruction of land use, even if those sites were discovered through probabilistic survey. Without inclusion of so many activities, the land use system modelled would be incomplete and

interpretation of the system could fall quite short in terms of how all the sites and associated land use tied together.

The ability to offer testable explanations of land use behavior and decision-making is one of the most appreciable advantages of using theory-based predictive models over using the observation-based alternative alone. The other advantage is in the capability of theory-based models to be developed in the absence of the representative survey data and good site preservation on which accurate observation-based predictive models are so dependent.[212] Both of these characteristics make it a particularly useful approach for modelling and understanding land-use patterns in the boreal forest where the existing sample is likely biased and where current understanding of the meaning of the archaeological record is still lacking.

Theory-based predictive models are in fact capable of going beyond the predictive capabilities of observation-based models of site location in that they might be used to predict not only the preserved, visible sites represented in a regional sample, but any activity location, whether this location bears archaeological evidence or not. Theory-based predictive models are not constrained by the archaeological record and all of its biases, but only by the nature of the theory from which they are deduced. However, a theory-based predictive model developed from a poor or locally inapplicable theory or analogy will be no better than an observation-based model developed from a non-representative site sample (Hamilton and Larcombe, 1994:58). The testing of either type of model against independent, probabilistic regional samples is therefor vital before they may be accepted as anything more than hypothetical.

12.4 **A Final Word on Applications.**

The ethnohistoric reconstructions presented in this thesis, although based on careful study of the available sources, remain untested and are only hypothetical. And, in fact, because any model based on reconstructions such as these must take numerous complex variables into account, and because some of the variables affecting land use are still not well

understood, it may be more difficult than is practical to develop and test a theory-based predictive model of archaeological site locations using the materials presented. The difficulty of developing, operationalizing and testing theory-based predictive and explanatory models of site distributions is likely one of the main reasons why this approach is comparatively rarely taken.

Even if this difficulty should prove the case, however, there is still a benefit to the development of these analogy-based ethnohistoric reconstructions and any future attempt to base predictions on them. Simply investigating the land use of peoples in the boreal forest over time helps to highlight all those ways in which people had been using the land around them, many of which may not be archaeologically obvious, and may have been doing so even farther back into the past. This helps to expand our awareness of the range of a more complete range of activities which might have made up Aboriginal land use systems within the boreal forest. It also helps illustrate more fully the variations inherent in land use by different culture groups, in different seasons, and how these systems of land use could change over time. All of this may be used as a basis for more informed and detailed hypotheses to explain the site distributions and land use systems of peoples in the past.

Additionally, by reminding archaeologists of the wide variety of activities which have characterized past peoples' land use in the boreal forest, and the wide variety of locations in which these may have occurred, ethnohistoric studies can be used to highlight those locations within the boreal forest in which we might expect to find traces of land use not previously discovered during shoreline surveys. When predictive models are based on an understanding of land use patterns which is limited to archaeologists' experiences (their observations of the types of locations in which sites are commonly found), there is an inherent danger of finding only those sites already expected. By increasing the archaeologists' awareness of where sites might be expected, it is more likely that such locations will be surveyed, and that if any traces of evidence exist, that they might be detected.

In this way, the study of ethnohistory for the purpose of developing a predictive and explanatory model may *guide* survey efforts and thus lead to the acquisition of rather more representative site samples than could be acquired through intuitive survey alone. A probability sampled survey should still be made of all the types of locations existing in the boreal forest, if a truly meaningful sample of sites is to be acquired. However, ethnohistory might be applied in the development of criteria for stratifying the locations within a region for random sampling.

In stratified random sampling - a probability sampling technique - the region is stratified for sampling, each 'strata' typically consisting of those areas of like characteristics (e.g. those locations within 20 m of a shoreline, versus those between 20 and 50 m, versus those more than 50 m from shore). A specific proportion of space within each strata is then random sampled for survey, but these proportions may vary for the different strata identified. Because the proportion of space sampled from each strata is known, the actual chance of any specific spatial unit being randomly selected for surveying can be quantified. This makes stratified random sampling a probability sampling strategy (Thomas, 1986:130).

Typically, those strata expected to produce the highest density of archaeological sites would be surveyed most intensively. The expectations of site density can be made either subjectively or through consideration of theory or ethnohistory. In this way, consultation of ethnohistorical reconstruction-based models can be used to informatively guide probability sample-based surveys for archaeological sites, thus cutting down on the cost and time required for a simple random sample or a systematic sample of the same region to be made which would produce the same quantity and variability of sites. Once a statistically sound sample of sites has been surveyed in this way, more reliable observation-based predictive models may be developed. These are in fact capable of being very useful in predicting the locations of archaeological sites, if based on a sound sample. Thus, theory-based models and observation-based models can be quite complementary and should be

used together in this way.

The reconstructions presented in this thesis might also be used for evaluating the validity and applicability of existing predictive models for Cree or Dené land use within the boreal forest of north-central Manitoba. Predictive models are commonly based on observations of the distributions of known archaeological sites. If the range of site locations represented in the surveyed sample is incompletely representative of those locations used by people in the past, then the predictive model will likewise be incomplete. Consideration of the range of locations predicted by observation-based models and comparison of this range to that indicated by the presented reconstructions could be made in order to assess how representative a range of sites would be predicted by the observation-based model. Attention to the factors influencing peoples' land use decisions outlined in the reconstructions presented in this thesis, i.e. attention to the criteria which would have influenced the choice of locations for specific uses and to the reasons underlying the selection of those specific types of locations for those uses, might also be used to assess the validity of the predictive variables selected for inclusion in an existing model.

For example, distance to water has often been used as a predictive variable of archaeological site potential (table 3.1). It is important, however, to understand the reasons why people tended to choose sites which were relatively close to water. It is not distance to a body of water which was itself important to the people, but rather the access this afforded to a reliable source of potable water, to a travel route, and to a rich biotic zone to exploit. Exposure to breeze and a view, the drainage characteristics of the ground, and danger of flooding can also be affected by proximity to a shoreline and these are other considerations influencing peoples' decisions of where to locate their camps and activities. Certain water bodies would meet peoples' needs better than others. Peoples' needs will also vary by culture and season, and across time and space. To predict archaeological sites to be most common in locations within a set distance from a water body would be to miss the significance and influence of these and other factors.

One last point which should be made is that no predictive model, no matter how representative the site samples used to develop or test it, can make testable predictions regarding the sites of activities which leave behind no physical evidence. Many such 'invisible' activities may be suggested in an ethnohistoric reconstruction of land use. Without evidence, however, it is difficult to impossible to test the validity of any reconstruction of those aspects of precontact Aboriginal life which are not obviously reflected in the archaeological record.

All the same, so long as such reconstructions are acknowledged to be hypothetical, there is little harm in suggesting these as ideas about how people may have lived. It is, it would seem, an important step towards appreciating the peoples who occupied this region long ago as more than just the makers of artifacts. It is hoped that such has been one outcome of the ethnohistoric reconstructions presented in this thesis.

NOTES.

[1] The lack of preservation of organics can be a significant problem for identification and interpretation of sites. In many instances, the majority of the remains left behind by a group may have been organic. Dené peoples, for example, used relatively little stone for their tools and do not appear to ever have made pottery. Most of the remains left behind would have been of organic materials. What was once the site of a large camp could potentially be represented by only a small scatter of artifacts as a result, and the significance of the place could be missed (Le Blanc, 1997). Although, in the boreal forest, the Cree appear to have used a large number of stone tools in addition to pottery, the contents of caches of grave goods - a context in which organic materials tend to preserve better - indicate that a great variety of items were made from bone, antler, bark and seeds (Brownlee and Syms, 1999:37). Leather and wooden items, and most textiles, would be even less likely to survive, and their prevalence in precontact material culture can only be guessed (Brownlee and Syms,1999:39). Again, on a typical campsite, it is evident that the majority of the material traces left behind by the people would never be found by archaeologists (Brownlee and Syms, 1999:17).

[2] Blackduck was associated with Assiniboine, in contrast to Wright's earlier hypothesis of an Ojibwe association (Hlady, 1970:108), the then newly-defined Clearwater Lake with Woodland Cree (Hlady, 1970:112), and Grass River with either the Swampy Cree or perhaps the archaeologically unidentified Dené (Hlady, 1970:117).

[3] Stratified random sampling techniques were employed in the 1972 surface survey of the Outlet Lakes locality (Syms et. al., 1973:10,36), and random sampling was done for the 1972-73 surveys and test pitting of the shorelines of Lake Opachuanau (Hanna, 1973, cited in: Kroker, 1990:45).

[4] Both the burial recovery program and the renewed archaeological activities have been supported by funds from Manitoba Hydro (Historic Resources Branch, n.d. [1998]:3).

[5] The study of isotopic analyses done on residues of Kame Hills pottery by Sherriff et al. (1995) also demonstrated that the definition-eluding ceramic 'plates' common in this region were used for heating oils - although it could not be determined whether the fatty residues on the sherds resulted from their use as oil-burning lamps, or as frying pans for the preparation of food, or both.

[6] Similar observations have been made with reference to the Dené of the western subarctic: Dené oral histories often describe how a certain landform came to be - a result of some action by a person or spirit in the mythic past. In this way, the landscape is a record of the past to the Dené, just as Linklater described its significance for the Cree (Hanks, 1997:184,185). Also like the Cree, the Dené hold certain places on the landscape sacred because of this link to the past. The location is very important to them, even though there may be no obvious archaeological evidence of this significance (Hanks, 1997:180).

[7] Predictive models should not be used as replacements for mitigative surveys. No model - no matter how well constructed - can predict all of the sites. The value of predictive models for CRM archaeology is that, once they have been verified through testing procedures on samples of the region in question, their predictions can be extended to the remainder of the region and the modelled landscape used to guide further mitigative work. Rather than surveying whole regions, CRM archaeologists can use (successfully tested) predictive models to stratify the region according to the relative potential of each unit for containing a site. The proportion of units to be sampled within these stratified sub-samples of the region can then be chosen in relation to their relative likelihood of bearing sites: high potential strata can be intensively surveyed, while lower potential strata are surveyed at a considerably lower level of coverage (Carr, 1985:120; Dalla Bona, 1993:32; 1994a:16; Kohler and Parker, 1986:398; Parker, 1985:174).

[8] A probability sampling design is one in which each sample element, e.g. each individual parcel of land of a specific size, is given a known, non-zero chance of being selected. For example, in simple random sampling, each individual location is given an equal chance of being selected from the 'population' of elements. It is this statistical principle of known chance which allows meaningful statements to be made about the nature of the population based on a sample (Moore and McCabe, 1989:280). If there is any statistical bias built into the sampling design, the bias can be quantified because the percent chance of each element being selected for the sample is known.

In archaeological surveys, probability sampling designs often involve the use of simple random sampling, systematic sampling, cluster sampling, or some sort of multi-stage sampling process. The

appropriateness of each design and their capabilities of revealing a representative sample of sites varies with the nature of the landscape and the site distribution, however. The choice of which sampling design must be made carefully, for this reason. Discussion of these issues and definitions of the various sampling designs can be found in Judge et al., 1975; Plog, 1976; and Read, 1975.

[9] Opportunistic surveying of recently burned-over areas adjacent to the shoreline of Southern Indian Lake led Dickson (1972:38,45) to realize that theoretical biases regarding precontact land use in this region influence not only where archaeological surveyors look for sites, but also how they interpret the remains encountered. Due to the dense vegetation of the boreal forest, when investigation is limited to surface survey, archaeological deposits are rarely found anywhere but along the exposed shorelines. The scatters of artifacts to be seen on beaches and in stream cut banks are normally spatially limited and appear to agree with the assumption that boreal forest populations were dispersed over the region in small groups, thus leaving small, sparsely scattered 'sites.' However, at the north end of Southern Indian Lake an extraordinarily large and continuous scatter of artifacts and features was discovered in a newly burned location (Dickson, 1972:45).

Dickson observed that if this backshore zone had not been exposed to view by the fire, all that the surveyors would have found would be a number of small, spatially segregated artifact scatters located along the beaches. What was really one large archaeological site area would have been interpreted, without question, as a number of smaller separate 'sites'. He asks in retrospect: "How many similar large sites were bypassed because the heavy forest had mantled the ground surface and because the surveyors were not expecting to find sites larger than a few square yards?" (1972:45).

[10] In any attempt to model a precontact or early postcontact land use system from observed site distributions, or to test a theory-based model, it is therefore vital that the factors affecting site preservation and erosion be considered (Clarke, 1968:507).

[11] "Polythetic set" is a term defined by Williams et al. (1985:278,279). It refers to a type of model which presents a set of propositions about what properties tend to characterize a population (e.g. the variables which tend to characterize all or most archaeological sites in a region). In order for any item to be a member of that population defined by the polythetic set (e.g. a specific location being assessed for its probability of containing a site), that item must possess a large number of the properties identified in the set, although not necessarily all of them.

[12] Kelly (1982:116) mentioned that the distribution of sites found in the Sandhill Bay locality of Southern Indian lake did seem to support Hanna's (1974) polythetic list of criteria for site locations, but this was only a subjective assessment.

[13] Theory has been used in the Western Heritage Services Inc. models, as it is in most observation-based models, insofar as many of the variables to be examined are chosen with reference to theory of what environmental variables would have been influential on site location. Speculations are made - likely based on a knowledge of ethnographically documented land use patterns, or on 'common sense', although this is not made explicit - regarding the values of the variables expected to be preferred for 'sites' in the boreal forest (Finnigan and Gibson, 1996:3,4). However these are only very general statements of expectation. The model's predictions, ultimately, have been based on the observations of variable values correlating with site presence in surveyed areas (Gibson and McKeand, 1996:1) - not on the sparse theoretical predictions during discussions of variables selected.

[14] These predictions are made with reference to the landscape and its characteristics as they would have existed at the time that the locations were used. Detailed and accurate reconstruction of the palaeoenvironment is thus important for reliable predictions to be made (Kohler and Parker, 1986:432; Struever, 1968:289).

[15] For example, a location adjacent to rapids, stream confluences, river mouths or marshy shoals are often interpreted to have high potential for fishing opportunities. This is then cited as a likely reason for archaeological site presence at or near such locations (e.g. Tisdale and Jamieson, 1982:104).

[16] This is true even when the places are adjacent or environmentally similar to the region being modelled. For instance, it has been demonstrated that different groups of people may pursue quite different courses of

land use activities - even people in the same region and of the same cultural background (e.g. Weinstein, 1976).

[17] Outdated, in regard to anthropological interpretations is a relative thing. Today's paradigms will be considered outdated tomorrow. However, there are certain interpretive frameworks (e.g. unilineal evolution) which have been clearly demonstrated to be lacking in credibility as more and more evidence is stacked up against them.

[18] For example, it was long believed that the Western Cree were relative newcomers to the territories west of Lake Winnipeg - that it was only with the fur trade and with the aid of firearms that they had reason and were able to expand westwards, in search of more land and furbearer resources. This tradition was rooted in a misinterpretation of Alexander Mackenzie's 18th century narrative of his journeys in which he described the Cree as relatively recent arrivals in the west, but did not say when this had occurred. Nineteenth century historians working from Mackenzie's narrative interpreted this migration to have occurred during the early years of the fur trade, although this claim had not been made in the original documents or any others of the period in question (Smith, 1987:434,444). Ample evidence has been gathered in recent years from a variety of sources - archaeological, linguistic and oral historical - that while a westward migration of the Cree did occur at some point in their history, this occurred long before the arrival of the Europeans (Smith, 1987:445). It was only with this more critical analysis of diverse sources which allowed ethnohistorians to discover this original error.

In contrast, while the above is an example of an ethnohistoric misinterpretation of a vague original reference, other errors in ethnohistoric reconstructions can result from the ethnohistorians' uncritical acceptance of statements made in original documents. For example, HBC trader James Isham wrote of the Cree that they did not hunt waterfowl - an important source of food during the fur trade - prior to the introduction of firearms (Rich, 1949:117). Archaeological and oral historical evidence exists to the contrary, however (e.g. Orecklin, 1976:17; Ray and Stevens, 1971:40,41). Ethnohistorical statements often refer to the significant increase in waterfowl hunting accompanying the introduction of firearms: that although people probably did hunt some waterfowl in precontact times, this was comparatively minor in contrast to the post-firearm period (e.g. Honigmann, 1981:223). Just how minor was the waterfowl hunt to the precontact Cree, and how much are statements like this influenced by historical statements like Isham's that waterfowl were not important prior to the introduction of the firearm? Ignoring such a seasonally abundant source of food (which could be shot with arrows, struck with clubs, snared and netted) makes little sense.

[19] Local informants are potentially the most valuable source of insight into (at least the recent) land use patterns and possible meanings of site distributions in Manitoba's boreal forest. Consultation of knowledgeable individuals has been strongly advocated (Riddle, 1975:5; Tisdale, personal communication).

[20] Oral histories are like any other historical source, and so can be subject to many of the same sorts of biases (Brown and Vibert, 1996:xviii; Wood, 1990:90).

[21] "Certainly, the mining of Native narratives for relevant bits that fir with pre-existing, accepted archaeological constructs is a questionable procedure that runs the risk of extracting the narratives from their context, stripping away other meaning, and placing them within an external frame of reference..." (Denton, 1997:106).

[22] Similarly, the more densely occupied an area, the less choice individual groups would have of camp locations. More sites which were only adequate would likely be used in a densely occupied region, in contrast to one only sparsely occupied. In the case of the latter, there may have been more good camp sites than there were people to use them, and so the less ideal sites could be ignored

[23] For example, the makers of Kame Hills style of pottery were once thought to be quite localized around Southern Indian Lake (Wood and Wasnick, 1976:3). Through additional survey, it has been discovered that while these people may have used the Southern Indian Lake area most intensively, they were also occupying sites at least as far north as Big Sand Lake (Riddle, 1985), and were users of the Rat and Burntwood system as well (Syms, 1998: personal communication; Wood, 1983:65). Similarly, the distribution of Taltheilei materials - most common around and north of the treeline - has been expanded to

include sites in the Southern Indian Lake region (Kroker, 1990:154; Smith, 1995:171; Wood, 1975:9) and as far south as the Rat-Burntwood system (Riddle, 1994b:25).

[24] It is expected that the climatic fluctuations of the past 1200 or more years have been relatively minor and would have resulted only in spatial shifts of ecological zones rather than in dramatic alterations. The study region - north-central Manitoba, centering around Southern Indian Lake - is presently in the middle of an ecological zone: the boreal forest. It does not appear that at any time in the last 1200 years the northern (or southern) treelines shifted as far south (or north) as Southern Indian Lake; and coniferous forest appears to have been dominant through the entire period (Wood, 1983:33). The same plant and animal species represented in the region today probably have existed there throughout this period. The populations and distributions of these species may certainly have fluctuated, but likely little more than when resulting from shorter-term environmental changes due to fires and natural forest succession.

[25] For example, an area which was rich in moose at one point could be devoid of these animals for several years after an extensive forest fire. With re-establishment of the deciduous-forest type of vegetation preferred by moose, however, these animals would again return to the area. Any location capable of supporting suitable habitat for moose under the climatic conditions of the time could therefore be expected to have had moose present from at least time to time.

[26] For example, according to a Dené story told to Birket-Smith, Bear had stolen summer and taken it west. The people followed and finally managed to bring it back to the east again. But the ice and snow that had covered the land was melted by the warmth and flooded it. A great bird drank up all the water, and there was drought for a time, until Lynx opened up the bird's belly. Then all the water came out to form the rivers and lakes as they are today (Birket-Smith, 1930:83-86).

[27] Dyke and Dredge estimate that most of the eskers of the northwestern Shield were created between about 10,000 and 8400 years ago (1989:208) - the period during which the southern margin of the glacier was retreating north and eastwards through northern Manitoba.

[28] The dates for the deglaciation of northern Manitoba presented here are taken from Dyke and Dredge (1989). These authors suggest earlier dates for the retreat of the Laurentide Ice Sheet from northern Manitoba than previous researchers. Teller (1984:25), for example, had suggested that the ice and lake did not disappear from the northeast corner of the province until around 7500 BP. Their adoption of the older ages was based on more recent evidence (Dyke and Dredge, 1989:205). In particular, dates obtained from marine shell found in the southwestern Hudson Bay Lowlands indicate that the Tyrrell Sea invaded at some point between 8200 and 7800 BP (Dyke and Dredge, 1989:208). This transgression coincided with the final stages of destruction of the remaining ice sheet in Manitoba (Dyke and Dredge, 1989:206; Map 1703A, sheet 3). The marine transgression was a result of the ocean levels rising with the melting of the glaciers and the breaking of the ice dam formed by the glacier.

[29] In most cases, when the river outlet is at the north end of the lake, the rise of the north end would be expected to result in an expansion of the south basin southwards, while the northern shoreline remained in roughly the same position, and this seems to be the case for Southern Indian Lake. In contrast, where the outlet was at the southern end of the lake, the whole lake would shift southwards, flooding the older southern shorelines, and leaving the older northern shores high and dry (Penner and Swedlo, 1974:108; Pettipas, 1976:69.-64).

[30] For example, pollen records indicate that a spruce and birch forest existed in the Thompson, Manitoba region from about 6900 to 5800 years ago, and that this was followed by a pine and alder-dominated forest. The modern boreal forest community of that region was established by about 3200 years ago (Riddle, 1994a:16).

[31] Although the period from c. 6000 - 2500 BP was characterized overall by a warm and moist climate, there were a few centuries during which the temperatures were slightly cooler: 5000 - 4500 BP.

[32] It should be noted that the difference in mean annual temperature between the warmest post-glacial period (6000 - 3500 BP) and the coolest, the 'Little Ice Age' (1550-1850 A.D.), was probably little more than about 1 or 2 degrees Celsius (Diaz et al., 1989:53), but this could still have considerable effects on the regional ecology.

[33] Reconstructions of climate change in this paper were made by pulling together those proposed or cited by a number of researchers for this and the surrounding regions (Bryson and Wendland, 1967; Diaz et al., 1989; Lockery, 1984; Nichols, 1972 [cited in Dyke and Dredge, 1989:214]; Ritchie, 1983; Sorenson and Knox, 1973; Teller, 1984). Each of these reconstructions differ in details of timing and to a lesser extent, character of the changes. No reconstruction of climate change or determination of the ages of those changes can at this time be considered infallible. The outline presented here is only a rough approximation, meant simply to illustrate that there has been significant climate change since deglaciation, including some shorter-term shifts in climate over the past 2000 years, and to show how these may have affected the regional ecology.

[34] While the edges of the boreal forest have shifted north and south with changes in temperature, the 'heart' of an ecological zone will only change significantly with major alterations in climate (Bryson and Wendland, 1967:281; Ritchie, 1987:127,129; Wood, 1983:32), of which there have been none in the past 2500 or more years.

[35] Bedrock Shorelines are those dominated by outcrop. A Bedrock-Controlled Shoreline is a shoreline of overburden materials (clay, sand, till), the form of which is strongly controlled by the bedrock below. Outcrop is rare along these, and confined mostly to the backshore (Geotechnical Section, 1974:33).

[36] The level of the Churchill River upstream of Southern Indian Lake was similarly raised with the diversion, although the amount of this increase has not been so well studied as for that in the lake (Kroker, 1990:181).

[37] I have seen no references to any changing of course for this section of the Churchill River since deglaciation, and its entrenchment in the bedrock shield should result in slower erosion processes. However, at least some alterations to parts of its shorelines have no doubt occurred through normal processes of riverbank erosion and deposition - possibly enough to have significantly altered the position of certain sections. These possibilities should be kept in mind when trying to understand patterns of archaeological site location, particularly with respect to older sites.

[38] Before the flooding of Southern Indian Lake, it has been estimated that 76% of the shoreline was exposed bedrock. Since the rise in water levels, however, this has been reduced to 14%, while most of the remaining shoreline is of slumping overburden materials - mostly clays (Peristy, 1989:14, citing Newbury et al. 1984). The majority of this new shoreline would still be bedrock controlled.

[39] Damman (1979) has estimated that forest community patches are individually of small enough size that they tend to be unmapable at any scale less detailed than 1:20,000 (cited in Ritchie, 1987:149).

[40] Birch are still common in these northern regions, but form continuous stands only in the most favourable locations and do not tend to reach the larger size of those to the south (Ritchie, 1956:545,546; Tanner, 1979:37).

[41] The average fire cycle in the western boreal forest regions is 50 to 100 years, and 100-200 years in the moister, eastern regions, making it rare to find forest stands older than 250 years (Ritchie, 1987:142). The frequency of forest fires is far lower in the northern parts of the northwestern transitional forest, however (Ritchie, 1987:143).

[42] In the Northwestern Transition zone, trembling aspen is near its northern limit and white birch is more common on the early successional sites, even on good soil (Ritchie, 1956:559).

[43] It has been estimated that 89 food plants grow in various parts of the full boreal forest and 47 species in the northwestern transitional forest (Shay, 1980:246).

[44] The species recorded for the Southern Indian Lake and surrounding region seem to be representative of almost all those characteristic of the boreal forest in general (Kroker, 1990:29).

[45] Cree from the Nelson House area looking for better hunting, trapping and fishing settled the community of South Indian Lake along the narrows between South Bay and the main body of Southern Indian Lake in the early years of the twentieth century. The site became 'permanent' when the Hudson Bay Company re-established a store for them in 1930 (Waldram, 1983:63), but Cree people had been coming regularly to this part of the lake probably since they first occupied the region.

[46] The designation of different groups of 'Chipewyan' peoples is somewhat confusing as different sources

seem to divide them up in different ways. In this thesis, the definition of Edthen-eldeli Dené used by Smith (1981b:271) will be followed: "'caribou eaters', the bands along the forest edge west of Hudson Bay. They have also been called variants of Sa-i-sa-'dtinnè (*sayise dene* 'east (rising-sun) people', now the name of the Churchill band) and Th`e-yé-Ottinè (*θeye-hot'ine* 'dwellers at Stone Fort', the name of Fort Prince of Wales and later of Churchill)". This is in contrast to: the Thi-lan-ottiné, who occupied the region around the upper Churchill River drainage; the Kkpest'aylékkè ottiné, whose territory centered around Lake Athabasca and the Slave River; and the T'atsan ottiné, or the Yellowknife people of the northwest. A similar definition is that referred to by Minni (1976:61): during the fur trade, 'Caribou Eaters' was the term applied to any Dene - primarily Chipewyan - who remained marginal to the trade in favour of the traditional caribou-based economy; in time, the term came to be applied to all Chipewyan people living primarily east of Lake Athabasca, continuing to use the tundra and transitional forest ecosystems.

[47] At the time of first contact, the Chipewyan "exploited the taiga-tundra ecotone from near Hudson Bay to the Coppermine River on the Arctic, and within historic times expanded south and west into the full boreal forest beyond Great Slave Lake and Lake Athabasca, as far south as the Churchill River drainage" (Smith, 1976:1).

[48] Cultures older than an estimated 5000 years (3000 B.C.) are poorly represented by artifacts in north-central Manitoba. Evidence of these more ancient peoples has been found, however, to the west, in central Saskatchewan, and to the north, in Keewatin. It is quite possible that more people were also using north-central Manitoba during this time period than have been recognized from the archaeological record so far (Kroker, 1990:148; Larcombe, 1997a:9). An in depth study of the projectile points collected from the CDAP study region in north-central Manitoba has recently been made by Larcombe (1997a, 1997b): one type of spear point has been identified that is expected to have been made by people during this early period, prior to 5000 years ago (Larcombe, 1997b:9). This type of point has been found at three separate sites on the Churchill River (HdLw-6) and northern Southern Indian Lake region (HhLp-3; HiLp-16) (Larcombe, 1997b:plate 17).

[49] Whether these were peoples from the plains and the caribou-hunters of the north has not been determined, although a Northern Plano affiliation has been suggested in at least one instance (Larcombe, 1997b:88).

[50] The paucity of Plano sites discovered in north-central Manitoba for this period does not necessarily mean that they do not exist. For example, most sites found within the boreal forest today are located along lake or river shores as these were favourable camp sites and because detection of sites in the bush is difficult due to poor visibility. Plano sites might be expected to show up along shorelines as well when found on the Shield. However, between the melting of the glacier, the draining of the glacial lakes and the effects of isostatic rebound on the tilt of the land, many shorelines which existed during the Plano periods could be expected to have changed. Sites once located beside a lake or river could presently be hidden inland or underwater (Pettipas, 1976:63; Wright, 1981:87).

[51] "The more variable and diversified economies of the Archaic Tradition were reflected in the numerous types of projectile points that were manufactured during this period" (Larcombe, 1997a:9). In the northern parts of the Shield, while there is considerable evidence of variation in stone tool technology, such diversity probably reflects the increasing localization of the different groups of people more than altogether different ways of life. The overall adaptation of people to the boreal forest on the Shield in this period seems to have been quite similar in terms of their subsistence, settlement patterns and cosmology (Wright, 1995:265). All the same, certainly at least some other aspects of their cultures - economic, social and cosmological - could have differed from place to place, just as they can in present-day communities on the Shield.

[52] Although the earlier Plano peoples - those best known as hunters of giant bison in the west, and later of caribou in the north - had certainly hunted game other than these large mammals (Wright, 1995:37,39), and probably used plants for food as well, they appear to have specialized in the large game hunting - much like Plains peoples and Dené caribou-hunters of more recent times. Even the Eastern Plano peoples, who had moved into the forest fringe of the southern boreal forest and began to make use of the forest resources at least seasonally, apparently continued to emphasize bison whenever these were available (Manitoba Heritage

Network, 1998). The first evidence of more truly generalist economies in the boreal forest appears to have been left by the Shield peoples.

[53] In the forest, the stone rings which often identify the previous location of a tipi on the open plains are not generally found. Conical lodges may still be marked, however, by an excavated floor: at contact, Cree had sometimes dug out the floors of their winter tents to as much as two or three feet below the cleared ground surface (Orecklin, 1976:69,70). Such 'winterized' conical lodges would leave impressions in the land that could be recognized as old tent floors. Some of the smaller semi-subterranean shelters identified on Shield Archaic sites could have been this sort of structure.

An example of one type of semi-subterranean conical dwelling - used by the Cree of central Québec - is given by Hanks (1983:353): "The *sciikumik*, or moss-covered lodge, is built in the fall to serve as a base camp for the early winter hunt. Typically, the *sciikumik* is square or rectangular at the base with a sunken floor and a low log foundation wall. The top is a conical pole frame covered with moss or sod."

[54] For example, the peoples on the Shield probably learned of bow and arrow from the Arctic cultures (Pre-Dorset and Dorset), who had long possessed this technology (Manitoba Heritage Network, 1998; Wright, 1995:444). Trade between Shield and Plains peoples may have occurred: Knife River Flint from North Dakota has been found in Shield sites, while copper - presumed to be from the Lake Superior region - has been found on the Plains (Wright, 1995:291.292).

[55] Brandzin-Low (1997:133) has surveyed the existing data on Laurel sites from northern Manitoba and Saskatchewan and states that 83 sites with identified Laurel pottery have so far been found north of 55°30' N in these provinces.

[56] Most of the most northerly finds of Blackduck ceramics in Manitoba were only 'isolated' potsherds (Lenius and Olinyk, 1990:79). Because they lacked association with a definitive Blackduck artifact assemblage that would indicate presence of groups of these people there, it has been suggested that the ceramics represent the marriage of women of the Blackduck culture to men farther north, rather than expansion of the Blackduck peoples into north-central Manitoba (Pettipas (ed), 1989:62; Wright, 1981:94). In this case, these women could still influence the northern cultures with ideas brought with them from their own. Sporadic trade and other contact between the Laurel and Blackduck peoples could also have resulted in the odd Blackduck pot making its way into Laurel territories, including north-central Manitoba. Again, such contact would result in some exchange of ideas and technologies which could lead to changes in the Woodland cultures.

[57] Lenius and Olinyk (1990) have discussed the development of the new pottery styles and the associated cultures out of the merging of Laurel and Blackduck traditions. Sometime around 1000 years ago, two different culture composites began to show up in the archaeological record: the 'Rainy River Composite' and the 'Selkirk' composite (Lenius and Olinyk, 1990:82,83,101). The Rainy River composite (including the 'Winnipeg River', 'Bird Lake' and 'Duck Bay' pottery-making traditions) is more common in the southern parts of Manitoba - found only as far north as The Pas (Lenius and Olinyk, 1990:84) - and has been suggested to represent the Late Woodland cultures of the Ojibwe peoples (Lenius and Olinyk, 1990:101; Wright, 1971:23; 1981:94). The Selkirk composite includes several regional variations as well, including 'Kisis' in north-central Saskatchewan, 'Pehonan' and 'Keskatchewan' in the Saskatchewan River Valley, 'Clearwater Lake' in central Manitoba and Saskatchewan, and 'Kame Hills' in and adjacent to the Southern Indian Lake region (Gibson, 1998:16,17,213-215; Meyer and Russell, 1987:5). In Manitoba, Selkirk ceramics are found mostly in the northern half of the province (Meyer and Russell, 1987:8). It is believed, based on the distribution of Selkirk sites and the presence of Selkirk pottery types on sites associated with Cree people during the Fur Trade, that Selkirk ceramics were made by the Cree of the Late Woodland period (Hlady, 1970:121; 1971:64; MacNeish, 1958:47-49; Meyer, 1987:187,192,194,196; Meyer and Russell, 1987:25,26; Wright, 1971:21,23; 1981:92).

[58] At the time that Europeans first came to the Manitoba region, Woods Cree appear to have occupied a range encompassing the boreal forest from James Bay westwards to Lake Athabasca, and from Lake Manitoba and Lake of the Woods north to the limit of the full boreal forest, north of the Churchill River (Jarvenpa and Brumbach, 1984:152; Meyer, 1987:192). The Hudson Bay Lowlands appear to have seen comparatively little use by the Cree, or by other Nations, due to the relatively poor fishing and hunting

available there, and the difficulty of the rivers for canoe travel (Feit, 1969:49,54; Russell, 1975:424,425; Wood, 1983:65).

Lister (1988), however, has argued that the Hudson Bay Lowlands of northern Ontario had been used by some people in both summer and winter, and that the people sustained themselves primarily through fishing in this region. At least some Cree were obviously visiting the west coast of the Bay as well (at least occasionally), as it was at the mouth of the Churchill River that Henry Hudson accidentally encountered Cree in 1611 A.D. (Alcock, 1916:433).

[59] Long-distance trade through North America is evidenced in Manitoban sites from as early as the Middle Woodland culture period (Manitoba Heritage Network, 1998; Riddle, 1994b:25; Wright, 1981:90). Trade between regions also occurred on a slightly smaller scale during the Archaic culture period: Copper, for example, was traded out onto the Plains from Lake Superior at this early time (Wright, 1995:291,292,328).

[60] Inuit lamps are typically made of stone, but have also been made from clay (Hart, 1994; Wood and Wasnick, 1976:5). It has been concluded through isotopic analyses of residues on the Kame Hills plates/lamps that significant amounts of fat or oil were burned on these vessels, although whether the residues were the result of use of the vessels as either frying pans or oil lams, or both, could not be determined (Sherriff et al., 1995:109).

[61] Even the number of Taltheilei projectile points left behind along the shorelines in north-central Manitoba may be greater than previously thought. Since the beginnings of the Churchill River Diversion Archaeological Project, the number of Taltheilei artifacts identified in north-central Manitoba has grown significantly. As late as 1990, only four sites in the CDAP study region had been determined to have evidence of Taltheilei occupation (Kroker, 1990:154). In contrast, Larcombe's analysis of all of the identifiable projectile points recovered during CDAP activities (1997) identifies twenty-two sites in which projectile points appear to be of the Taltheilei tradition. In part, this is due to the vast increase in artifacts recovered during the CDAP activities of recent years. But also, there has been considerable difficulty in identifying Taltheilei points in Manitoba: until recently they were regularly mistaken for certain Plano projectile point styles which they closely resemble except in the grinding of their bases (Kroker, 1999: personal communication; Larcombe, 1997b:87).

[62] The subarctic regions have been conservatively estimated to have been home to more than 30,000 people at any one time (Kroeber, cited in Rogers and Smith, 1981:141), but these numbers were not evenly distributed. Among the Western Woods Cree alone, there may have been 20,000 or more individuals at the time of contact (Smith, 1981a:267), while there may never have been much more than 4000 or so members in the Dené bands of northern Manitoba and Saskatchewan (Smith, 1981b:274,275). Population density in the boreal forest also varied from region to region, greater in the western full boreal forest than in the Hudson Bay Lowlands or the northwestern transitional forest, and perhaps lowest in Labrador. The eastern Dené rarely had a population density greater than one person per 160 km^2 (Smith, 1981b:275). On the other hand, there may have been as little as ten or less square kilometers of space per person in the Berens River region (Rogers, 1966:32), and in particularly productive areas this density could easily have been even greater.

[63] The Hudson Bay Company trader James Isham claimed that the Natives did not hunt waterfowl in the days before firearms (Rich, 1949:117), but it is evident that they did: waterfowl hunting is the theme of several stories recounting events of long ago in the Cree past (e.g. "Wee-sa-kay-jac with the Canadian Geese" in: Ray and Stevens, 1971:40,41), goose and duck feasts were an important ritual of the Cree that were commented on by the earliest European explorers and traders (Meyer, 1975:435), the Cree were already skilled in hunting waterfowl when the early trade posts first hired them to hunt geese in the spring (Hearne, 1971[1795]:25; Russell, 1975:42), and the bones of geese, ducks and swan are all found in archaeological assemblages of north-central Manitoba (Orecklin, 1976:17). It is possible that waterfowl hunting may have increased in importance with the fur trade (this coinciding with the introduction of firearms), especially among the hunters for the Bayside posts (Honigmann, 1981:223), but there is little reason to believe Isham's claim that waterfowl were not hunted previously.

[64] Fur Trade journals have been used as sources of information on Aboriginal land use possibilities. It should be noted that the journals of Indian Lake House (cited as HBCA, B.91) do not always distinguish

between Cree and Dené visitors to the post. Since both were using this post in the early years after its establishment, references to what the 'Indians' were doing at any given time do not necessarily always refer to Cree behavior. However, the Dené trading at Indian Lake House had by this time adopted a more Cree-like adaptation to the boreal forest. It is reasonable to suggest that, with few exceptions, both Cree and Dené visitors would be carrying out the same sorts of activities at roughly the same time. References have been selected for this thesis with some care to not attribute a behavior to Cree people that was not theirs, but errors are certainly possible. Statements which are supported only by Indian Lake House references, if not supported by other observations, should be treated as hypothetical.

[65] Sturgeon in particular was a highly valued fish - important not only for its rich meat but also for the large amounts of oil which could be rendered from its flesh, and for its useful skin which was often made into containers (Hannibal-Paci, 1997:80; Holzkamm et al., 1991:125).

[66] The extent of food preservation by Cree people prior to adoption of the fur trade economy is not clear. It is certain that some food surplus would be preserved with each harvest, as fresh meat will spoil within days if not dried or frozen, and berries could be an important nutritional supplement to the winter diet. Brightman (1993:357-365) has argued that the intensive preserving and storing of food in times of plenty to be saved for future, leaner seasons may have been less common traditionly than during the fur trade. With the later fur trade, game was becoming increasingly scarce and families were travelling over smaller ranges through the winter, making caches of food both more accessible and more vital. "Prehistorically and during the early food [sic.] trade, resources were probably obtained with sufficient predictability to make intensive food storage unnecessary to group survival" (Brightman, 1993:365). Rather, "(t)he preferred strategy was to live on fresh meat, preserving only what was necessary to ensure against death by starvation and eating the rest at once" (Brightman, 1993:363). This is reflected also in Mason's assessment of the Swampy Cree: "Lacking foresight in times of plenty, the Cree rarely put in a store of food for the dreary winter that followed. An exception to this was the occasional preservation of meat and fish by drying and smoking near a fire" (1967:12). Brightman points out in his arguments that it is less likely a lack of foresight, as a lack of true need that kept the Cree from setting up stores of food of a quantity to last all winter long.

Large amounts of meat, fish, berries and tea greens may or may not have been preserved and carried or cached traditionly, but at least some probably were.

[67] Although squirrel were not considered suitable food for adults when other game was available, they could be taken quite regularly by children who often practiced their hunting and trapping skills on the abundant little noisemakers, and were sometimes eaten by them (e.g. Rogers, 1973:54). Squirrel bones found in archaeological sites should not too quickly be dismissed as 'intrusive' or 'noncultural'.

[68] Regardless of how specialized the Edthen-eldeli Dené caribou-hunting economy may have been, Hearne (1971 [1795]:213) noted in 1795 that the Chipewyan were "as fond of variety as any people whom I ever saw", and that they enjoyed the odd dish of fish, fowl, and other game and plant foods for a change of pace, even when there was plenty of caribou around.

[69] Among the Dené that Hearne was travelling with, few liked to kill either wolf or wolverine for food or furs, "under a notion that they are something more than common animals" (Hearne, 1971 [1795}:209).

[70] Like the Cree, Dené probably hunted waterfowl traditionally; they were already skilled in hunting geese during the early fur trade, while on the other hand they were rather poor moose hunters owing to their lack of familiarity with the latter (Gillespie, 1976:10).

[71] Several birds less often mentioned in discussions of subarctic peoples' diets have also been included by Hearne as passable to esteemed foods among the Dené: eagles, hawks, owls, ravens and crows, cranes, loons, gulls, pelicans and swans (1971 [1795]:399-435). Cree quite likely also made use of these from time to time as well.

[72] When stands of birch trees were found, Dené made certain to note the location and, whenever possible, collected the bark in such a way that the tree could continue to live (Andrews and Zoe, 1997:168,170).

[73] Birket-Smith (1930:76) stated that the Chipewyan (Edthen-eldeli Dene) did not possess or use many herbal medicines, relying instead primarily on shamans for healing. Yet among the Dogrib, who live in a similar environment as the Edthen-eldeli, numerous plant remedies were known and used day-to-day for

common ailments and shamans were resorted to only when these herbals and other well-known treatments failed (Ryan, 1994:42). Fewer medicinal plants may have been available, but those that were used for a wide variety of ailments (see Ryan, 1994:48-60) and should not be underestimated. Likely, the same could have been said for the Edthen-eldeli.

[74] Similarly, drive lanes may have been constructed in such a way that they would lead into a landscape or topographical feature which naturally helped to impound the caribou. Petch (1997b:81), for example, noted that a major drive lane on the Robertson Esker (northern Manitoba) appeared to lead into a maze of sand dunes, and that the dune landscape may have been used as part of an impoundment; the Taltheilei hunters were probably taking advantage of natural features.

[75] When made by Dené, the poles, brush piles, etc. used to make these drive lanes might be placed fifteen to twenty meters apart in line (Hearne, 1971 [1795]:79). However, once herded into the wide end of the drive lane (which was wide enough at the end of the long, funnel-shaped lane to not be conspicuous), the caribou generally stayed between the lines. Flags that would flap in the wind were attached to sticks along these lines, and this flapping would scare the caribou away from the edges of the lane, preventing their escape (Hearne, 1971 [1795]:321; Legat, 1995:5,6).

[76] It has been said, however, that the use of drive lanes for herding caribou was only truly effective during their spring migrations. In this season, the high winds and the glare off the snow and ice could sufficiently confuse the caribou into mistaking the drive lanes for natural boundaries, and made them more easily frightened so that they would be readily herded (Legat, 1995:6). To hunt caribou communally in seasons of open water, people more often took advantage of the tendency for caribou to cross larger water bodies at predictable, narrow crossing places. At such locations, the hunters could wait in hiding and ambush the caribou, spearing them from canoes when they swam across (Birket-Smith, 1930:32,33; Brightman, 1993:8; Helm, 1988:14; Legat, 1995:7; Mason, 1967:12; Smith, 1982:14,15).

Unfortunately, many references are quite vague as to the season of use of drive lanes and corrals for hunting caribou (e.g. Brightman, 1993:8; Harper, 1955:51,52; Heffley, 1981:137; Sharp, 1977:39), and this point may be subject to debate. Regardless, there are at least some references to the use of drive lanes and corrals by the Cree and Dené for hunting caribou at times other than the spring migration (e.g. Birket-Smith, 1930:21; Gordon, 1990a:289; Hearne, 1971 [1795]:320-322; Heffley, 1981:137; Kelsall, 1968:214; Smith, 1982:14,15), especially in the late fall/early winter (e.g. Kelsall, 1968:214; Minni, 1976:75; VanStone, 1974:24), although its use for the spring migration still seems to be the most common.

[77] Although there is debate regarding whether gill nets were used traditionally by the Cree, they were apparently used for as much as the last 1200 years by numerous groups in the subarctic regions, including the Dené (Birket-Smith, 1930:28; Cleland, 1989:605; Martijn and Rogers, 1969:96; Rogers and Smith, 1981:134; Rostlund, 1952:84,85). There is some archaeological evidence for gill net technology by the Cree at Southern Indian Lake (Mallory, 1975:4,5), and it will be presumed here that those Cree did use gill nets traditionly.

According to Dené elder George Blondin (1997:22,23), "The only problem was we had such poor materials to make nets; you had to twist willow bark into thread and weave it into a net that was ruined if you let it dry out or freeze. You had to keep it in water all the time. Only hardworking people had long fish nets and they were always busy repairing them or making new ones." For these reasons, it seems likely that if, under local conditions, other methods of taking fish could provide the people with enough food, the use of gill nets for fishing would be reduced or absent, although not necessarily unknown.

[78] For example, Burch (1971:149) found in his experiences with Alaskan Inuit that people would avoid what would otherwise be excellent hunting or fishing sites because of their knowledge that these specific sites were inhabited by monsters, hostile ghosts, and similar beings. It might be that rumour of dangerous beings at such sites would only have significant influence on people's movements and land use when they were finding sufficient food and materials elsewhere (W. Koolage, 1998: personal communication; e.g. Blondin, 1990:92), but there is still some influence exerted on people, all the same (e.g. Flannery, 1995:40,41).

[79] Steinbring proposes that rock paintings in the forests of Manitoba may date back as early as the Archaic archaeological period - possibly dating to as early as 2500 B.C. in the southern forests, and spreading slowly through the north over the generations following (Steinbring, 1998:50,130).

[80] Ellen Smallboy, a Swampy Cree woman born in the 1850s, remembers having buried her father in clay soil (Flannery, 1995:13).

[81] Drum dances do not appear to have been reserved for any particular time of year in the way that one of the most important community ceremonies of the Cree - the Goose Dance - were, but rather could have been held whenever a gathering of people took place.

Blondin's descriptions of the drum dances refer to those practiced by the Dogrib. The eastern Dene peoples also had sacred dances, however, and these were apparently quite similar to those of the Dogrib leading Samuel Hearne to suggest that the Chipewyan's dances must have been borrowed from their western neighbours (Hearne, 1971 [1795]:334).

[82] For example, at a sacred site in the Dogrib territory between Great Bear Lake and Great Slave Lake, Dogrib people (another of the Dené nations, they were the western neighbours of the Chipewyan) would climb a large bedrock hill, at the top of which they would make an offering and then drop a stone into a crack or crevasse. If the stone could be heard hitting the water at the bottom, it meant that that person would live a long life (Andrews and Zoe, 1997:167).

[83] There are also infrequent references to Dené placing their dead up on scaffolding and sometimes cremating them, but it is thought that these were probably not common practices among most northern Athapskan groups (Ward, 1995:102).

[84] By 1682, there was enough interest in trade with the Cree west of Hudson Bay that three separate trading companies constructed posts near the Bay: the HBC on the Nelson River, near its mouth; the French nearby on the Hayes River; and New England traders on Gillam Island in the Nelson River. Both the New England and the English posts were destroyed by the French the next spring, the HBC quickly building a new post on the banks of the Nelson (McCarthy, 1987:2; Smythe, 1968:78). This set the pattern for the next 30 years, control of the gradually increasing trade at the Bay shifting regularly between the HBC and their French rivals. As a result, Cree coming to trade at the Bay could never be certain of who would be there to receive them and the trade was erratic at best (Russell, 1982:97,98). In spite of this, people continued to come as trade goods grew in appeal.

In 1713, under the Treaty of Utrecht, European control of the trade at Hudson Bay was ceded to the English, giving the HBC a monopoly along the coast, while their rivals controlled the fur trade in the Great Lakes region. The western interior, however, was left open for competition and exploration by both the French and English increased (Mason, 1967:7; Tyrrell, 1934:3).

[85] The hunters among homeguard groups were important as post provisioners. The women, in addition to snaring game and tending fish nets for the posts, provided a vital domestic labour force, and in the early days of the trade were commonly employed by their fur trade husbands as guides and interpreters (Brown, 1980:64-66; Van Kirk, 1980:53-63).

[86] It is unlikely that the Cree and Dené were in competition over furbearers or trade goods per se, as at this early point the furbearers and large game of the northern boreal forest remained reasonably abundant (Brightman, 1993:266), and relatively few Cree and fewer Dené were trapping or hunting for trade. However, the inland Cree held a lucrative position in their role of middlemen for the trade, and they no doubt wanted as few outsiders as possible coming in to trade directly at the posts, thus by-passing the Cree profiteers.

[87] The competitive nature of the early fur trade kept the prices for trade goods comparatively 'low' until the 1820s. Thus, it took relatively little intensification of furbearer hunting and trapping to provide the furs needed for people to acquire the limited trade goods which they desired in these times. Regardless of the scale of change, there was some increase in furbearer taking following the opening of inland posts, at least among those who had previously been middlemen in the trade (Brightman, 1993:245,260,299; Ray, 1974:69).

[88] The XY Company, 'Sir Alexander MacKenzie and Company', set up in opposition to the HBC and NWC in the years between 1794 and 1804, at which time it was absorbed by the NWC (Brown, 1980:39; Klimko, 1982:135).

[89] The multitude of trade posts built during the period of inland competition can be seen, for example, in maps drawn by the explorer Peter Fidler between A.D. 1790 and 1809. In his maps of the middle Churchill River region (c. 1807), both abandoned and occupied posts are indicated all along the river, adjacent lakes, and on tributary rivers and streams (HBCA, E.3/3).

[90] Smith (1981b:273) states that the Chipewyan monopoly on the northwestern trade ended as early as the late 1700s when free traders first entered the northwestern interior. Blondin (1997:31), however, maintains that although Fort Chipewyan was established in 1788 at the east end of Lake Athabasca, the Dogrib and other northwestern Dené groups were not able to deal directly with the trade companies until some time into the 1800s because the Chipewyan were unwilling to relinquish their middleman position.

[91] In the New Churchill district of Manitoba (the region between the Churchill and Nelson rivers), only five HBC posts were left at the end of 1821: Indian Lake House (on Southern Indian lake), Reindeer Lake, Nelson House (on Threepoint Lake), Setting Lake and Split Lake (Alcock, 1916:439; Tyrrell, 1917:381).

[92] With the establishment of a Registered Trap Line system throughout northern Manitoba by 1942 (Hrenchuk, 1991:5) and with increasing pressure to enroll children in school after World War II, these new, more sedentary settlement patterns became almost mandatory (Helm and Leacock, 1971:361; Helm et al., 1981:149).

[93] For example, successful trade posts were established for the Dené at the east end of Lake Athabasca in the early 1800s. Dené did come to trade at these posts but the location was a place with abundant caribou and fish resources, and was one which they regularly visited in the winters already. When the posts were abandoned and the trade moved to Fort Chipewyan, most of the Dené traders ceased to come so regularly to the posts (Minni, 1976:60).

[94] Although Irimoto (1981a:15,16) was describing this pattern of both summering and wintering within the forest nearby posts as being practiced by some Chipewyan families in the period of c. 1920-1945, there were probably at least some families making this transition to summering south of the treeline somewhat earlier, although not in any great numbers.

[95] Smith notes that the Edthen-eldeli Dené, in contrast to the more westerly Chipewyan and other western Dené groups, were not more than marginally involved in the fur trade until the beginning of the twentieth century (1981b:275). The other Chipewyan peoples, although similarly marginal during the earlier fur trade years, tended to become more involved near the end of the eighteenth century, with the intensive inland competition period that increased the profits of trade around the same time that it took away their middleman position (Smith, 1981b:273).

[96] The date marking the end of the Late Woodland period, the end of the Precontact, is imprecise. The earliest regular contact between Aboriginal people and the European newcomers west of Hudson Bay - the beginning of the postcontact period - did not occur until A.D. 1682, with the establishment of fur trade posts on the Nelson River. However, effects of the European fur trade on the St. Lawrence River could have been felt in this region decades earlier (for example, through peoples' involvement in indirect trade). This transitional period, during which regular contact had not yet been established but effects of the Europeans' presence to the east could be detected, is called the Protocontact Period. This period will be considered under the Early Fur Trade reconstructions (A.D. 1668-1820), but its precise age and duration in the study region is not yet well understood.

[97] Barren ground caribou migrations are defined in spring by a shift from nomadic off and on wandering of the dispersed caribou to a more directional movement of aggregating caribou towards their calving grounds with little or no interruption to the migration once it has commenced. Typically, this uninterrupted travel begins between mid-March and late April, depending largely on the weather (Kelsall, 1968:138). "The tendency is for caribou in the areas most remote from the calving grounds to start migration first, and for the beginning of movement to become progressively later towards tree-line." (Kelsall, 1968:139). At least a portion of the herds have usually reached the treeline by early May, and the calving grounds are normally

reached by the pregnant cows by late May or early June (Kelsall, 1968:139).

[98] It is often said that the only time barren ground caribou hides are suitable for clothing, tent covers and other items requiring unblemished hides is in the late summer through early fall (before the warble fly larvae infesting them hatch and bore holes through the skin, but after holes from the previous year's infestation had healed) (Blondin, 1997:206; Burch, 1972:362; Driver, 1990:19; Harper, 1955:57; Kelsall, 1968:274). However, if there was need for rawhide or other small, less fine hide items, the spring caribou hides would probably have been useful at least for these and might have been used if not enough moose had been killed to fulfill these needs.

[99] The families most likely to be able to retrieve cached canoes and other summer equipment were those who spent the winter in pursuit of animals that were fairly predictable in their movements and did not range too far over the winter months, allowing the families to be able to predict where the break-up would find them - this being not too far from where they had spent the freeze-up. This might include people who spent winter living off of moose, woodland caribou, fish and smaller game. In contrast, those farther north who had the opportunity to live off the ever-moving barren ground caribou could not predict where they would be come spring, and more often had to construct new canoes (Taylor, 1980:17). Regardless of where a family was at break-up, however, new canoes would have to be made from time to time, as the seasons of use and storage took their toll on their construction. Samuel Hearne once remarked that "...the best Birch Rinde Cannoe that can be built will not last longer then one Year." (Tyrrell, 1934:189), and although this may reflect the greater loads that canoes carried during the fur trade, it is still unlikely that the same canoe could be re-used for more than a couple of years.

[100] If a family used dog teams to pull the toboggans in the winter, the dogs would be left in the spring at a place where they could be retrieved come the fall, and checked on and maintained through the summer (usually on an island) (Sharp, 1977:38). This would, however, constrain the summer movements of the family considerably and it is likely that most did not keep more than one or two dogs which they could take with them in the summers, if they kept dogs at all.

[101] The cleaning and smoking of fish may have been done by the women either at the fishing site - if this was not too far from camp - or back at the camp itself. Meyer (1985:213), describing the fishing practices of the Red Earth Cree in the later fur trade years, notes that people tried to stay away from the weirs in between clearing them out, in order to not scare the fish away. Presumably this would mean that any processing of the fish would have to be done some distance from the fishing site - likely on the downwind side of camp.

[102] Brandson (1981:16), Smith (1981b:279), and B. Anderson (in Bussidor and Bilgen-Reinart, 1997:16) refer to most hidework being done in the colder months, while Nickels (1997) expected that the warmer months were the time for the majority of hide work. It may be significant that the former are referring to Dené practices and the latter to Cree, but it is more likely that hide work could be done at any time of the year, certain steps of the process sometimes being left for later seasons when the work would be made easier -the unfinished hides bundled up and taken along or cached when camp was moved - and that the periods of greatest hidework activity occurred at the times that the largest number of mammals with useful skins were being taken. This seems to be the case for the recent Mistassini Cree as depicted by Rogers (1973:27-31): the initial processing of hides (freezing and scraping, or soaking, scraping and drying) was done at whatever time of year they were procured, although freezing temperatures made this initial scraping easier; the best time to complete the process (re-scraping, drying, stretching and tanning/smoking) was during the late spring or early summer months (May-June), although again the hides could be tanned either in summer or winter months as necessary.

[103] The time of year at which such journeys were made and when the meetings occurred may have varied, depending on the convenience of where they would each normally be at that time, when they would have items to trade, and when it was a good time for travel and at least small gatherings. Although such travel and trade is likely to have occurred primarily in the warmer seasons, from late spring to the fall, it may not have been restricted to these seasons. For example, if Rock Cree and eastern Dené people wished to trade with each other, it seems likely that they would have met during the winter months, when the Dené were further south and thus closer to Cree territory.

[104] Most historical and some modern references do not distinguish between Barren ground and Woodland Caribou. There are records of Cree waiting for migratory caribou in mid-August on the Churchill River (e.g. HBCA, B.83/a/2:4), and though some barren ground caribou do at times range up to 100 or miles south of the treeline in the late summer before turning back for the rut (Kelsall, 1968:64), these could also possibly have been a Woodland herd. Orecklin (1976:75), citing Mason (1967:12), refers to a northward migration of caribou through the Wapisu Lake area around early August, which is like the limited migration patterns of Woodland caribou (Parker, 1972:18), but again could possibly be the return north of an advance guard of barren ground caribou. Regardless of which types of caribou were being referred to specifically, in each of the references cited the manner of hunting the caribou was the same: migrating caribou were ambushed by waiting Cree at water crossings. This means that at least some caribou were migrating in the region in the earlier fall, and so could be mass harvested at this time.

[105] Based on fur trade records, authors like Mason (1967:12) and Brightman (1993:357-365) have argued that although the Cree have in recent times conscientiously preserved and stored surplus foods for leaner seasons, this practice was far less common or intensive in the earlier days of the fur trade and probably not before: "The preferred strategy was to live on fresh meat, preserving only what was necessary to ensure against death by starvation and eating the rest at once" (Brightman, 1993:363). Whether or not food preservation was previously as important as it became with the changing economy, it was still practiced to some extent, and the fall would likely have been one of the most important times for building up stores of food.

[106] In most years, the Kaminuriak herd had crossed the treeline by the end of October - although sometimes this did not occur until as late as December (Harper, 1955:18; Kelsall, 1968:142). By late November or early December they would normally have migrated as far south as they would go in that winter, and would turn more westwards to travel on towards their winter ranges at a "more leisurely pace" (Kelsall, 1968:132; Parker, 1972:47), the populations beginning to break up for the winter months at this point. The actual path taken by the migrating caribou could be difficult to predict as these could vary considerably from year to year. Caribou could keep to the same path leading to the same wintering grounds for a number of years, and then suddenly switch (Burch, 1972:351,352).

In the past century, although there have been numerous variations, the migration path of at least part of the Kaminuriak caribou population has been recorded to have regularly brought herds past the northern end of Southern Indian Lake sometime during the freeze-up - around the beginning of November (McInnes, 1913:116; Wood, 1983:21). From there caribou would continue on southwestwards, often down the western shore of Southern Indian Lake through the climax black spruce forest areas which the caribou need for feeding in, until at least half-way down the length of the lake, where many would turn westwards towards Reindeer Lake. When the population was quite large, others might continue southwards yet farther. There were regularly at least some caribou which stopped to winter around Southern Indian Lake, especially in years that early heavy snows forced the caribou to retreat northwards where snowfall was generally less (Harper, 1955:7; McInnes, 1913:116; Parker, 1972:22; Simmons et al., 1979:7; Wood, 1983:21).

[107] In the references cited, the winter hunting groups range in size from single nuclear families to up to five related families (Hallowell, 1992:44; Meyer, 1985:213; Tanner, 1979:22). These refer to winter groups involved in furbearer trapping for trade or sale, however. Brightman (1993:11) notes that group size tends to increase through the winter after the early winter trapping is replaced by hunting as the dominant economic activity, so it may be reasonable to expect that except in those times that food resources were very scarce and dispersed, winter groups would not have been so small in pre-fur trade days as those more recently.

[108] There is some debate among informants as to where water was procured in the winter months. Some say that melting snow was the most common practice and that water was very rarely taken from holes made in the ice (Glover, 1962:36; Honigmann, 1956:40), while others insist that melting snow for water was avoided as much as possible, and that people preferred to take water directly from streams or springs (Rogers, 1973:75). No doubt people would have used whichever of these sources of water was most convenient and potable at the time.

[109] Barren ground caribou have in the past often migrated past Southern Indian Lake, sometimes reaching even its south end before turning westwards, sometimes wintering in the area (Hanna, 1975:10; Riddle,

1994a:18; Parker, 1972:22; Wood, 1983:21). A site nearby the South Bay Narrows is called *Oponapiwiwinihk* ("wintering camp"), because the plentiful caribou and fish regularly found in that area during the winters made it an attractive wintering place (Linklater, 1994:90).

[110]Among the Dené, each regional band tended to be spatially associated with a particular breeding population of the barren ground caribou. For example, the eastern Edthen-eldeli Dené were most concerned with the Kaminuriak caribou population (Gordon, 1975:75; 1981:3). Local bands often concentrated on the movements of specific 'herds', or fluid sub-groups of the larger populations. Each of these wintered in different locations within the northern forests and followed different migration paths (see Parker, 1972:22,23), and different groups of people's movements were normally within these different herd areas (Gordon, 1975:76).

[111] References to more recent Caribou-eater Dené caribou hunting and settlement strategies (e.g. Birket-Smith, 1930; Irimoto, 1981a; Sharp, 1977; Smith, 1978) as direct analogy for patterns in the past may be misleading in certain details. As pointed out by Gordon (1990b:400), the people who have been the subjects of these ethnographic studies have already been impacted to some extent by the fur trade and later developments and live most of the year in communities situated south of the treeline. For people not actively following the movements of the caribou, it was a more effective strategy to anticipate the travel routes of migrating caribou and to ambush them at strategic locations which the hunters had reached ahead of time. They would focus on other sources of food, including dried or frozen caribou meat, at other times of the year. Gordon argues, however, that because in previous times people were more mobile and travelled seasonally from taiga to tundra, they were more able to 'follow' the caribou throughout the year rather than waiting mainly for the herds to cross the treeline in the spring and again in the fall (1990b:400).

Gordon does not deny that the opportunity to hunt the great concentrations of caribou presented to the Dené during the migrations would have been important before the settlement of year-round communities (1989:69), although he does expect that only the southward migrations would have been intercepted and mass harvested regularly (1975:72; 1981:3; 1990a:289; 1990b:400). Rather he asserts that *in addition to* these mass harvests, Dené families would also continue on to follow the caribou well out onto the barrens in the summer and into the forest in the winter, hunting these animals whenever they were encountered (1989:69; 1990b:400), and this is reflected in the assertions of the Dené elders who say that they were once just like the wolves, always following the caribou (Petch, 1997b:74), as well as in the writings of early observers like Samuel Hearne (e.g. 1971 [1795]:14,35,39,42,69,78-80,83,85,86-87,117,119,142,195,201, 204,222,283,286,320).

Even Burch, who once claimed that because people cannot easily keep up with caribou on the move, the Aboriginal peoples of northern North America would not have followed caribou year-round but instead hunted them only seasonally (1972:344-345), soon modified this assertion when applied to the Caribou-eater Dené. Although his 1972 claim "still carries the aura of revealed truth in some circles--at least with regard to following the herds" (Burch, 1991:439), he himself has long accepted that although people might not always be able to accompany migrating caribou step for step, the Dené could at least follow close enough behind to reach both the summer and winter ranges in time to find and hunt caribou in these places as well as sporadically while travelling between them (Burch, 1991).

[112] Dené seem to have rarely travelled along river systems prior to the later fur trade. This was most likely because so few of the northern rivers flow in the directions travelled by Dené between the transitional forests and the barrens (roughly north-south in the eastern Dené territories) in the first place. This is probably another reason why the Dené did not use canoes for travel traditionally, and why they frequently hunted on the ice but travelled over it less often than did the Cree.

In the winter, in those instances that the rivers or lakes did allow them to travel in the desired direction, Dené travellers might walk over the ice for days at a time (e.g. Hearne, 1971 [1795]:211,212,282).

[113] Among the Dogrib, at least, lake narrows appear to have been particularly common sites for constructing drive lanes for the spring caribou hunts (see Legat, 1995:Appendix 1).

[114] Burch (1972:364) has argued that the path of caribou migration can be highly variable, so hunting sites are unlikely to have been regularly re-used in consecutive years. If sites have been re-used by hunters, he expects that the occupations would be separated by several years or even generations more often than not.

In contrast, Gordon (1981:3) suggests: "Migration through the same river valleys and across identical water crossing are highly reliable. Terrestrial factors such as topography, vegetation, old caribou trails, and snow (spring migration); purposeful movement along a basic pattern and an accurate spring heading for the calving grounds by pregnant cows (Kelsall 1968:106,110,114) appears to govern this reliability." Kelsall, in his monograph, recognized this paradox: although the same migration trails do tend to be re-used regularly, the actual path taken by the caribou in any one year can still be quite unpredictable (1968:107). It seems likely that the same strategic sites could have been used for hunting the caribou any year that they travelled that same path, and that this would have happened fairly frequently, but not necessarily reliably.

[115] Mass harvests of caribou appear to have been more common during the late summer and fall seasons than in the spring (Burch, 1991:442; Gordon, 1975:72; 1990a:282; 1990b:400; Hearne, 1971 [1795]:195; Sharp, 1981:233), although it is possible that when conditions were opportune, large groups could similarly come together in the spring to ambush caribou, as reconstructed by Smith (1978). The co-operation of several families for the communal spring hunts of caribou was important in the memory of Dené elders (e.g. Andrews and Zoe, 1997:167-168; Legat, 1995), and in some places, these hunts could conceivably be quite extensive: "... a migrating herd may be over 200 miles in length and movement through a given point may take several weeks" (Kelsall, 1968:139).

[116] Social motivation for band gatherings may not have been quite so pressing for Dené as they could be for the Cree since families of Edthen-eldeli Dené tended to be in relatively constant contact through their regular visiting even when dispersed in the bush or out on the barrens, this being how they kept informed of the movements of the caribou throughout the year (Smith, 1978:81,82). However, the gathering of a local band probably remained important for helping to maintain a sense of community identity, for more efficient planning sessions, for the drum dances, and so on.

[117] The barrens, being so open, were too cold to travel over through much of the spring, and break-up was often underway on the rivers, at least, by the time the Dené crossed the treeline (Hearne, 1971 [1795]:17,28,119). However, the lakes could remain frozen and safe for some time - sometimes well into July (Hearne, 1971 [1795]:118,135).

[118] Among at least some groups, however, fat was considered to be bad to eat much of in the summer, and lean meat was regularly eaten (e.g. Blondin, 1997:73).

[119] It has been estimated, for example, that an average of eight to ten caribou hides were needed to make just one adult's winter outfit, anywhere between about 20 and 70 hides to make a tent cover, and many more for various other important items (Hearne, 1971 [1795]:50,196; Kelsall, 1968:211; Smith, 1982:8).

[120] In some years and some places, some of the caribou aggregated along the treeline would migrate into the forest for some distance, returning northwards for the rut around the end of September (Harper, 1955:18; Irimoto, 1981a:15; Kelsall, 1968:64,107,128). This advance penetration was quite common in some regions, such as the Duck Lake region in recent years, but elsewhere was not very predictable (Kelsall, 1968:64), and most caribou did not cross the treeline until the first heavy snowfalls in late fall to early winter (Kelsall, 1968:109,171). Consequently, the Dené's early fall hunts of caribou were likely north of the treeline for the most part. Even on the barrens, however, they certainly would have taken advantage of the concentrations of caribou presented by these early, pre-rut migrations when they occurred (e.g. Irimoto, 1981a:15).

[121] For example, whitefish, which were particularly enjoyed by Dené, could be caught in great numbers at this time of year in weirs and traps set between sets of rapids (Blondin, 1990:55).

[122] Gordon (1990b:400) claims that there is no archaeological evidence for the Dené having built caches while on the barrens.

[123] The hides would be scraped and washed almost immediately after the hunt, but were often put away after this was done until later in the fall when the weather turned cold. The cold air would freeze the soaked hides, drying them quickly (Bussidor and Bilgen-Reinart, 1997:15,16).

[124] At such places as shallow bays and small creeks and streams, the time between open water that could be crossed by boat and the time that the ice became safe for adults to walk across could be only a matter of

days, as opposed to the weeks that people often had to wait before they could once again cross the main bodies of large lakes or rivers (Penner, 1974:7).

[125] Although not suitable for clothing, the early winter hides of the caribou could still be used for making thong which had many purposes (Hearne, 1971 [1795]:197).

[126] Peter Fidler's guides had destroyed their canoes at freeze-up to ensure that no-one else could use them if they were unable to return in the spring (Tyrrell, 1934:514). This was during the period of intensive inland fur trade, however, and this behavior may have been a result of the highly competitive nature of some peoples during this time.

[127] Travel farther south into the full boreal forest was probably not very common for the Dené, however. It has been observed that while caribou bulls often migrated farther south into the forests, the cows typically remained quite near the treeline (Smith, 1978:71,82). Because the bulls lost most of their fat during the fall rut, they were very lean during the winter months and thus less desirable than the cows which could sometimes remain fat until the spring migration (Kelsall, 1968:41). For these reasons, it is expected that in a typical year Dené families would prefer to remain near the treeline, focussing on the more concentrated and fatter cows. This would also allow them to be closer to the barrens to which they would have to travel again in the spring, and also to avoid the Cree who were more likely hunting the more scattered caribou bulls when they hunted barren ground caribou at all.

[128] That large groups could still winter together under certain conditions is evident in Hearne's reflection on his travels during the winter of 1771-72; he noted that there had rarely been less than 200 individuals with him through the whole winter's journey (1971 [1795]:279,280). How common such large winter groups would have been under 'normal' conditions in the days prior to the fur trade is unknown. Hearne's destination of the Coppermine River had initially attracted a large number of Dené men to accompany him as it would allow them to attack Inuit camps along the way, which they desired to do (Hearne, 1971 [1795]:119), and the numbers only increased by the time the return to Prince of Wales Fort was underway that winter. There were many times that Hearne complained of a shortage of food among the group, but this was interspersed with other periods of sufficient to very good hunting or fishing, and dried caribou meat kept them going through much of the earlier winter, the season during which they saw the fewest caribou (Hearne, 1971 [1795]:211,212,222,223). The large group size may have been supportable in this case because they were almost continually on the move, travelling east towards Prince of Wales Fort, and so would have had less concern over exhausting local food resources in any one place.

[129] However, Hearne, while travelling westwards in March, came across a group of Dené on the shores of a lake who had been there since the beginning of winter successfully hunting caribou using a pound (1971 [1795]:78).

[130] Until the establishment of posts near the mouth of the Churchill River - Prince of Wales Fort, at other times called Fort Churchill - any of the Cree in north-central Manitoba wishing to trade at the Bay had to travel to the posts at the mouths of the Nelson and Hayes rivers, or even at Albany. However, when the first Prince of Wales Fort was constructed in 1717 for the 'Northern Indian' trade, the Hudson's Bay Company found that Cree from Southern Indian Lake and elsewhere along the Churchill River and in the Athabasca region preferred to come to the more northerly post. This journey required far fewer detours and portages than that to York Factory. The latter was still frequented by Cree living along the Saskatchewan, Nelson and Hayes rivers and their tributaries (Linklater, 1994:21,22; Pettipas, 1993:17; Ray, 1978:29; Smith, 1981c:139,141; 1987:436).

[131] From the earliest years of the Bay-side trade, the French traders began sending the *coureurs de bois* farther into the western interior to intercept some of the trade (Van Kirk, 1980:9), but these men could only carry small quantities of trade goods and so did not much threaten the positions of either the Hudson Bay traders or the middlemen, even when they began to set up western inland trade posts in 1734 (Ray, 1978:28,29). This rapidly changed as the inland traders became more prolific, however.

[132] The fish were, however, only just becoming more active again at this time of year. Also, they were most reliably found in lake narrows, below rapids in rivers and at river entrances and confluences, i.e., places where fish tended to get concentrated while migrating (HBCA, B.91/a/3:14; Winterhalder, 1978:352).

These were all places where the ice tends to be thinner to begin with. For the Cree to have increased fishing by expanding into areas of thicker ice would probably not have increased their catch all that significantly. More likely, in this season, the metal chisels just made what fishing they already did that much easier.

[133] The *Misinipiyithiniwak* - 'Big Water' Cree - were thought to be a separate group of people, speaking a different dialect of Cree now extinct in the Churchill River country (Brightman, 1989:3).

[134] It should be noted that the journals of Indian Lake House (cited as HBCA, B.91) do not always distinguish between Cree and Dené visitors to the post. Since both were using this post during the competitive trade period, references to what the 'Indians' were doing at any given time do not necessarily always refer to Cree behavior. However, the Dené trading at Indian Lake House had by this time adopted a more Cree-like adaptation to the boreal forest. It is reasonable to suggest that, with few exceptions, both Cree and Dené visitors would be carrying out the same sorts of activities at roughly the same time. References have been selected for this thesis with some care to not attribute a behavior to Cree people that was not theirs, but errors are certainly possible. Statements which are supported only by Indian Lake House references, if not supported by other observations, should be treated as hypothetical. More in depth research into other fur trade records would no doubt help to support or reject these statements.

[135] Leaving families inland was a common practice of the Cree traders in the early Bay-side trade years when the men went in the later spring and summer seasons to trade (Linklater, 1994:98; Mason, 1967:17).

[136] The Cree Goose Dance ceremony was first mentioned in fur trade records for Saskatchewan in 1743. It continued to be mentioned in various times and places throughout the fur trade (Meyer, 1975:435).

[137] Plains Cree families may have stayed on at their spring gathering places on the Saskatchewan River Delta, like the Assiniboine middlemen, rather than travelling into the forest itself (Pettipas, 1980:186,187).

[138] There is little information available on what the families left behind would do in this period; fur trade accounts paid more attention to the people who did come to the Bay than to those left behind. In fact, it is even difficult to say what mixture of people made up the trading parties themselves. There is, for example, rarely any mention of women coming to or living about the posts, in spite of the fact that they made up a substantial, if informal, work force there (Hamilton, 1991:16).

[139] The travel routes taken back from Hudson Bay in the summer and fall were not necessarily the same as those taken in the spring. Certain routes were not easily travelled in the summer and fall when water levels were lower, resulting in many shoals and rapids in streams which were quite passable in the spring (e.g. Burpee, 1973:44). In contrast, the lower Churchill River, which was always full of rapids and falls, has been noted as having been even more difficult to canoe in the spring, when it often remained ice-choked and dangerous, than in the later part of the summer and fall (Alcock, 1916:443). It has been noted that that Cree, when they did have to travel to Prince of Wales Fort, preferred to canoe down the Nelson River and up to Prince of Wales Fort by the Little Churchill River, thus avoiding the worst stretches of the lower Churchill River (Alcock, 1916:439). This was probably only the case for those Cree already on the Nelson River or its tributaries, however. There are no viable alternative water routes from the upper Churchill River region to Prince of Wales Fort. So, Cree travelling to that post from places like Southern Indian Lake would have had to use this river at least part of the way, even in the spring, unless they wanted to go far out of their way. Additional portages around the ice, at least, would likely have been necessary.

[140] Rogers (1973:62) has recorded that even with a metal ice chisel, it can take an entire day to set a fish net under areas of thick ice. To set a net under thinner ice, like that of early winter or over moving waters, it is considerably faster, taking about two hours. It has been suggested (e.g. Mallory, 1975:5) that setting nets in the winter might not have been done at all in places of thicker ice prior to ice chisels and that this introduction increased the amount of fishing possible through the winter months greatly.

Ice chisels increased the efficiency of winter fishing, but fishing had already been important in this season. Rather than increasing the amount of nets or lines that they would set by any great amount, Cree may rather have taken the same or only slightly larger-sized catch, just dedicating less time and effort to the activity. This was often, though not always, the case with the labour-saving technologies introduced during the fur trade (Brightman, 1993:250).

[141] In fact, Given (1987:10) established through experimentation that the range at which early flintlock muskets were accurate was significantly less than that of bows.

[142] French, and later Canadian, posts brought the local trade into the interior and somewhat nearer the Cree of North-Central Manitoba as early as the 1750s (Ray, 1978:28). It was not until 1789, however, that trade posts were established in the interior north of the Saskatchewan River (Linklater, 1994:22). By this time, the HBC had already expanded into the interior and the period of inland competition was well underway.

[143] During the period of early inland trade, Cree continued to trade mainly for tools and other useful items like kettles, axes, files, ice chisels, knives, and muskets, as well as a few 'luxury' items (Helm et al., 1981:151). Alcohol, which had been traded or given away in only small amounts by the English on the Bay, was traded much more freely in this period by the French, and later the Canadians, when they set up posts in the interior. Soon the HBC had to increase trade in alcohol as well, in order to keep customers (Newman, 1985:161).

[144] With the passing of the Middleman Phase, the trade goods acquired by the inland Cree were no longer being passed out of the region after only a season or two of use. With local trade expanding throughout the interior, more trade goods would be discarded locally, providing archaeologists with increasing evidence of the fur trade. Earlier fur trade periods may not be quite so easy to detect (Ray, 1978:32).

[145] During the period of inland competition, it appears that most northern trappers did own at least a couple of steel traps (Brightman, 1993:264); but until after 1820, traders were reluctant to distribute too many steel traps for fear that the beaver would be trapped out too quickly (Brightman, 1993:266). The use of deadfalls and snares continued to dominate trapping until the twentieth century (Helm and Leacock, 1971:359).

[146] When the traders returned to the inland posts in the fall (usually sometime between late August and early October), particularly as trade progressed, they often found families already waiting, hoping to pick up their winter supplies (e.g. Brightman, 1993:10; HBCA, B.83/a/2:4d). Other families who did not intend to be at the post in the fall could pick up their winter supplies in the spring or summer before the traders left (e.g. HBCA, B.91/a/2:29,30).

[147] For example, Wood has suggested that the middle section of the Churchill River, upriver of the Leaf Rapids, was not much travelled by residents of the Southern Indian Lake region prior to the years of inland trade. This section of the river was difficult to canoe and there was little reason to make this journey to begin with. When inland trade posts were set up to the west of Southern Indian Lake (earlier than any posts had been built around Southern Indian Lake itself), the people would have had reason to travel upriver more often (1983:63,64).

[148] Cumberland House is an example of a trading post site which became an important gathering place for the Cree only after the post had been established there (Meyer and Thistle, 1995:431).

[149] As late as 1810, recorders of the post journals in the Churchill River district were reporting that there was adequate to abundant game and furbearers for the needs of the Cree (Brightman, 1993:264). Large game and beaver had been steadily declining in abundance through the competitive period, however, due to local overhunting and overtrapping of these animals. By the end of this period it had become difficult to find moose, caribou and beaver in many parts of the boreal forest (Brightman, 1993:264,266; HBCA, B.91/a/3:3d,11; Helm et al, 1981:151; Orecklin, 1976:40; Thistle, 1986:75).

[150] Use of dogs for winter transport could also have affected the routes of travel taken by families during the winters, as again pointed out by Sharp with regard to the Dené (1977:38): In order to be most effective, dog teams generally require relatively level, open trails for travel. This would likely have been less a change for the Cree, who already preferred to walk over frozen waterways during the winters, than for the Dené, who had previously been inclined to travel over land. What already limited overland travel routes that had been used by Cree during the winters could have seen declining use, however. Traplines and other regularly-travelled paths of day to day travel over land would be an exception to this, as regular use would keep the snow packed down (Martijn and Rogers, 1969:135).

[151] According to Pettipas, the credit system of the fur trade was well-established by the beginning of the nineteenth century (1980:191). It would have been developing in years prior, as well - probably by the beginning of the period of inland competition.

[152] During the period of inland competition, some trappers did wait until the end of the freeze-up to take their winter outfit and travel to their trapping areas (e.g. Pettipas, 1980:197). The reference cited here, however, refers to Western Cree trading at The Pas. People travelling through this region had typically had to give up their canoes at some point within the Parkland anyhow, due to the shallowness of the streams and rivers followed (e.g. Burpee, 1973:20; Russell, 1991:93). So, perhaps it made little difference to them that the journey from the post to the winter territories would have to be made all on foot.

[153] Morantz (1987:219) has pointed out that one major reason that epidemic diseases had such devastating effect on Aboriginal populations in the later 1700s and 1800s was that these diseases most often struck people in the late summer or early fall , i.e., after gathering at the posts for trade where the disease could easily be passed on. Individuals did not always die from the diseases contracted, but in their weakened states it was very difficult to procure food and hunger weakened them yet more. Furthermore, the fall was an important time for families to build up at least some stores of food to help them get through the freeze-up and the harsher parts of the winter. Unable to do this, many people would starve the fall or winter following an epidemic.

[154] It has been observed in the Lake Wapisu area that recent caches tend to be isolated from any other camp feature. It seems that these caches are being made scattered through a region rather than at the fall base camps where the food would commonly have been preserved (Orecklin, 1976:122).

[155] Subsistence strategies of the Cree did have to change as large game became less abundant during the nineteenth century. However, no matter how scarce the large animals became, Cree did not stop hoping and looking for them. If there was a chance to hunt moose or caribou, the hunters took it, even if it took more effort and was less reliable than the small game hunting and fishing that provided them with most of their food in those times (e.g. Hanks, 1982:112).

[156] During the early days of the fur trade, the only European items in great demand by the Dené were ice chisels, metal axes and knives. Because these tended to have long use-lives, a minimum of trade was necessary (Smith, 1982:60).

[157] It is not clear from the reference (Brightman, 1993:277) as to whether these sixty-three persons who were accounted for included the families of the Dené trading at the posts, or if there were sixty-three Dené traders plus their families. In either case, Dené involved in the fur trade would still have been outnumbered by Cree involved in the trade and by Dené not regularly involved in the trade. The same can be said for the earlier trade periods as well.

[158] Blondin (1997:29) has written that as many as 62 Dené individuals per year visited Prince of Wales Fort between the years 1719 and 1735. In this case, however, it is not noted whether these people were as fully immersed in the fur trade as the same number appeared to have become in later years, or if they were only fitting in a visit to the posts into their regular round of activities. Either way, 62 is again only a small portion of the Dené population at that time.

[159] Although their territories, centred on the Coppermine and Yellowknife rivers north of Great Slave Lake, were located rather far from Hudson Bay, the Yellowknife people were known to have themselves travelled to the Bay within a few years after the establishment of Prince of Wales Fort. Such visits were rare throughout the period of Bay-side trade, however, as the more easterly groups pressured the Yellowknife to trade through them (Gillespie, 1981b:285).

[160] Sharp (1977:40) has suggested that early fur trade records have overemphasized the use of muskets by the Dené. Observations of hunting methods were most commonly made of hunters close to the posts. When staying near the posts, however, these men had greater access to arms, powder and shot than most others and so had more opportunity to use them to hunt caribou. Even so, the muskets would only be advantageous during the winter - the season during which most observations of Dené were made during the fur trade. The technology has probably been over-represented in many accounts, as a result.

The same may apply to the use of firearms for hunting waterfowl in the spring or fall. Muskets may be useful for hunting waterfowl, but the only people who could get a regular supply of powder and shot were those around the posts. Homeguard Dené likely had much greater opportunity to use firearms for the waterfowl hunt at the posts than did those hunting for themselves farther away.

[161] Fond du Lac was established by the NWC at the east end of Lake Athabasca in order to draw Dené trade. It was open from 1800-1804. Competing posts built by the NWC and the HBC were again set up at the east end of the lake in 1819 and were abandoned with the amalgamation of the two companies in 1821. Dené trade was apparently never so regular at the Fort Chipewyan sites, closer to the west end of the lake, as it had been at these posts (Minni, 1976:60).

[162] Further north, Dené wintering in the transitional forest did not experience the same severity of food shortage as the people in the full boreal forest. There were fewer trade posts to bring surplus meat in to, and the Dené who remained north of the full boreal forest were, for the most part, not much involved in the fur trade. They were also continuing to use their traditional methods and tools for hunting. As a result, there was comparatively little increased drain on the barren ground caribou populations (VanStone, 1974:93).

[163] Even in the early 1900s, when few Dené were still travelling up to the barrens for the summers, the people still made a point of travelling north to the treeline in the fall for the fall caribou hunt - probably the most important of the year (Alcock, 1916:447).

[164] By the 1790s, there is some mention of Dené travelling through to and from the boreal forest posts by canoe (e.g. PAM, MG1 B14, Ia:147, 149). In 1791, when Peter Fidler travelled to the Northwest, his Dené guides used canoes for much of the journey. In contrast, when Samuel Hearne had made the same journey just twenty years before, they travelled on foot the entire way (Tyrrell, 1934:495).

[165] While most Dené canoeists were more cautious of rapids, falls and other fast water than were the Cree, there were at least some who did try to shoot the rapids - and not always with success. In his journal, for example, David Thompson recorded the death of a Dené man who tried to shoot rapids and failed in the later 1700s (PAM, MG1 B14, Ia:147).

[166] Even inexperienced canoeists would not have followed the irregular shorelines of the subarctic rivers and lakes absolutely. Except perhaps in windier conditions, when Dené avoided canoe travel anyhow, paddling from point to point and thus avoiding following the shorelines of the many deep bays would probably have been preferred by most people (e.g. Franklin, 1971:11). This cut down on the distance to be travelled, while still allowing the canoeists to reach shore quickly if necessary.

[167] As was pointed out in an earlier note, many references in the Indian Lake House journals (HBCA, B.91) to peoples' behaviours are not very clear as to whether they are referring to Cree or Dené individuals. By the end of the competitive period, however, most of the trade at Indian Lake House was with Dené (Brightman, 1993:269). It is evident from the frequent mention of 'Northern Indians' in those journals that Dené were a regular presence at Indian Lake House as early as its establishment as well. The Dené people who visited this post had entered the fur trade economy and many had adopted a lifestyle similar to that of the Cree in the region. So it seems reasonable to expect that many if not all of the activities attributed to the Aboriginal people around that post did include Dené participation. Care has been taken in the selection of references from the Indian Lake House journals, but errors may still have been made. Statements regarding Dené behaviour supported only by references from Indian Lake House in which the ethnicity of the people discussed was not given may be considered only hypothetical. More in depth research into other fur trade records would no doubt help to support or reject these statements.

[168] While people could delay their journey to the barrens for several weeks after the caribou first began to migrate north, they had to be careful to not put off leaving for too long if they hoped to hunt caribou along the way. One Sahtu Dené story, for example, tells of a group of people who had camped around Great Bear Lake for the early spring, hunting migrating caribou as the herds passed the site. After some time, the hunters had to travel farther away from their camp each day in order to find the caribou, which had, by this time, all passed. After some more time, the people finally made up their minds to pack up and travel after the caribou to the barrens. They had left this departure so late, however, that they were unable to catch up with the caribou.

[169] This concentration on waterfowl in the spring would have been somewhat new for most Dené. While travelling north in the spring after caribou, they were usually travelling ahead of break-up. A few local sites of water could be opening by this time - shallow bays, stream confluences, the base of falls - and Dené travellers probably welcomed the chance to get any early waterfowl that was found staging at such places

(e.g Hearne, 1971 [1795]:17), just as they have more recently (Blondin, 1990:189). Waterfowl had not been a primary source of food in this season, however. Until the fur trade, Dené who were practising a caribou herd-following lifestyle had likely not focussed their spring activities nearly so much around this hunt as more southerly peoples tended to.

[170] Dené found moose and woodland caribou difficult to hunt using traditional methods better suited to hunting barren ground caribou. They are said to have killed these less familiar deer almost exclusively with firearms after their introduction (Birket-Smith, 1930:23; Smith, 1982:59).

[171] Whether gatherings could ever be held on an island likely depended on the size and resources of the island. While islands may have been preferred for summer camp locations by at least some people, it is unlikely that many people would camp solely on islands.

[172] Penetration into the boreal forest ahead of the main migration regularly occurred at Duck Lake in northern Manitoba. This is one of the very few places where this advance migration occurs predictably. Duck Lake was an important fall hunting place for the eastern Dené in recent times, for this reason (Kelsall, 1968:64). Its importance likely began with the time that Dené first began spending more time south of the barrens, becoming more reliant on hunting these advance penetrations of caribou into the forest.

[173] Although the use of weirs or fish traps is not frequently mentioned for the eastern Dené, the technique was apparently used by at least some people, some times. Blondin (1990:55) wrote that the Dogrib used to set fish traps between two sets of rapids on streams and some rivers in the late summer and fall to catch spawning whitefish, much like the Cree did.

[174] In 1791, during the competitive trade period, Peter Fidler's Dené guides destroyed their canoes when freeze-up came. They did this, they said, because they did not expect to be able to return for them and did not want any competitors to be able to use them instead (Tyrrell, 1934:514). Likely, this extreme action would not have occurred regularly outside of the competitive trade period.

[175] This reference to Dené who trapped in the full boreal forest having to trade European goods for meat from caribou-hunters dates to the years prior to any inland posts being in Dené territory. It is likely, however, that this exchange between trapping and non-trapping Dené neighbours could have continued into the competitive trade period when the trade companies did expand farther north, as well. It would have become less common, however, as access to posts and thus to emergency food rations increased for the trapping Dené, while access to new, unused trade goods from the posts increased, in turn, for the caribou-hunters.

[176] Although barren ground caribou sometimes wintered as far south as the lakes of the Churchill River, they rarely crossed the Churchill River in this time period except during the coldest winters or those with the heaviest snow falls (Hearne, 1971 [1795]:225; Jarvenpa, 1980:19,42). The males did generally travel farther south than the females and young before dispersing for the winter around the lakes, but, even then, they tended to be most concentrated in the more northerly parts of the forest (Smith, 1978:71). For some time after the rut, the meat of male caribou was not considered very good (Hearne, 1971 [1795]:69) and was leaner than that of the females (Kelsall, 1968:41). Most caribou-hunters probably tried to stay where the females were concentrated, to the north, if they had no other reason to come farther into the forests.

[177] In the northern transitional zone, valuable furbearers were uncommon. With the exception of a small number of marten, fox, wolf, wolverine and otter were the only furbearers which were regularly encountered and so could be trapped in that region (Hearne, 1971 [1795]:208,209). By moving slightly deeper into the forests, Dené could also take beaver, muskrat, marten and other weasels, and lynx more often (Hearne, 1971 [1795]:366,378).

[178] For example, in 1820, by the end of the competitive trade period, the NWC listed the value of one lynx pelt as equivalent to one Made Beaver pelt (Van Kirk, 1996: The Indian Trade).

[179] When ammunition ran out away from the post, people who had become 'hooked on' using firearms could be quite resourceful in finding alternatives. Hearne (1971:56) reported that when the Dené whom he was travelling with in the early 1770s began to cut up old ice chisels to use for ammunition. These had the unfortunate tendency to damage the barrels of the light firearms which they used, however.

[180] It should be kept in mind that the descriptions presented in this chapter are generalizations. There is always some variability in the types of locations preferred by different individuals at different times for their activities as well as in the types of sites which were actually used.

[181] "Though people with little experience on the lake look for easy access (a gentle land-water interface), the Nelson House Cree, docked their canoes on almost any type of shoreline, with the exception of very steep 1-3 or 1-1", where "1-3" is a low bedrock shoreline and "1-1" is a steep bedrock shoreline (Orecklin, 1976:167).

[182] It is important to keep in mind that what is presently densely wooded, full boreal forest was not necessarily always so. Climate change and forest succession both cause changes in the nature of forest environments, including the density of trees and underbrush. It may have been easier to pass through certain overland locations in the past than it would be today.

[183] In order to be useful to the people, desired resources not only had to be within a reasonable distance from camp, usually within a couple kilometres or less; they also had to be accessible. A source of water or some other required resource provided people with little if this could not, for some reason, be reached. A steep, high cliff, for example, might separate people at the bottom or top from resources at the opposite end, as would a difficult stretch of river if it had to be travelled to reach the resources. In either of these examples, such difficulties could be overcome with effort. However, there was little point to picking a site from which the nearby resources were difficult to reach if another camp site was available from which they could be more easily harvested.

[184] Although Dené made do without firewood when out on the barrens, instead burning mosses or grasses when smoke or fire was needed (Bussidor and Bilgen-Reinart, 1997:18), they still considered firewood important while south of the treeline (e.g. Brumbach and Jarvenpa, 1989:110; Glover, 1962:113).

[185] Tanner, for example, has estimated that 30 cubic feet of firewood were burned in Mistassini Cree households per day in the 1970s, requiring 4 to 5 man-hours to collect and prepare using an axe and hand saw (1979:60). This reference is for Cree in a permanent settlement, having to heat cabins. They probably required more fuel than people would have gone through while living on the land. It does, however, give an indication of the sheer volumes of wood that could be required over a season, particularly in the winter, and how influential a nearby source of dry wood could have been.

[186] "'It is a culture tradition ... [among] ... the Indian people [that] the first priority for the planning is to go to the hunting area - hunting ground - and then to select ... a certain lake ... [for] ... the fish that will be there. Even though other things are depended on as food ... the main planning is to make sure that there is fish ... where you are going so you will catch as much fish as you can. You can depend on fish more that [*sic*.] any other. You can be certain that you will get a fish. ...'" - John Crowe (cited in Lister, 1996:78).

[187] "Favoured occupation zones are not necessarily located in areas of good trapping potential but they are in close proximity to such regions" (Hanks, 1983:351).

[188] For example, the manner in which Cree people in northern Ontario spaced themselves out through their summer settlements has been contrasted to that characteristic of Ojibwe settlements. It was illustrated that Cree families tended to cluster their dwellings relatively close together, whether available space was limited enough to require this or not. Ojibwe families, on the other hand, preferred to have considerably more space around each household for comfort; their dwellings were more spread out along the shorelines, as a result (Rogers, 1966:34). It was suggested that this difference in spacing is related to an Ojibwe fear of witchcraft which was not shared by the Cree. To the Ojibwe, there was more concern over hostility in the form of witchcraft between households (Rogers, 1966:36). So, more space was favoured.

[189] Decreased exposure to winds is one reason which has been suggested for explaining why Cree from Nelson House say that they used to spend summers on the larger lakes, but winters on the rivers and smaller, inland lakes. With less open area for the wind to blow over, the shorelines of rivers and small lakes should tend to be somewhat less blustery than shorelines facing the same directions on larger lakes (K. Brownlee, 1997: personal communication).

[190] By facing a southerly direction, camps near the shorelines would tend to be better sheltered from the coldest winds. An additional benefit of this orientation, however, would be that the camp could receive a

greater number of hours of light per day. This would increase not only illumination of the camp, but also its warmth.

[191] Of course, no location would have been used for a camp while it was underwater. This particular fact, however, was simply a matter of immediate site accessibility. In contrast, sites which were above the water level when the people first arrived could still later become flooded. To avoid this, people had to plan any longer-term base camps in relation to the levels which the water was anticipated to reach during the period of the camp's use.

[192] Predictive models often attempt to define the distance from a water body within which campsites should be expected. This is more useful in more arid regions, however, where even a general estimate - for example, within 1000 m of a seasonal water source (e.g. Williams et al., 1985:285) - would be meaningful. In the boreal forest, it is often stated that sites will always be relatively close to some source of water, but this is not surprising because water is abundant (e.g. Martijn and Rogers, 1969:146; Mason, 1967:11; Rogers and Black, 1976:25). When a distance from the shoreline of a water body is predicted, it is reasonable to suggest a relatively large range of distances within which the sites may be expected to occur, such as within 250 m (e.g. Dalla Bona, 1994b:4,5). Anything more specific, however, would be misleading. It is rational enough to generalize that most winter campsites would tend to found farther inland than most summer base camps, as discussed above. But, it is unlikely that any more specific distance from shoreline could be used to describe the location of winter campsites made around water bodies even within the same region. This is due to a number of variables: 1) the different densities of forest; 2) varying shelter from prevailing winds provided by the topography alone; and 3) the variable distance from water that factors for suitable campsites, unrelated to wind exposure, could be found from location to location*

* The distances at which camp sites are found from shore are typically presented as either maximum distance inland or as average distances or ranges of distances from shore. Yet even these statistical descriptions are not comparable enough, either between boreal forest regions or even within them, to be useful for predictive modelling of site locations in the boreal forest at a very fine scale on their own. Some examples from ethnographic and archaeological reports should illustrate this. In the upper Churchill River drainage, for example, archaeologists found that most sites were to be found at variable distances within 50 feet (15 m) of shoreline (Meyer and Smailes, 1975:69). However, because boreal forest archaeologists have traditionally presumed that most sites would be close to water, areas much farther inland were surveyed only sporadically (Meyer and Smailes, 1975:27). Within the Mistassini Territory of central Québec, on the other hand, Cree base camps were recorded to have been typically located between 30 and 100 feet (9-30 m) from a shoreline during the warmer seasons, and between 100 to 200 yards (91-182 m) inland in the winters (Martijn and Rogers, 1969:150). In a different survey of Cree campsites in central Québec, it was found that recent camps were located a mean distance of 19 m from shoreline in the summer, but 22 m from shore during the winters (Hanks, 1983:352). Precontact sites within the same region (for which season was not determined), however, were found located an average of 30 m inland from shore (Hanks, 1983:354). Just how far inland these camps may have been placed is not well known as this survey, like that in the upper Churchill River region, did not cover much ground far inland (Hanks, 1983:354). In northern Ontario, precontact sites were most often discovered at distances from water ranging from 14-35 m, while more recent base camps tended to be found at 50 to 150 m inland from shore (Gordon, 1988:14). On Lake Wapisu in north-central Manitoba, recent winter camps were found everywhere from just behind the trees lining the shoreline to as far as 80 m inland from the edge of the forest (Orecklin, 1976:96).

In general, during more intensive surveys involving shovel testing or when ground has been exposed by forest fire or forestry operations, archaeological sites have been discovered to continue or even begin much farther inland than is typically revealed by surface survey. For example, campsites in the Hudson Bay Lowlands which bore no evidence at all near the shoreline were found at 25 m inland from shoreline (Lister, 1996:87). In burned areas, sites around Southern Indian Lake have been found to extend 100 m or more back from the shoreline (Dickson, 1972:38; Kelly, 1982:42). Clearly, even the range of distances back from a shoreline that boreal forest campsites might be found is not too well understood at this time.

[193] More water tends to run off the surface of land which is higher than its surroundings; the steeper the slope, the more quickly this surface drainage will tend to occur. However, except for precipitation which

falls directly onto a stream or lake, the only water which will run off the surface, downhill, is that which is not first lost to evaporation or through absorption into the ground (Plummer and McGeary, 1988:200).

On both flat and sloping land, water also percolates down through the earth until an impermeable layer, i.e., one which will allow no more passage of water through it, is reached. This might be either an impermeable rock or compressed sediment layer, or the point below the surface at which the ground has become saturated and can hold no more water: the water table. The height of the water table is affected, in part, by the porosity of the ground; how much water the sediments and rock can hold, which is a function of how much interconnected, or permeable space is left open between the particles. This also affects the speed with which this percolation can occur: the more porous and permeable the ground, the faster the water can be absorbed and drained downwards. Deposits of sand, for example, are more porous and permeable than deposits of compacted clay, which are more porous and permeable than granitic bedrock, which accepts water only in its cracks and fissures (Plummer and McGeary, 1988:237). Bedrock outcrop is the most excessively drained ground type not because it is highly permeable, but because it is virtually impermeable and all water will run directly off of any sloping bedrock exposure, leaving it high and dry.

In very low-lying locations within moist regions like the boreal forest, the water table may intersect the ground surface. This occurs at lakes and streams and is responsible for the presence of springs (Plummer and McGeary, 1988:238). It may also be partially responsible for the occurrence of inland wetlands. Around the shorelines of water bodies, the water table is continuous in level with the open water surface and so lays just below the surface of low shorelines. This contributes to the wet, poorly-drained nature of many low shorelines. Although the water table does tend to rise and fall somewhat with the landscape (Plummer and McGeary, 1988:238), as a rule, the lower the land beneath its surroundings, the closer the water table will be to the surface.

Where the watertable intersects the surface inland from shore, wetlands will result. The type of wetland (marsh, bog, muskeg or fen) depends on its context, the degree of saturation of the ground, and the type of vegetation present. In many cases, it would not be the height of the water table alone causing the wetness of the ground. The clay soil which underlies most wetlands is not greatly porous or permeable, so that drainage is slow to begin with. Add to this the factor of being in a topographic depression, so that surface runoff drains into the area rather than off of it, and the ground will tend to get waterlogged rather quickly in moist climatic zones.

[194] The types of sites most commonly used for travel and camping within the boreal forest - generally those which were better drained - are indicated in a story told by a Cree man: Sickness came to a man in a dream once, and warned him of his coming. In order to avoid being struck by Sickness, the man was told to "'...get out of the way of all *Large waters* (i.e., Lakes and rivers) and pitch off immediately into the woods: Be cautious also and select the proper ground for encamping; never pitch your tents in Large high woods, particularly of the Pine kind, chuse *low woods* to encamp in ...'" (Brown and Brightman, 1988:50; italics in original). The dangerous places in this case, i.e., the shorelines, and the high, pine (dry) woods when inland, were those along which Sickness would travel, being the places that the people most often were camping. Disease could not spread where there was no-one to pass it on, as in the low (wet) woods which were rarely used.

[195] Archaeologists developing predictive models of site location have, in many examples, taken this into account in their models. For example, polythetic sets of criteria have sometimes been presented as being predictive of high potential locations for archaeological sites. In this case, all the identified criteria for a good camp or activity location are listed, but the model requires only that a certain percentage of those criteria be met (e.g. Hanna, 1974; Williams et al., 1985). Other approaches recognize that some criteria had more influence on site selection than others. Some models weight the criteria according to their relative importance (e.g. Dalla Bona, 1993; 1994b; Jochim, 1976; Kvamme, 1988). In other models, the criteria are considered in order of their importance: if a site does not meet the most important criteria satisfactorily, the site would not be predicted to have been likely to have been used, no matter how well the other criteria are met (e.g. Limp and Carr, 1985).

[196] Kill camps, established after a kill had already been made, but too far away from the base or hunting camp, could themselves be a few kilometers from the place the kill was made (Martijn and Rogers,

1969:151). So, it is reasonable to suggest that satellite camps could similarly be made a few kilometers from the harvesting locations, although a closer distance would no doubt be preferred.

[197] Such use of inland sites for camping was probably restricted mainly to the winter season. At this time of year, as already discussed, the inland portions of the boreal forest were more accessible to people on foot. As well, the resources which people concentrated on for food during the warmer months were found largely in the aquatic zones (fish, aquatic plants, waterfowl, moose and other game which were attracted to open water in the summers). In contrast, during the winters many of their food resources were land-based (hare, game birds, large game which were sheltering inland more during the winters) (Rogers and Black, 1976:7). Thus, there was more reason and more opportunity to camp inland during the winters than in the summers. Given this, the ability of people to camp well inland from water could perhaps also have been aided by the availability of snow which could be melted down for water if necessary.

[198] Still, as noted earlier, people are said to have always tried to camp nearby a reliable fishery, no matter what other resources they were after (Blondin, 1997:209; Hanks, 1983:352; Lister, 1988:78; 1996:16; Martijn and Rogers, 1969:150; Tanner, 1979:38).

[199] Although Martijn and Rogers (1969:117) imply that kill camps can be made up to a few kilometers from the kill site, most would likely have been far closer.

[200] People would not necessarily have established camps at all portages, however. While archaeological sites are often found at either end or even along portage trails, there are some at which no site has been found (e.g. Wood, 1975:11). It has been suggested that the noise from the falls or rapids which some of these portages detour around were simply too noisy, disguising the sound of approaching game - which would make the site undesirable for hunters (Wood, 1975:11). On the other hand, portages sometimes have to cross land which is simply unsuitable for camps, being too swampy, or too sloping, for example.

[201] Portages were also used for getting around areas of weak ice or looping sections of water routes during the winters. However, because people were already walking and so there were no canoes to unload, there was probably less advantage to setting up travel camps at the ends of these winter portages unless the site was desirable for other reasons.

[202] It was, in part, for this reason that people, when canoeing, tried to travel along routes which would offer them the least trouble from winds and rough waters (Downes, 1943:74; Riddle, 1994d:24; 1996:4).

[203] During the fur trade, when heavy loads were being transported by canoe, stops - although not necessarily for more than a brief moment's rest, if any at all - often had to be made by the traders while portaging over long distances: "If the portage was more than half a mile (a ten-minute carry), the voyageur, in order to better distribute his loaded and unloaded periods, dropped his packs at what was known as a pose and went back for the next load. Poses were about half a mile apart" (Morse, 1979:7). It is possible that Aboriginal travellers may have made similar "poses" when taking heavier loads over long portages, if there were not enough people to carry it all easily.

[204] Some of the easier rapids could be shot, at least when travelling downstream (Morse, 1979:7), but many others had to be portaged. Among those rapids less navigable by canoe were very fast rapids, curving rapids (Rogers and Black, 1976:8), and those which were very rocky or shallow (Morse, 1979:7).

[205] Of course, when Dené began to moved farther into the boreal forest, they too became more constrained by the forest to more open paths and use of the waterways. This was especially true when people began to make more extensive use of dog teams for travel: a single person or small group of people can make their way over rougher terrain and through denser bush, if necessary, than a team of dogs pulling toboggans (Sharp, 1977:38).

[206] Visits for trade and other economic, social or political reasons had long been made by local Cree to other regions, like the Hudson Bay Lowlands, the northern transitional zone and barrens, the southern parklands and the plains. But there was little reason why they would have to leave their territories within the boreal forest on a regular basis. Following the flexible lifestyles which they did, they were capable of being economically and socially self-sufficient within this region alone. Visiting and trade for desired materials not available locally was a choice more than it was a requirement for survival (Brownlee and Syms, 1999:5).

[207] Contemporary Cree residents of Nelson House, Manitoba have stated that they did tend to camp more often on the rivers, streams and inland lakes during the winters in contrast to their dominant use of the larger lakes along the major rivers in the summers. K. Brownlee has suggested that this might be related to the decreased exposure to the winds on smaller lakes and rivers, and possibly to the behavior of moose, which are common on the large lakes during the warm seasons, but retreat inland during the winters, and may be then easier to find around the rivers and inland lakes (K. Brownlee, 1997: personal communication).

[208] Fortunately, the different types of landforms, e.g., peaty lowlands versus sandy ridges versus clay shorelines and so forth, tend to support different climax forest types. They often support different successional stages leading up to that climax community, as well. This cuts down on the variety of habitats which could be expected at any one location over time. See, for details, Beke et al (1973:35,125,128); Feit (1969:113); Ritchie (1956:559), and Shay (1984:96).

[209] Other destinations may also have increased in importance. For example, until the expansion of the fur trade inland, Cree and Dené in the local regions around the Bayside posts acquired most of their furs for trade from more distant groups. This may have increased contact between these dispersed peoples, requiring travel to places where they could meet and trade. For example, Hendry accompanied a group of Cree inland from Hudson Bay to the Rocky Mountains and back in the year of 1754-55. These Cree had agreed in the fall to meet on the Plains with a group of Blackfeet in the spring to trade (Burpee, 1973:38). Such inter-regional travel and meetings no doubt had occurred as part of the Aboriginal trade network as well, but may have increased with the fur trade.

[210] While relatively few Edthen-eldeli Dené ever became involved in the fur trade, the fur trade journals make frequent reference to 'Northern Indians' (Chipewyan) trading meat, hides and also furs, and at some posts they dominated the clientele. Brightman has noted that by 1821, for example, Indian Lake House on Southern Indian Lake was being frequented mostly by Dené traders, while the Cree were trading at Nelson House and Split Lake (1993:269). Because most post employees rarely distinguished between the different groups of 'Northern Indians' in the journals, it is difficult to tell from what region the Dené trapping in the forests and trading at the posts in northern Manitoba originated. Regardless of whether the Edthen-eldeli Dené themselves were entering the fur trade, there was increased Dené presence in this region with the later 1700s which has persisted to the present day.

[211] Too often, locations which bear only minor amounts of archaeological materials - e.g. less than five artifacts within a specified radius - are not classified as official 'sites', but as 'random finds'. Once designated a random find, these sites of past activity are rarely given any more consideration. Interpretation of what activities may have been responsible for these is thus rare.

[212] Adequate testing of the model still requires a representative sample, but a considerably smaller sample, requiring less time and energy, can normally be considered adequate for testing purposes, whereas larger site samples are desirable for good observation-based model construction.

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APPENDIX 1. SHORELINE TYPES IN THE SOUTHERN INDIAN LAKE REGION.

Steep Bedrock	a steep shoreline (>30 degrees) of bedrock outcrop	widespread but of limited extent
Vertical Bedrock	very steep outcrop (90 +/- a few degrees)	rare, more common on river than on SIL
Low Bedrock	low, wide outcrop	pre-flood, were common along the Leaf, Central and South Bay localities
Bedrock-Controlled w/ overburden beach	bedrock is covered with overburden, and there is a low and usually narrow beach of sand, gravel and/or clay, backed by a bank of backshore overburden; outcrop is rare and is limited to the backshore	pre-flood, were common throughout the region in low-relief areas, particularly common in the north end of South Bay
Low Bedrock-Controlled (no beach)	a low shoreline (<20 degrees); bedrock is covered with clay overburden which often extends to the water's edge; there may be a very narrow band of outcrop or boulders	quite common throughout the region
Medium-Steep Shoreline in Coarse Sediment	a shoreline derived from glacial deposits, normally with wide sand/gravel beaches	rare and isolated, most common at the north end of SIL, pre-flood
Medium-Steep Shoreline in Alluvial Sediment	a sloping shoreline of thick clays (1-2 m) overlying low relief bedrock, with no outcrop; medium steep slope from water is followed by a more shallow rise	common along river channels in the region
Low Shoreline in Coarse Sediment	a low shoreline ($\leq$ 20 degrees) with a normally narrow sand beach overlying thick clays, behind which is a steep (20-30 degrees) bank of sand over clay; offshore marsh is common	pre-flood, were common in the South Bay and Northern SIL localities
Low Shoreline in Alluvial Sediment	a wide, low ($\leq$ 20 degrees) beach-like shoreline of sand and clay surrounded by an area of low relief; extensive marsh is common offshore and backshore is low and poorly drained	pre-flood, were common at the bays near creek mouths, and in depositional areas along rivers

Treed Muskeg Shoreline	low, poorly drained very narrow beach immediately followed by a low but steep to vertical bank of peat overlying clay; Black Spruce and *Sphagnum* dominate the backshore	pre-flood, were most common at the north end of SIL
Willow Shoreline	a very low clay shoreline with a wide water-washed zone where marsh species dominate, behind which is willow scrub; offshore marsh is typical	occur sporadically throughout the region; most common around shallow bays
Fen Shoreline	very low, waterlogged shorelines of peat over clay	rare to absent in the SIL region
Offshore Marsh	shallow bodies of water with emergent sedge vegetation rooted in a clay soil	pre-flood, were common in shallow bays and off of low, clayey shorelines; large marshes were mostly found at the north end of SIL, and some also in South Bay; fringe marshes found along the Churchill River in the Leaf Rapids locality

(Geotechnical Section, 1974:26-70; Webb, 1974:10-17)

APPENDIX 2. PLANT FOOD HABITATS IN THE NORTHERN BOREAL FOREST.

Plant Name	aquatic/wet	moist	dry	open	semi-open	closed forest	part harvested and when
Betula papyrifera Paper Birch		x				x	sap/inner bark, late winter/early spring
Viburnum spp. Bush Cranberry		x			x		berries, late summer/early fall
Stellaria spp. Chickweed	x		x	x	x		greens, summer
Chenopodium spp. Goosefoot	x	x	x	x	x		greens, summer; seeds, late summer/early fall
Petasites spp. Sweet Coltsfoot	x				x		greens and flowers, spring, summer
Solidago spp. Goldenrod		x	x	x	x		greens, spring
Cornus spp. Dogwood		x			x	x	berries, late summer/early fall
Scirpus spp. Bulrush	x			x			greens, flowers and seeds, spring, summer; roots, fall
Eleagnus commutata Silverberry		x		x			berries, late summer/early fall
Sheperdia spp. Buffalo-berry		x			x	x	berries, late summer/early fall
Empetrum nigrum Crowberry		x		x			berries, late summer/early fall
Arctostaphylos spp. Bearberry		x	x	x	x		berries, late summer/early fall
Oxycoccus microcarpus Small Cranberry	x			x			berries, late summer/early fall
Vaccinium spp. Blueberry, Cranberry		x	x		x		greens and berries, late summer/early fall
Menyanthes trifoliata Buckbean	x			x			roots, summer
Phragmites communis Giant Reed	x			x			greens, summer; roots, late summer/early fall
Hippuris vulgaris Mare's-tail	x			x			greens, summer
Triglochin maritima Arrow-grass	x			x			seeds, summer
Lycopus spp. Water-horehound	x				x		roots, late summer/early fall
Stachys palustris Wound Wort, Marsh Hedge Nettle	x			x			roots, late summer/early fall
Lathyrus spp. Vetchling		x			x		seeds and roots, late summer/early fall
Smilacina spp. False Solomon's-seal		x			x	x	greens, spring; roots, late summer/early fall
Myrica gale Sweet Gale	x			x			seeds, summer

Plant Name	aquatic/wet	moist	dry	open	semi-open	closed forest	part harvested and when
Nuphar variegatum Yellow Pond-lily	x			x			seeds and roots, late summer/early fall
Epilobium angustifolium Fireweed		x			x		greens, summer; roots, late summer/early fall
Abies balsamea Balsam Fir		x				x	greens and sap/inner bark, late winter through early fall
Larix laricina Tamarack, Larch	x				x		greens and sap/inner bark, late winter through early fall
Picea glauca White Spruce		x				x	greens and sap/inner bark, late winter through early fall
Picea mariana Black Spruce	x					x	greens and sap/inner bark, late winter through early fall
Pinus banksiana Jack Pine			x			x	greens, flowers and sap/inner bark, late winter through early fall
Polygonum spp. Knotweed	x	x			x		greens and seeds, summer; roots, late summer/early fall
Rumex spp. Dock	x			x			greens, summer; seeds, late summer/early fall
Matteuccia struthiopteris Ostrich-fern	x					x	greens, spring; roots, late summer/early fall
Polypodium virginianum Rock Polypody			x		x		greens, summer
Caltha palustris Marsh Marigold	x				x		greens and flowers, spring, summer
Amelanchier alnifolia Saskatoon		x			x		berries, summer
Fragaria virginiana Strawberry		x			x		berries, summer
Potentilla spp. Cinquefoil		x		x	x		roots, late summer/early fall
Prunus spp. Wild Cherry		x	x	x	x		berries, late summer/early fall
Rosa spp. Rose		x	x	x	x		flowers, summer; berries, late summer/early fall
Rubus spp. Raspberry, Cloudberry	x	x		x	x	x	berries, summer
Galium spp. Bedstraw		x			x	x	greens, summer
Populus spp. Balsam Poplar, Trembling Aspen		x				x	sap/inner bark, late winter/early spring

Plant Name	aquatic/wet	moist	dry	open	semi-open	closed forest	part harvested and when
Ribes spp. Gooseberry, Currant	x	x	x		x		berries, late summer/early fall
Sparganium spp. Bur-reed	x			x			roots, late summer/early fall
Typha latifolia Cat-tail	x			x			roots, greens, flowers and seeds, spring through early fall
Sium suave Water Parsnip	x			x			roots, late summer/early fall
Urtica dioica Stinging Nettle		x			x		greens, spring
Viola spp. Violet	x	x	x	x	x	x	greens, spring
Potamogeton spp. Pondweed	x			x			roots, late summer/early fall

(abstracted from Shay, 1980:Table 15)

APPENDIX 3. BOREAL FOREST GAME: HABITS AND HABITATS.

Large Game.

Barren-ground Caribou (*R. tarandus groenlandicus* found throughout the western arctic and subarctic. The range occupied by a herd varies year to year, depending on local conditions and on the size of the herd, but in most winters they can be found occupying the northern fringes of the boreal forest. In Manitoba, barren-ground caribou rarely migrate much south of the Churchill River region, but in some years they have travelled as far as the north end of Lake Winnipeg (Simmons et al., 1979:7).[1]

Habitat: The winter diet of caribou is mostly lichens, and so they feed in the mature open spruce or pine forest when they come south, and abandon burned territories for many years. Unable to move well over deep, soft snows, they prefer to travel and rest on the ice of lakes and rivers, and so they normally feed near shorelines.

Seasonal Patterns: Barren-ground caribou summer).

Barren-ground caribou are on the tundra and winter in the transitional forest. Generally gregarious, the caribou were most concentrated while in their calving grounds on the tundra in the month of July, and more dispersed wintering in the forests. The fall, and to a lesser extent, spring migrations are also periods of concentration.

The Kaminuriak herd[2] begin to move southwards in the late summer, gathering near the tree line prior to freeze-up. With the colder weather, they push across into the transitional forest around the end of October, quickly reaching the northeastern end of Southern Indian Lake. This herd has been known to travel southwards past the central or even southern portion of the lake before turning westwards towards the Reindeer Lake region by late November if the snow is not already too deep. In years with early, deep snow, they may spend all winter around the north end of Southern Indian Lake, and occasionally portions of the herd have wintered in the South Bay area. In most years only a few individuals can be found around the lake from mid through late winter. Sometime

around May, the caribou cross again through northern Manitoba on their return north to their calving grounds in the Baker Lake area.

While the exact route taken by migrating caribou each year can vary, they are predictable to some extent: they tend to follow north-south running water routes and eskers/ridges, along which travel is easiest. In the fall, caribou travel mostly along river valleys - so long as these are oriented in the same direction that the caribou are migrating. In the spring they are found more often on ridges and plateaus (Gordon, 1981:3). They can cross both ice and open water with ease, but avoid weak ice. When the herd comes to open water, they keep to the shoreline until they either get around it or reach a convenient crossing place like a point or narrows. It is here that they are most concentrated, most predictable, and most efficiently hunted.
(Banfield, 1974:385,386; Burch, 1972:345; 1991:443; Harper, 1955; Kelsall, 1968; McInnes, 1913:116; Parker, 1972; Webb, 1974:30).

Woodland Caribou (*R. tarandus caribou.*

Woodland caribou are less gregarious and more shy than the barren-ground caribou, living in small herds and behaving more like moose. Woodland caribou remain in the boreal forest year-round, undergoing only limited seasonal movements. They are found throughout the Southern Indian Lake region, but rarely much north of the Churchill River, and are nowhere too concentrated. The caribou found along the Hudson Bay coast in Manitoba appear to be woodland caribou.
Habitat. Like barren-ground caribou, they feed mostly on lichens and so prefer a mature open forest. In the summer time, they can be found most often along wooded lake shores and in treed muskeg areas, but move to higher ridges with the winter.
Seasonal Patterns. Some woodland caribou herds have been known to migrate towards the Hudson Bay coast in the spring, and back inland in the fall. These migrations are considerably shorter than those of barren-ground caribou.
(Banfield, 1974:385,387; Parker, 1972; Winterhalder, 1978:206).

Moose (*Alces alces*).

Moose can be found throughout most forested regions. In the Southern Indian Lake region, moose are most often found at the north end, in the South Bay area, and around the Leaf Rapids locality of the Churchill River - those localities with most extensive marsh habitat (Webb, 1974:26).

Habitat. The summer diet of moose includes new greens and aquatic plants, as well as deciduous leaves and twigs. In winter, they browse on both deciduous and coniferous trees and shrubs. For this, they avoid climax spruce forest and stick instead to deciduous and mixed forest stands with plenty of young shrubs and trees, keeping near more sheltered, mature patches in the wintertime. Old burns where herbs and deciduous shrubs have established themselves are quite attractive to moose from fall through early spring, offering plenty of browse and salt, and moose will visit even a very recently burned patch, for the young greens. They tend to remain near the edges of these patches, however, as they prefer some cover nearby. Moose can move quite easily over even deep snow, but are slowed by the crust that forms over snow with warmer daily temperatures in the spring.

Seasonal Patterns. Moose are fairly shy and solitary for most of the year. In the summer moose are commonly found wading and feeding in shallow bays and along other marshy shorelines, and their movements are fairly erratic and unpredictable. During the fall rut, moose tend to remain at or near the shorelines. At this time they are less shy and more vocal, and so are easier to locate and to lure out with moose calls. With winter, moose move inland a bit. They concentrate in shrubby, open forest patches and ridge tops connected by well-worn paths where they can keep the snow tramped down and where they may remain for several days.

(Banfield, 1974:395-397; Feit, 1969:107; Peterson, 1955; Webb and Foster, 1974:74,75; Winterhalder, 1978:320,321).

Black Bear (*Ursus americanus*).

Bear are found all through the forested regions and are fairly common in the Southern Indian Lake region.

Habitat. Black bear are omnivorous, eating mostly grubs, fish and small mammals as well as greens, roots, young tree buds, and berries. They are most often found in deciduous and mixed forest stands, using climax spruce forest mainly for hibernation.

Seasonal Patterns. Bear abandon their dens around the time of the melt, and soon gather near rapids, to fish the sucker runs. Through the summer they are quite solitary and spend most of their time feeding in deciduous forest patches. By late summer they are predictably found around recent burns, drawn by abundant berries. In fall, the fattened bear begin to search for a den - a rock shelter, hollow log or even a windfall tree - where they will sleep through the winter. Often the only indication of a den is a small breathing hole in the snow. (Banfield, 1974:305-307; Feit, 1969:111; Webb, 1974:33).

Small Game and Furbearers.

Snowshoe Hare (*Lepus americanus*).

Hare can be found throughout the forested regions. Their population seems to grow and shrink over a cycle of roughly seven to ten years.

Habitat. In the summer, hare eat grasses and herbs and the new leaves of deciduous brush. In the winter they browse more on the woody parts of both deciduous and coniferous trees. Some preferred hare habitat include aspen and poplar groves, old burns, mixed forest and open jack pine forest. Hare follow well-worn runways that criss-cross their territory. Summer trails run over grasses and/or sphagnum mosses and may be re-used from year to year. Winter runways over snow are less permanent.

Seasonal Patterns. Hare remain active through most of the winter, although they move around very little during the coldest months.

(Banfield, 1974:81-83; Glover, 1962:31; Rogers and Black, 1976:10; Winterhalder, 1978:231).

Porcupine (*Erethizon dorsatum*).

Porcupine inhabit most regions south of the tundra.

Habitat. Porcupine like to rest in conifer trees, and feed on aquatic, deciduous and coniferous vegetation - young greens and leaves in the summer, while in winter they eat the inner bark of conifers and of hardwood trees (when available). In the boreal forest, they can most often be found in deciduous stands during the spring and summer, favouring jackpine and mixed forest in the fall and winter.

Seasonal Patterns. Porcupine remain active through the winter.

(Banfield, 1974:233-236; Irimoto, 1981a:103).

Beaver (*Castor canadensis*).

Beaver can inhabit pretty well any creek or stream with abundant aspen, poplar, birch and/or willow along shore, and rarely travel more than about 150 m from these shorelines. In the Southern Indian Lake region, they are most common on the ponds and smaller streams leading into the southern parts of Southern Indian Lake, a little inland from the lake itself. They are rare on large lakes and rivers.

Habitat. Besides eating aquatic vegetation, beaver browse on deciduous trees and shrubs, especially aspen and poplar, so they most often build their lodges at a narrows along shorelines bordered by early deciduous forest patches. From their regular grazing of the shoreline vegetation, beaver manage to maintain the forest near their lodges in deciduous stages and so do not have to move often, once established in a place. The best locations for their lodges are the slower, meandering streams with low to medium banks that are not subject to flooding, and also some shallow, muddy bays on smaller lakes and ponds.

Seasonal Patterns. Beaver remain near their lodges all year. They are active through the winter, but tend to stay within the frozen lodge and under the ice, where they have stored food for the season.

(Banfield, 1974:158-161; Feit, 1969:105,106; Webb, 1974:32).

Muskrat (*Ondatra zibethicus*).

Muskrat are found in most regions where marsh and deciduous forest exist. They are common along marshy sections of the Churchill River and Southern Indian Lake - particularly in the Leaf Rapids, South Bay and Northern SIL localities.

Habitat. Muskrat live chiefly on aquatic and marsh vegetation - above water parts in the summer, and submerged parts in the winter. They spend most of their time near lodges that they build in lakes, streams or marshes that are between 1.5 to 4 m deep and have plenty of reedy vegetation.

Seasonal Patterns. Unlike beaver, muskrat often abandon their houses at freeze-up, taking to bank dens for the winter where they remain active. Even when they can remain in the house through the winter, floods commonly force them out by spring. New lodges are built in August or September.

(Banfield, 1974:198-200; Jarvenpa, 1980:17; Webb, 1974:33).

River Otter (*Lontra canadensis*).

River Otter can be found in all ecological zones represented in Manitoba. They are fairly common on the Churchill River.

Habitat. Otter hunt underwater for fish and other small water life and bed in dens, old beaver lodges or thickets along shorelines of rivers, lakes and large marshes. They prefer locations with deep, clear water. Otter are attracted to rapids for hunting, especially in winter when these sometimes remain open (Rogers and Black, 1976:8). They also seem to be irresistibly drawn by productive fishing nets.

Seasonal Patterns. Otter remain active in the winter.

(Banfield, 1974:341-343).

Mink and **Weasel** (*Mustela* spp.).

Mink, weasel and ermine are found throughout all parts of Manitoba, including all around Southern Indian Lake.

Habitat. Mink eat fish and small mammals, and den along stream banks. They favour shorelines of streams, lakes and marsh fringed with deciduous vegetation. They decline in areas of mature spruce forest. Weasel and ermine prefer mixed forest habitat but can be found in almost any environment.

Seasonal Patterns. These animals remain active through most of winter, mink travelling under the ice.

(Banfield, 1974:320-322, 325-328, 330-331; Feit, 1969:103; Webb, 1974:12).

Marten (*Martes americana*) and **Fisher** (*Martes pennanti*).

Marten and fisher are found throughout most of the boreal forest. Fisher are less common than marten.

Habitat. These carnivores eat mostly small mammals, birds and fish. They live year-round in closed coniferous forest patches.

Seasonal Patterns. Both marten and fisher remain active through most of the winter.

(Banfield, 1974:316-320; Feit, 1969:103).

Wolverine (*Gulo gulo*).

Wolverine can be found throughout the boreal forest and parts of the tundra.

Habitat. Although they eat a wide variety of plant and animal foods, wolverine are primarily scavengers. They are most plentiful where there are many ungulates available - deciduous and coniferous forest patches.

Seasonal Patterns. Wolverine remain active through the winter.

(Banfield, 1974:333-334; Feit, 1969:111).

Wolf (*Canis lupus*).

Wolf can be found in most ecological zones and are quite common in the boreal forest.

Habitat. While they eat small game too, wolves are most closely linked to the ungulates. So when in the boreal forest, they are most common in the deciduous and coniferous patches.

Seasonal Patterns. Wolves remain active through the winter.

(Banfield, 1974:290-292; Feit, 1969:111).

Red/Silver/Cross Fox (*Vulpes vulpes*).

Fox can be found in all parts of Manitoba.

Habitat. Fox like to den in sandy/gravelly riverbanks. Because they eat mostly grubs and small mammals they can be found in pretty well any part of the boreal forest. They prefer more open habitat, however - shorelines, clearings, tundra - and so are rare in closed spruce forest.

Seasonal Patterns. Fox move into their dens in the spring and remain in family units through summer. In fall and winter, fox are more solitary.

(Banfield, 1974:299-300; Feit, 1969:112).

Lynx (*Lynx lynx*).

Lynx can be found throughout all forested areas. In the Southern Indian Lake region, they are slightly less common in the northern portion than in the southern.

Habitat. Lynx are closely tied to hare, their principle game, and so can be found feeding anywhere that hare are. They seem to prefer the dense brush of closed spruce forest for living in, however.

Seasonal Patterns. Lynx remain active through winter.

(Banfield, 1974:349-350; Feit, 1969:110; Webb, 1974:32).

Game Birds.

Ruffed Grouse/Partridge (*Bonasa umbellus*).

Ruffed Grouse are abundant in the boreal forest.

Habitat. Ruffed grouse prefer deciduous and mixed wood forest and avoid mature coniferous stands. They are found often in the poplar or willow along shorelines, and in forest clearings.

Seasonal Patterns. Ruffed grouse live in the boreal forest year-round, but their populations decline quickly in mid-winter.

(Drage, 1982:22; Godfrey, 1966:109,110; Winterhalder, 1978:239).

Spruce Grouse (*Canachites canadensis*).

Spruce Grouse are found throughout the boreal forest.

Habitat. Spruce grouse feed on berries in the summer and fall, and spruce buds through the winter. They can be found in mixed forest, muskeg, forest clearings and in berry patches, but they live mostly in mature spruce forest stands. They like to nest on dry ground near muskeg or bog.

Seasonal Patterns. Spruce grouse are year-round residents of the boreal forest.

(Godfrey, 1966:107; Williams, 1969:105,106; Winterhalder, 1978:239).

Waterfowl.

Canada Goose (*Branta canadensis*).

Southern Indian Lake - particularly its northern end - is used by geese as a staging area during their spring and fall migrations, for feeding and resting, but very few birds nest there through the summer. Those geese who do nest on Southern Indian Lake do so mostly along bay shorelines at the north end, and a few nest around South Bay.

Habitat. While migrating, Canada geese like to rest in wet meadow and muskeg areas, and feed mostly off of low, marshy shorelines of lakes and slower streams and rivers. While most geese nest in the Hudson Bay Lowlands, some do spend the summers farther west.

These seem to be mostly confined to a few marshy areas along creeks and ponds draining into the lower Churchill River (including those around the northeast end of Southern Indian Lake). These geese nest in shallow marshy areas with willow and sedge shorelines, commonly in the backwater ponds that form below some rapids, in inlets, or in bays. They avoid fast waters, and sandy and rocky shoreline for nesting.

Seasonal Patterns. Geese, ducks and swans all migrate through the boreal forest in the spring on their way to nesting grounds farther north. They are often first seen at the beginning of break-up, at the first open water (rapids, fast narrows and eddies). The large numbers of migrating geese passing over central Manitoba tends to have dropped off by the end of May. A return migration takes the geese back through the region in the fall, around September.

(Godfrey, 1966:48; Raveling, 1977:38,39; Webb, 1974:38,46; Williams, 1969:41; Winterhalder, 1978:453).

Ducks.

Several species of duck use lakes and streams in the boreal forest for staging or nesting.[3] On Southern Indian Lake, ducks nest mostly at its northern end, and they are also found in South Bay.

Habitat. Although the specific locations for feeding, resting and nesting vary for different species of ducks, they all tend to most favour shallow, quiet waters with aquatic vegetation: ponds, marshy lake margins, shallow bays and inlets, grassy streams, and sometimes pocket marshes along rivers. Low bedrock and low bedrock-controlled shorelines with offshore marsh seem to be preferred for nesting.

Seasonal Patterns. Ducks appear with the first open water. Some continue to migrate northwards, but many remain to nest in the boreal forest lakes and streams for the summer. By mid-summer, most ducks will leave the nesting area with their young for the water bodies where they moult - during which time they are flightless. The return migration south follows the moult, in the fall.

(Godfrey, 1966:55-83; Poston et al., 1990:35; Webb, 1974: facing 39, 43).

Whistling Swan (*Olor columbianus*).

Swans, as a rule, do not nest in the boreal forest much at all. They can be seen in small numbers during the spring and fall migrations to and from the Hudson Bay coast. In Southern Indian Lake they are found mostly at the north end and also sometimes in South Bay.

Habitat. Those swans that use boreal forest waters for spring and fall staging like to feed mainly in marsh areas and river shallows.

(Godfrey, 1966:47; Webb, 1974:43,46).

Herring Gull (*Larus argentatus*).

Herring gulls are common in most regions. On Southern Indian Lake they are most abundant in its northern portions.

Habitat. Gulls nest in colonies, most often on small, treeless islands with low bedrock shorelines, or sometimes on cliff ledges.

(Godfrey, 1966:178; Poston et al., 1990:73; Webb, 1974:12,50).

Loon (*Gavia immer*).

Habitat. Like gulls, loon tend to nest on low, rocky islands.

(Godfrey, 1966:9; Webb, 1974:43,46).

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[1] Unless otherwise noted, distributions of wildlife in the Southern Indian Lake region are based on observations made prior to the Churchill River diversion. Distributions of certain species have changed with the changes in the landscape associated with the diversion, and can also be expected to have altered from time to time with other factors such as large forest fires, large-scale climate changes, etc.

[2] The Kaminuriak herd is historically the easternmost herd of barren-ground caribou, using northern Manitoba as part of its winter range (Simmons et. al., 1979).

[3] See Kroker (1990:31,32) for a tentative list of birds in the Southern Indian Lake region.

APPENDIX 4. FISH AND FISHERIES.

Some Common Food Fishes in Boreal Forest Lakes.

Spring Spawners.

Pickerel/Walleye (*Stizostedion vitreum vitreum*).

Pickerel are found mostly in clear, calm waters of larger rivers and lakes. They are widespread in the Southern Indian Lake region.

Pickerel spawn in clean, shallow near-shore water over coarse sediment or rock (i.e. siltless bottoms). Usually they ascend streams or rivers and spawn at the first set of rapids encountered, concentrating at the downstream end of the obstruction. Pickerel begin to move towards their spawning grounds in the late winter, prior to break-up. They remain there for several weeks before returning downstream after the melt. At this time pickerel become quite abundant at the mouths of the spawning streams, but within a few more weeks are more dispersed throughout the lakes and rivers again. At any time of year pickerel can be expected to be more concentrated at the base of rapids and other natural obstructions than elsewhere (Ayles and Koshinsky, 1974:55; Rostlund, 1952:39; Weagle and Baxter, 1973:43,46,56; Winterhalder, 1978:255).

In the Southern Indian Lake region, pickerel are most concentrated in the spring at the northernmost end of Southern Indian Lake,[1] at the northwest end, and in Lake Opachuanau. Prior to the Churchill River diversion, eight main spawning locations had been identified. These were at the first set of rapids on: the Barrington River, the Barlow Lake drainage, the McLeod Lake drainage, the Muskwesi River, the Waddi River, the Cousins Lake drainage, and tributary streams of the Churchill River upstream of Southern Indian Lake. Sandhill Bay was the eighth important spawning area. At other times of the year pickerel are widely dispersed, but continue to be most abundant at the northern end of Southern Indian Lake, favouring small shallow bays and inlets (Ayles and Koshinsky, 1974:16; Peristy, 1989:67; Weagle and Baxter, 1973:52).

Sauger (*Stizostedion canadense*).

Sauger favour the same sorts of habitat as pickerel. They spawn in the spring, mostly off of reefs and coarse sediment and rocky lake shore. In Southern Indian Lake they have been recorded most abundant in the South Bay area (Ayles and Koshinsky, 1973:77,83).

Yellow Perch (*Perca fluviatilis*).

Like pickerel, perch favour clear, calm waters of lakes, and can be found in the quieter parts of clear streams. They spawn in the spring, in shallow, weedy bays of 1.5 to 3 m depth. Perch were found mostly in South Bay of Southern Indian Lake (Ayles and Koshinsky, 1974:90,92; Rostlund, 1952:39).

Jackfish/Northern Pike (*Esox lucius*).

Jack can be found in most rivers and lakes in northern Manitoba. They prefer clear to slightly murky, quiet waters and spend most of the year close to shore in shallow, weedy bays and inlets. Jack spawn in the early spring along these same shallow marshy shorelines of lakes and rivers, and are also commonly seen at this time in the ponds at the base of rapids (Ayles and Koshinsky, 1973:64,65; Rostlund, 1952:34,35; Williams, 1969:255,256).

In Southern Indian Lake, jack are most common at the north end of the lake, where favourable habitat is abundant (Peristy, 1989:67).

White Sucker (*Catostomus commersonnii*).

Suckers are abundant in streams and rivers and in some lakes. They are found all through the Southern Indian Lake region. White sucker prefer clear, shallow water, and feed at the bottom. They spawn in spring, after the pickerel, ascending rivers and streams to spawn over shallows with coarse sediment or rock bottom. They are common at the base of rapids and over gravel shoals in some lakes at this time (Ayles and Koshinsky, 1974:84; Cleland, 1982:767; Winterhalder, 1978:256).

Red Sucker/Sturgeon Sucker (*Catostomus catostomus*).

Red sucker prefer to live and feed in deeper waters, 12 m or greater in depth, but spawn upstream over shallows in the spring (Ayles and Koshinsky, 1974:88).

Lake Sturgeon (*Acipenser fluvescens*).

Sturgeon, far more plentiful prior to the introduction of commercial fishing than they are now, were found in many large rivers and larger shallow lakes on the Shield. There are frequent references in fur trade journals to taking sturgeon at rapids along the Churchill River (e.g. HBCA, E.3/3:26d; PAM MG1 B14, Ia:155). Whether or not sturgeon were previously present in significant numbers in Southern Indian Lake itself is uncertain, but they appear to be rare to absent there now (D. Bodaly, personal communication).

The types of habitat that sturgeon prefer is not well known, but they are said to be fattest and best-tasting when taken out of silty waters (Glover, 1962:44,61). They are most common in the largest lakes, and spawn upstream large rivers in the spring, after pickerel and suckers. They normally spawn in near-shore shallows, and are especially common at the base of rapids. Sturgeon are bottom feeders and so are only near the surface when spawning (Rostlund, 1952:10,11; Winterhalder, 1978:257), which is perhaps why they have not often been seen in Southern Indian Lake.

Fall Spawners.

Whitefish (*Coregonus clupeaformis*).

Whitefish live primarily in lakes, particularly the larger lakes, and they tend to remain in deep waters except when spawning. They are abundant in many northern Manitoba lakes and the whitefish fishery of Southern Indian Lake prior to the Churchill River diversion had been one of the most productive anywhere on the Shield (Hecky and Ayles, 1974a:9).

Whitefish approach shallower waters just before freeze-up to spawn. Most tend to congregate off of reefs and rocky islands and lake shore at this time, although a few may

move up tributary streams a short ways. They prefer to spawn over coarse sediment or rocky bottoms in waters between about 1.5 and 3 m deep.[2] During the rest of the year, whitefish are dispersed over more varied habitat, but remain of best quality in water with coarse sediment or rock bottom ("clean water"). They are found farther offshore and in deeper water, particularly in the late summer and winter (Cleland, 1982:767; Peristy, 1989:26,88; Rostlund, 1952:29; Weagle and Baxter, 1973:6,17,19,24).

In Southern Indian Lake, whitefish were most concentrated in the fall at the northeast end of the lake. They migrated from all over the lake to their primary spawning grounds north of Long Point, and were relatively abundant there throughout the rest of the year. Whitefish were common at the very north end of Southern Indian Lake as well, but were of lesser quality than in the northeast (which includes the area just north of Long Point and around the Churchill River outlet at Missi Falls). They could be found in lesser numbers in other parts of the lake, but were at no time abundant in South Bay where the water has always been silty (Peristy, 1989:5,24; Weagle and Baxter, 1973:20,24,120).

Cisco (*Coregonus artedii*).

Cisco spawn in the fall in roughly the same types of locations as whitefish (Ayles and Koshinsky, 1974:76).

Lake Trout (*Salvelinus namaycush*).

Lake trout are restricted to deep lakes (Rogers and Black, 1976:6). As Southern Indian Lake is relatively shallow over much of its area, trout are rare (Ayles and Koshinsky, 1974:15). Lake trout spawn just before the freeze-up, moving to clear, shallow water over coarse sediment or rock reefs. They disperse and take to the deeper parts of the lakes in winter, and again in the summer (Cleland, 1982:767; Irimoto, 1981a:42).

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[1] Except where noted, distributions of fish in the Southern Indian Lake region refer to those recorded prior to the Churchill River diversion.

[2] The maximum depth recorded for spawning whitefish in Southern Indian Lake was 6.75 m (Weagle and Baxter, 1973:6).

APPENDIX 5. DIVISION OF LABOUR IN CREE AND DENÉ SOCIETIES.

In both Cree and Dené societies, labour and other activities were divided up loosely by gender and to some extent by age so that each member of society had some specific role to play - some particular set of contributions to make - and their use of the land and its resources varied accordingly. Often, this division of labour was not only functional but spatial as well.

Among the Cree, the adult men were primarily concerned with the hunting of the larger game animals and furbearers. Men also did most of the wood-working: making and repairing wooden items like tool handles, paddles, sleds and toboggans, and snowshoe frames. Men, especially older men, constructed the canoe frames. They made stone and bone tools of various sorts for their use in hunting and wood-working, and some for use by the women. Older boys worked with their fathers and grandfathers, learning these and other skills from more experienced hands (Brightman, 1993:262; Burpee, 1973:42; Martijn and Rogers, 1969:102, 103; Rogers and Rogers, 1959:135; Smith, 1981a:261; Williams, 1969:177).

Cree women gathered and prepared most of the plant foods eaten as well as other useful plant materials. Berry picking and maple and birch tapping for sugar making were among the few activities that could take women away from the base camp for days or weeks, and they were usually accompanied by their children as well as by elders of both sexes on these and other plant collecting excursions. Women, children and elders set and tended snares and traps for smaller furbearers and game, including hare, grouse and waterfowl, normally within a few kilometers of camp (Ahenakew and Wolfart, 1992:149,151; Brightman, 1993:8,126; Flannery, 1995:13; Honigmann, 1969:33; Martijn and Rogers, 1969:103; Meyer, 1985:221; Rogers and Black, 1976:32; Tanner, 1979:60; Winterhalder, 1978:469).

While the activities of men tended to take them far away from camp, women were

responsible for most of the in-camp work, including setting up and moving camp. Women and older children usually collected and cut most of the firewood, a time consuming activity, and collected the water. When game was killed a reasonable distance from camp, women were often responsible for retrieving it, or else for moving the camp closer to the kill if it was farther away. While the hunters might do some initial butchering of their kills in the bush, women did most of the later processing: the final butchering and meat distribution, the cooking, the drying of meat, and preparation of pelts and hides. Women did most of the leatherwork, from the cleaning and stretching of the hides, to sewing and repair of clothing, footwear and tent coverings, as well as their laundering. They laced the snowshoe frames made by the men. The women made and repaired many of the tools and utensils that they used in their daily activities, such as clay pots, bark baskets and other bark items, cordage, snares and nets, including fish nets. It stands to reason that they at least sometimes if not often made their own stone and bone tools: scrapers, knives, needles, awls. Women - the mothers and grandmothers - were the primary caretakers of the younger children, and were usually helped by the older girls who learned from them this and other skills. Where women went, the young children normally went with them (Ahenakew and Wolfart, 1992:149,151,155, 225; Brightman, 1993:8,126; Drage, 1982 [1748]:34; Martijn and Rogers, 1969:95,103; Rogers and Rogers, 1959:135,136; Smith, 1981a:261; Syms, 1977:59; Tanner, 1979:60; Williams, 1969:177,178). This load rarely let up. Knight (1968:60) wrote of the Rupert House Cree that: "Despite the fluctuations in the activity and location of the men, most adolescent and active married women follow a full schedule of cooking, cleaning, net repairing, preparing fur, making and mending clothes, and caring for children - every week, every month, ever year."

One of the activities in which almost everyone in Cree society participated was fishing. Men apparently did most of the spear and harpoon fishing (Brightman, 1993:262). The men also regularly set the gill nets, including those set under the ice in the winter (Ahenakew and Wolfart, 1992:147), and may have built the fish weirs. Men sometimes

tended the gill nets, weirs and set lines as well, but these activities more often fell to the women, youths and elders of either sex, especially when the younger men were away hunting (Brightman, 1993:8,262; Martijn and Rogers, 1969:103; Rogers, 1963a:72; Williams, 1969:178). Just about anybody might throw in a baited line and angle for fish, winter or summer (Norman, 1982:15). During large fish spawning runs when the women were more occupied with the splitting and drying of the fish (Meyer, 1985:200; Smith, 1975:179), the men were probably left to do more of the fishing itself than they would in other times.

The division of labour outlined above was not a set rule, however. Few, if any, of the day to day activities of adult Cree were carried out solely by men or solely by women. Husbands and wives often helped each other in tasks typically assigned to one or the other. For example, men might help the women stretch the larger hides, set up camp, and collect firewood (Brumbach and Jarvenpa, 1989:134; Martijn and Rogers, 1969:102,103). Berry picking could occupy the whole family (Linklater, 1994:85). Women commonly assisted men in the manufacture of the canoes; they sewed on the coverings, caulked the seams, and gathered many of the necessary materials (Rogers and Black, 1976:32; Van Kirk, 1980:61). Because various activities often took men away from the base camp for extended periods and because women sometimes also went off on special tasks without their husbands, each had to be capable of living in isolation of the other. So men, although they very rarely cooked, mended, or performed other such domestic tasks when they were with their families, must have done these things for themselves when they were away. Likewise, women could hunt and trap for themselves, including taking some large game, when left on their own (Brightman, 1993:126; Flannery, 1995:35,36; Linklater, 1994:88; Van Kirk, 1980:58,59).

The division of labour in Dené society was roughly the same as for the Cree, although Dené men may have done more of the fishing than their Cree counterparts (see, for details, Sharp, 1981:227,232,235; Smith, 1982:17; Smith, 1981b:279; Van Stone,

1974:78,79). Irimoto (1981a:145; 1981b:54,55) pointed out that among Dené families in recent times, the division of labour by sex and age has also been a spatial division. Adult men were responsible for most activities that took place more than a kilometer from camp. The women were largely occupied by camp-related activities, and, with elders and older children of both sexes, also carried out more of the trapping, fishing and gathering activities that occurred within a few kilometers from camp than the men, although both sexes worked in this near-camp area at some time.

This spatial division of labour seems to be a general pattern for subarctic societies, although in earlier times when families were more mobile, women without young children were known to have regularly assisted men on hunting and fishing trips that took them farther from camp, and sometimes went out on their own on similar pursuits (Brumbach and Jarvenpa, 1997:418,426; Knight, 1968:56). As with the Cree, both Dené men and women were capable of living in isolation of each other as necessary (Sharp, 1981:235,237).

APPENDIX 6. SOIL MOISTURE CLASSES AND ASSOCIATED FOREST COMMUNITIES.

Arid Sites: rock outcrop and higher eskers and gravel beach ridges.

These are characterized by limited if any tree growth, of jack pine and occasionally white spruce or aspen. Reindeer moss (*Cladonia* Spp.) is common, and bearberry may be present.

Dry Sites: higher beaches, outwash plains and moraine ridges.

Jack pine dominate the forest cover in these sites, and aspen is also common. White and black spruce may grow poorly. Reindeer moss and bearberry are common in the understory. Some juniper may be found.

Fresh Sites: lower beaches, outwash plains and moraine ridges, on slopes, and intermediate terraces.

Black spruce, white spruce, jack pine and aspen all grow well on these sites. Where black spruce is the climax forest, it may come to dominate. Buffalo berry, juniper, bunchberry and some bearberry grow in the understory.

Moist Sites: low areas, at the lower margins of ridges and outwash plains, on till plains, clay flats, higher flood plains.

Black Spruce dominates, with white spruce, jack pine, aspen and tamarack sometimes growing as secondary stands. Dogwood and bunchberry are common in the understory, and buffalo berry, juniper and alder occur sporadically.

Very Moist Sites: depressions in beach, in outwash and in clay deposits.

Each of black spruce, white spruce, jack pine, aspen and tamarack may grow in these sites, but black spruce is the climax species. Dogwood, bunchberry and alder are common in the understory, and there may be some bog cranberry.

Wet Sites: depressions in till and in clay deposits.

Black spruce and tamarack will dominate, and aspen will grow in early successional stages. Alder, marsh marigold and bog cranberry are abundant.

Saturated Sites: on deep, organic terrain (peat bogs).

These are poor sites for tree growth and what trees there are tend to be stunted. Black spruce and tamarack are the only tree species to grow here. Sphagnum moss, marsh marigold and Labrador tea are abundant.

(Department of Natural Resources, n.d.:12)