

**University of Alberta**

Schaeffer Creek Campsite (MIVm-6), a Possible Cold Season Site  
in Southwestern Old Crow Flats, Northern Yukon Territory

by

Jo-Ann Marvin

A thesis submitted to the Faculty of Graduate Studies and Research  
in partial fulfillment of the requirements for the degree of

Master of Arts

Department of Anthropology

©Jo-Ann Marvin  
Fall 2013  
Edmonton, Alberta

Permission is hereby granted to the University of Alberta Libraries to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only. Where the thesis is converted to, or otherwise made available in digital form, the University of Alberta will advise potential users of the thesis of these terms.

The author reserves all other publication and other rights in association with the copyright in the thesis and, except as herein before provided, neither the thesis nor any substantial portion thereof may be printed or otherwise reproduced in any material form whatsoever without the author's prior written permission.

## **Abstract**

In this thesis, Schaeffer Creek Campsite (MIVm-6), located in the Old Crow Flats, northern Yukon Territory, is identified as a possible cold weather short-term campsite dating to the 1920s. This discovery is significant, as few archaeological sites in the region have been identified as cold weather occupations. A discussion of cold weather behaviour and adaptations from oral history research and ethnography complement the analysis. The purpose of this study is to dispel the idea that life during cold weather is harsh and intolerable. The discussion and analysis add to the corpus of knowledge of archaeological sites in the area as well as an understanding of behaviour and technological adaptations during cold weather, which warrant further study.

## **Acknowledgments**

I would like to thank my supervisor, Raymond Le Blanc. His support and patience and timely responses over this long process are greatly appreciated. I am grateful for the opportunity to work on this topic in such an amazing part of Canada. The fieldwork and experience with the wonderful community of Old Crow has been phenomenal.

To the community of Old Crow and the Vuntut Gwitchin First Nation, I am indebted. I appreciate the opportunity to contribute to a small part of their heritage. Megan Williams, VGFN Heritage Manager, provided local logistical support. She aided and arranged the interviews, facilitated access to the VGFN archives, and was willing to help with anything I needed. Thank you to Robert Bruce Jr. for acting as translator during the interviews and Mary Jane Moses for aiding with the interviews as well as transcribing and translating the audiotapes. Special thanks for help and companionship while I was in Old Crow go to: Stephen Frost Sr., Hugh Charlie, Hannah Netro and Robert Bruce Jr. Shirleen Smith, thank you for sharing your lodging with me while I stayed in Old Crow, as well as being a source of information while in the field. Thank you to all of the elders I was able to speak with formally and informally: Charlie Thomas, Lydia Thomas, Alfred Charlie, Irwin Linklater, Robert Bruce, Jr., Stephen Frost Sr., and Hannah Netro.

I would like to thank Ruth Gruhn and Alan Bryan for introducing me to archaeological fieldwork. I will always look back at the three seasons in Baja, Mexico, with great fondness. To the staff of the Department of Anthropology, I thank you for all of your help over the years. To Mélanie Fafard, whom I have never met, I owe thanks for all of her hard work in excavating Schaeffer Creek Campsite, and for all of the preliminary work on the faunal and artifact collection.

Financial support for fieldwork was provided through the Canadian Circumpolar Institute. The University of Alberta provided TA and RA opportunities at the beginning of my graduate program.

To Jeff Marvin, thank you for help with drafting the maps and diagrams, and for cleaning up my images. Thank you for all of your support and for taking over a year off to care for our girls while I slowly worked to finish. A great many thanks are owed to all of my family for support and help with the kids; I couldn't have done it without you. And finally, I want to thank the most important people in my life, my two girls, Anna and Ella, for their patience and unconditional love.

## Table of Contents

Chapter 1: Introduction .....	1
Background .....	1
Study Area .....	4
Objectives .....	4
Methods .....	5
Scope of Report .....	5
Chapter 2: Regional Framework .....	6
PART ONE: Environmental Context .....	6
Introduction .....	6
Geology and Physiography .....	6
Climate .....	7
Vegetation .....	7
Fauna .....	8
PART TWO: Historical Context .....	12
Early and Later Prehistory of the Old Crow-Northern Yukon Area .....	12
Historic Period .....	14
PART THREE: Cultural Context .....	18
Introduction .....	18
The Annual Subsistence of the Van Tat Gwich'in .....	18
Chapter 3: Cold Weather .....	23
Introduction .....	23
Misconceptions of Cold Weather in the Subarctic .....	24
References to Cold Weather in the Literature .....	26
Cold Weather Adaptations: Biological or Behavioural .....	30
Oral Transmission of Knowledge .....	31
Discussion .....	32
Conclusion .....	33
Chapter 4: Oral History .....	34
Introduction .....	34
Background .....	34
ARCHIVAL DATA .....	35
Schaeffer Creek .....	35
Old Crow Flats .....	36
Winter and Ways of Life in Cold Environments .....	39
INTERVIEW DATA .....	46
Schaeffer Creek .....	46
Old Crow Flats .....	47
Winter and Ways of Life in Cold Environments .....	48
Summary .....	52
Discussion and Concluding Remarks .....	53
Chapter 5: Archaeology .....	56
General Description .....	56
Excavation Strategy .....	56
Stratigraphy .....	58

Features .....	58
Feature A (House #1) .....	61
Feature B .....	61
Feature C (House #2) .....	64
Feature D (Elevated Cache) .....	66
Summary .....	66
Artifact Descriptions .....	66
Locally Manufactured Goods .....	68
Imported Manufactured Goods .....	79
Chapter 6: Faunal Analysis .....	96
Introduction .....	96
Methods .....	96
Quantitative Analysis .....	97
Seasonality .....	97
Bone Alterations .....	99
Discussion .....	100
Conclusion .....	102
Chapter 7: Discussion and Conclusion .....	104
Introduction .....	104
Chronology .....	104
Occupation and Function(s) .....	106
Seasonality .....	107
Recycling .....	109
Comparison with Other Sites .....	111
Cold Weather Adaptations and Schaeffer Creek Campsite .....	113
Conclusion .....	115
References Cited .....	116

## **List of Tables**

Table 1. Summary of the Faunal Assemblage by Taxa .....	97
Table 2. Summary of Bone Alterations .....	100
Table 3. Snowshoe Hare Element Summary .....	101
Table 4. Moose Element Summary.....	101
Table 5. Caribou Element Summary.....	102

## List of Figures

Figure 1. Map of the Northern Yukon .....	2
Figure 2. Southern Range of the Van Tat Gwich'in .....	13
Figure 3. Site Map of Schaeffer Creek Campsite .....	57
Figure 4. Feature A (House #1) Picture .....	59
Figure 5. Feature B Picture .....	59
Figure 6. Feature C (House #2) Picture .....	60
Figure 7. Feature D (Elevated Cache) Picture .....	60
Figure 8. Feature A (House #1) Diagram .....	62
Figure 9. Feature B Diagram .....	63
Figure 10. Feature C (House #2) Diagram.....	65
Figure 11. Feature D (Elevated Cache) Diagram.....	67
Figure 12. Stovepipe Flange Recovered from Feature A (House #1).....	69
Figure 13. Stovepipe Flange Recovered from Feature C (House #2).....	71
Figure 14. Blazo Can .....	72
Figure 15. Wooden Stretcher .....	76
Figure 16. Toboggan Composite.....	77
Figure 17. Trade Beads .....	80
Figure 18. Spring of a Foothold Trap .....	83
Figure 19. Euro-Canadian Trade Goods .....	84
Figure 20. Maple Syrup Can .....	87
Figure 21. (a) Container; (b) Incomplete Container .....	88
Figure 22. Metal Cans.....	89



Figure 23. Lids ..... 91

Figure 24. Household Equipment ..... 93

## Chapter One: Introduction

### Introduction

This thesis deals with the description and analysis of the Schaeffer Creek Campsite (MIVm-6), which is located in the southwestern section of the Old Crow Flats, northern Yukon Territory. The thesis will argue that the site location and artifact assemblage represents the remains of a cold weather campsite, likely related to trapping activities of the Van Tat Gwich'in, at some point in the 1920s. This conclusion will be supported by consideration of archaeological remains, oral history research and ethnographic information.

### Background

Archaeological examination in the northern Yukon, specifically the middle Porcupine basin, began in 1966 with the excavation of the Klo-kut (*Tl'oo K'at*)<sup>1</sup> site by William Irving. *Tl'oo K'at* (MjVl-1) was excavated more intensively by Richard Morlan in 1967 and 1968 (Morlan 1973). The site is a late spring/early summer location where caribou were intercepted during their migration north and has had continuous occupation from 1200 BP up to the present.

During the summer of 1967 Morlan also conducted extensive archaeological survey in the Old Crow Flats region and along the Porcupine River (Morlan 1973: 4). In 1970 Irving began a study in multiple locations to look for sites, focusing on the area around *Tl'oo K'at*. Between 1972 and 1974 Jacques Cinq-Mars continued this work. As a result of this work, the Late Prehistory of the region is well known and documented (Figure 1).

---

<sup>1</sup> Orthography follows Smith and VGFN (2009). Modern orthography is used when possible, but original names are maintained as used in source material. Name convention is as follows: for names with current usage/spelling, I will introduce the name as used in the source material and then follow with the current usage; either indicated by “now known as”, or by modern spelling following it in parentheses.

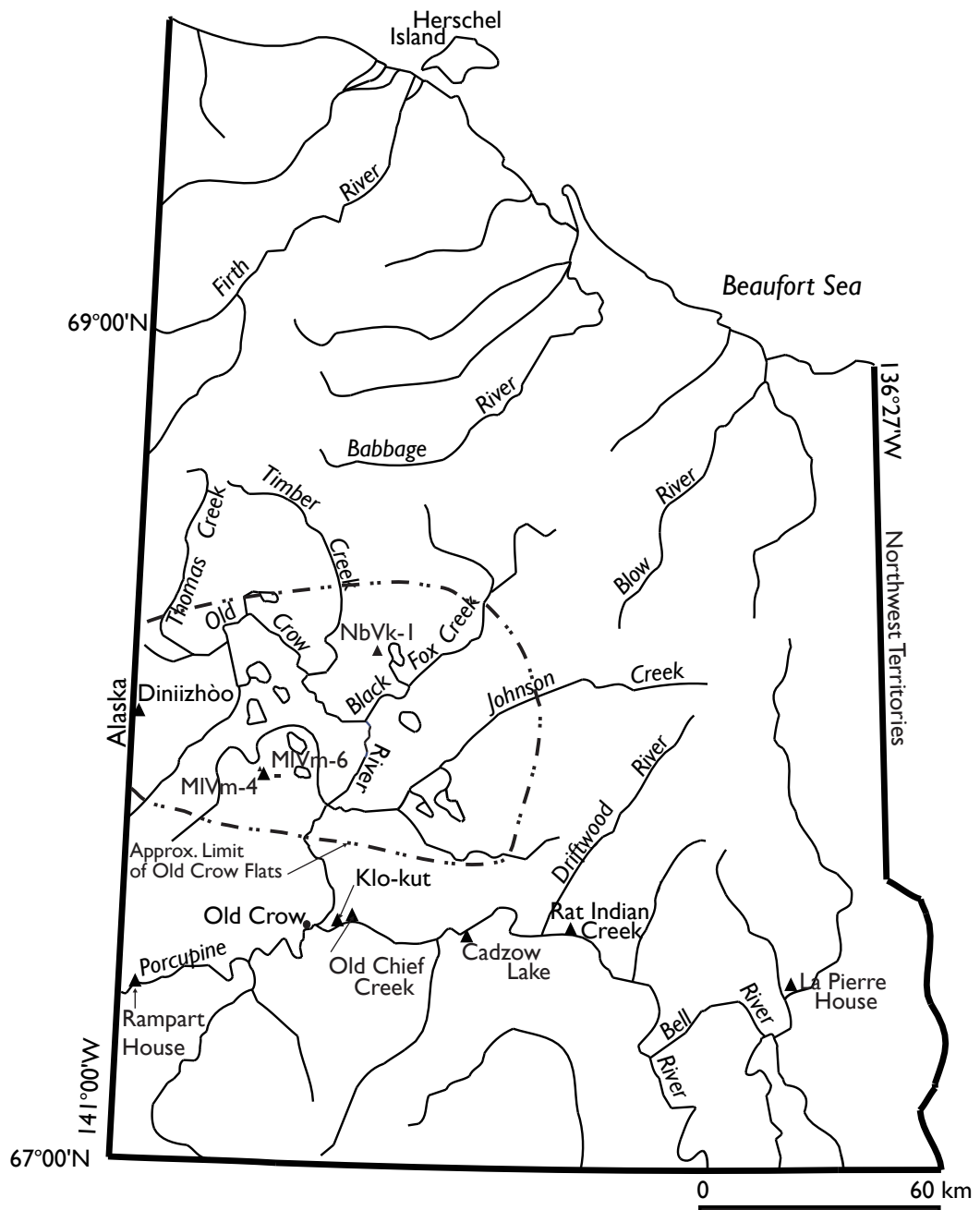


Figure 1. Map of the northern Yukon showing archaeological sites mentioned in the text. Image adapted from Raymond Le Blanc.

The archaeological reconnaissance of the late 1960s and 1970s focused on early human occupation of the area (Irving and Cinq-Mars 1974). From 1976 to 1978 Rat Indian Creek (MjVg-1) was excavated and was determined to be a major caribou hunting location as well (Le Blanc 1984). Through examination of sites in the Middle Porcupine as well as sites in the Yukon and Alaska, Le Blanc proposed two phases to accommodate the components at Rat Indian Creek: the Klo-Kut Phase (700 AD to the mid-nineteenth century) and the Old Chief Phase (900 BC to 700 AD).

In 1983 Jacques Cinq-Mars and Le Blanc discovered *Dechyoo Njik* (MIVm-4) in the southwestern portion of the Old Crow Flats. In 1985 Le Blanc returned to conduct limited testing that resulted in determining that the site was a fishing camp that was used during the most recent part of the Prehistoric Period, as well as during the Historic Period (Le Blanc 1986). Formal excavation and analysis of *Dechyoo Njik* were completed by Mélanie Fafard (Fafard 1999, 2001), who concluded that *Dechyoo Njik* was a gathering place occupied in the summer, when resources including waterfowl, fish and muskrats were collected. The proximity of *Dechyoo Njik* to Schaeffer Creek Campsite makes it an important site for comparative and continuity purposes, so MIVm-4 will be referred to throughout this thesis.

As part of the 1983 survey, Schaeffer Creek Campsite (SCC) was also discovered approximately 700 m north of *Dechyoo Njik* and 40 km north of the Porcupine River. Due to its location at a distance from Schaeffer Creek, initial assessment proposed SCC to be a winter campsite. The discovery of pieces of a toboggan further suggested a winter campsite. The excavation and examination of the site were conceived to add to gaps in knowledge of cold weather occupations in the area.

Mélanie Fafard completed excavation at Schaeffer Creek Campsite in 1997. However, for various reasons she did not complete the analysis of the site. Consequently, in 2006, Le Blanc provided the assemblage and documentation to me for this study.

## Study Area

Schaeffer Creek Campsite is located in the Old Crow Flats, which are found in the traditional lands of the Van Tat Gwich'in, and are a central and crucial resource area (Osgood 1936: 16). It is an important region for resources including muskrats, waterfowl, fish and moose (Smith and VGFN 2009: xlvvi). The Old Crow Flats were a destination for the Van Tat Gwich'in during times of scarcity (ibid.: 97). The translation of Old Crow Flats is, "Van Tat" in the Gwich'in language (ibid.: xxvii). The name they call themselves, Van Tat Gwich'in, is translated as, "People of the Lakes", demonstrating the centrality of this region to their existence.

## Objectives

The primary objective of this study is to confirm that Schaeffer Creek Campsite (SCC) is a cold weather site. The second objective is to document a cold weather site in the Old Crow Flats in order to increase knowledge of cold weather adaptations in this region of the subarctic. This analysis is done through examination of multiple sources to understand what has been recorded about cold weather behaviour and adaptations. These sources include ethnographic information, oral history archives and interviews conducted by the author.

As the Old Crow Flats are integral to understanding past lifeways of the Van Tat Gwich'in, one of the objectives of this study is to further increase knowledge of activities in the Old Crow Flats, expanding information provided by Fafard (1999) on traditional land use patterns in the Old Crow Flats. Schaeffer Creek Campsite is a unique opportunity to explore a cold weather campsite on the Old Crow Flats, as no site analyses of this type has been conducted thus far.

## Methods

The task of analysis of the material remains was given to the author in 2006. The thesis follows the format of Fafard (1999) to allow for regional comparison, where possible. Explorers' journals and ethnographies of the subarctic are examined to gain an understanding of cold weather behaviour and adaptations. Oral history interviews were conducted in the summer of 2007 in Old Crow and the oral history archives of the Van Tat Gwich'in were examined at that time. This approach was deemed the best way to gain knowledge and insight into cold weather directly. Artifact analysis follows historical work from the northern Yukon (Morlan 1972a) and Alaska (VanStone 1968; Oswalt and VanStone 1967; VanStone and Townsend 1970).

## Scope of Report

Chapter Two presents an environmental, historical and cultural overview of the Van Tat Gwich'in and the Old Crow Flats region. Chapter Three contains a discussion of cold weather behaviour and adaptations. Chapter Four presents data from the oral history archives of the Vuntut Gwitchin First Nation, as well as interviews conducted by the author that specifically discuss cold weather. Chapter Five and Six present the archaeological and faunal analysis of Schaeffer Creek Campsite. Chapter Seven is a discussion and conclusion on Schaeffer Creek Campsite and cold weather adaptations.

## Chapter Two: Regional Framework

### PART ONE: Environmental Context

#### Introduction

The environmental framework presented by Fafard (2001) relies substantially on Oswald and Senyk (1977), among other resources. That regional data is revised by Roots et al. (2004), which will consequently be used as the primary source for this chapter. In their adjustment of Oswald and Senyk (1977), Roots et al. (2004) reclassify the Old Crow Flats as a distinct ecoregion within the Old Crow Basin Ecoregion; this approach allows for a finer scale of regional data for the study area.

#### Geology and Physiography

The Old Crow Flats cover an area of 5970 km<sup>2</sup> (Roots et al. 2004: 115). The area is located in the northern Yukon, approximately 80 km north of the Porcupine River; it is crossed by the Old Crow River, which winds its way north from the Porcupine River, then turns westward to the Alaska border. The region was not glaciated during the Wisconsinan (110,000 to 10,000 years ago) (Hughes 1972: 6; Oswald and Senyk 1977: 70), but lower elevations were submerged under Glacial Lake Old Crow during the Pleistocene (Roots et al. 2004: 107).

The topography of the region is nearly flat, with only minor elevational differences; the basin lies below 300 a.s.l., with surrounding uplands between 300 and 600 m in elevation (Oswald and Senyk 1977: 70). Lakes cover 35% of the land surface of the Old Crow Flats, many of which are northwest-southeast oriented rectangular thermokarst lakes (Roots et al. 2004: 16). These lakes are still undergoing the thermokarst processes, are shallow and are seldom over 3 m deep (Oswald and Senyk 1977: 70). The water of these lakes contains dense amounts of algae and vegetation (Wiken et al. 1981: 96).

Soil formation has experienced cryoturbation throughout the whole region (Roots et al. 2004: 119). Frozen peat is underlain with thick glaciolacustrine sediments (ibid.: 116). Alluvium deposited by the Old Crow River or its tributaries covers other parts, and lacks permafrost near the surface (ibid.: 117). The Old Crow Flats lie in the zone of continuous permafrost (ibid.: 118).

## Climate

The climate of the Old Crow Flats Ecoregion is similar to the surrounding Old Crow Basin Ecoregion, but Old Crow Flats may experience colder temperatures when still and extremely cold air masses persist, compared to surrounding areas of higher elevation (Roots et al. 2004: 117). For the summer months, a weak low-pressure system with mild moist air predominates, while the winter is dominated by an Arctic high-pressure system. Spring and summer conditions begin a month later than in the southern Yukon (ibid.).

Mean annual temperatures are between  $-8^{\circ}\text{C}$  and  $-10^{\circ}\text{C}$ . Mean July temperature range from  $12^{\circ}\text{C}$  to  $15^{\circ}\text{C}$ , while mean winter temperatures range from  $-30^{\circ}\text{C}$  to  $-35^{\circ}\text{C}$ . Extreme maximums for the summer can reach  $33^{\circ}\text{C}$  to  $35^{\circ}\text{C}$ , while winter minimums are between  $-55^{\circ}\text{C}$  to  $-60^{\circ}\text{C}$ . Winter conditions can also occasionally be above freezing, while frost can occur at any time of the year. Winter is prolonged and lasts from October to mid-May (Roots et al. 2004: 117).

Precipitation is between 200 mm and 300 mm annually. June to August are the wettest months, while January to April are the driest (Roots et al. 2004: 117).

## Vegetation

Vegetation in the region consists of a combination of wetland, riparian, and aquatic community types. In the higher elevations tussock/medium shrub tundra is predominant (Wiken et al. 1981: 97). A large portion of the Old Crow Flats is underlain with thick peat (Roots et al. 2004: 120). Areas with extensive



permafrost have open stands of black spruce (*Picea mariana*), paper birch (*Betula papyrifera*) and occasional larch (*Larix laricina*) (ibid.: 37).

Roots et al. (2004: 44) categorize the Old Crow Flats as a Wetland Complex, while Rowe and Halliday (1972: 63) classify the Old Crow Flats in the Alpine-Forest Tundra region. The Alpine-Forest Tundra is characterized by open park-like stands of stunted white spruce (*Picea glauca*), alternating with grassy or shrubby vegetation. In the lower altitudes, black spruce dominates, alone or mixed with white spruce. Also with white spruce can be found Alaska birch (*Betula neoalaskana*), and occasionally tamarack (*Larix laricina*), aspen (*Populus tremuloides*) and balsam poplar (*Populus balsamifera*) (ibid.).

## Fauna

Detailed accounts of fauna found in the northern Yukon are provided in Le Blanc (1984: 7-15) and Morlan (1973: 33-56). Following Fafard (1999), only animals pertinent to the current study and study area will be discussed in the following section.

### *Mammals*

Among small mammals, four species of insectivores (shrews), thirteen species of rodents (including muskrat, beaver, and porcupine), and one lagomorph (snowshoe hare) are found in the Old Crow Flats (Roots et al. 2004: 43). Carnivores include wolf, red fox, lynx, wolverine, river otter, marten, ermine, least weasel, mink, black bear and grizzly bear. Of the variety of ungulates found in the Yukon, only moose and barren-ground caribou are found in the Old Crow Flats (ibid.).

Large muskrat (*Ondatra zibethicus spatulatus*) populations, in the hundreds of thousands, are found on the Old Crow Flats (Simpson et al. 1989). Muskrats are known to have cyclical population fluctuations every seven or eight

years (Balikci 1963b: 10), with recorded peaks in 1912, 1921-22, and 1928-33 (Rand 1945: 68). Muskrats are significant to the Gwich'in trapping economy (Balikci 1963b: 41), as procurement of muskrat increased after the fur boom of World War II (Graburn and Strong 1973: 102), but then fell in 1947 (ibid.: 103). The annual value of muskrat take increased from \$18,695 in 1931-32 to \$101,037 in 1941-42, with the average annual value per pelt of 45 cents in 1931-32 to \$1.97 in 1941-42 (Rand 1945: 68).

Of the other mammals found in the Old Crow Flats, beaver (*Castor canadensis*), porcupine (*Erethizon dorsatum*) and snowshoe hare (*Lepus americanus*) are ethnographically significant as food sources for the Gwich'in (Osgood 1936: 24). Carnivores that are significant as food animals include lynx (*Lynx canadensis*), and grizzly and black bear (*Ursus arctos horribilis* and *Ursus americanus americanus*). Some of the remaining carnivores are eaten at times of starvation, but are primarily trapped for pelts. These include fox (*Vulpes*), wolverine (*Gulo gulo*), otter (*Lontra canadensis pacifica*), marten (*Martes americana actiuoso*), ermine (*Mustela erminea*), mink (*Mustela vison ingens*) and muskrat (ibid.).

Moose (*Alces alces*) inhabit the areas along river valleys of the Old Crow Flats Ecodistrict (Wiken et al. 1981: 135). They are present in the Old Crow Flats during the summer, migrating out of the area in the fall (Roots et al. 2004: 121). This movement is confirmed by Fafard (2001: 8), based on her observation of moose presence during summer field seasons spent in the region. Le Blanc, at times, has observed a significant number of moose while flying over the Old Crow Flats during the summer (personal communication 2012).

Caribou (*Rangifer tarandus groenlandicus*) is the most important resource for the Gwich'in (Osgood 1936: 25). A multitude of references exist tracking movement, estimating the population size, and describing the Porcupine Caribou herd, which is the herd utilized by the Van Tat Gwich'in (Banfield and Jakimchuk 1980; Bente and Roseneau 1978; Hemming 1971; Jakimchuk 1974; Kelsall and Klein 1979; Renewable Resources Consulting 1971; Russell et al. 2002). The herd

range covers an area of about 250,000 km<sup>2</sup>, which includes parts of the northern Yukon, northeastern Alaska and the northwestern District of Mackenzie of the Northwest Territories (Wiken et al. 1981: 135).

The population of the Porcupine Caribou herd oscillates every year. For example, it was reported to be approximately 140,000 in 1964 (Hemming 1971: 11), and 105,000 in 1977 (Jakimchuk 1980: i). Russell et al. (2002: 4) report an increase in population from the early 1970s until 1989, and then a decline of approximately 3.5% per year, with a final count in 2002 of 123,000 caribou in the herd, which was 55,000 less animals than in 1989.

Summer and winter ranges of the Porcupine Caribou herd have remained similar over the past thousands of years (Wiken et al. 1981: 135). The herd winter in one of three places, and they use two separate routes for spring migration, the Old Crow Route and the Richardson Route (Jakimchuk et al. 1974: 1). In the spring migration, the herd has converged and is moving towards the calving grounds in Alaska by mid-June (ibid.). Most of the herd is in Alaska by August (ibid.: 2). Fall migration begins in September and occurs during the first snowfall (ibid.). The herd heads south following the same migrational route as in the spring. Rutting occurs in mid-October, when migration is complete (ibid.).

Small herds of caribou may occasionally winter in the Old Crow Flats (Jakimchuk et al. 1974: 16). When in the Old Crow Flats, caribou feed on sedges and muskrat push-ups (Peter Lord and Charlie Peter Charlie, cited in Jakimchuk et al. 1974: 16).

### *Birds*

The Old Crow Flats Ecoregion has the largest population of waterfowl in the Taiga Cordillera Ecozone in Canada (Roots et al. 2004: 115). Over 100 species of birds have been identified in the area, and over 500,000 birds utilize the Old Crow Flats for breeding, moulting, and staging (ibid.: 121). Ducks breed on the Old Crow Flats and an even greater number use the area for staging in the late summer

in preparation for fall migration (Wiken et al. 1981: 137). For an extensive list of specific species that inhabit the Old Crow Flats, see Roots et al. (2004: 121-122).

### *Fish*

Fish are an important resource to the Van Tat Gwich'in (Osgood 1936: 31). Fish species found in rivers and streams in the northern Yukon include round, broad and humpback whitefish, least cisco, arctic grayling, inconnu, and northern pike (Wiken et al. 1981: 138). Fish caught along the Porcupine River that are utilized by the Van Tat Gwich'in include king and dog salmon. King salmon are highly prized for their size and taste, but caught in small numbers, while dog salmon are caught in large numbers and are important economically for use as dog food (Balicki 1963b: 12).

Dog salmon reach Old Crow in the middle of August and intensive fishing begins in September and continues until early winter, when nets are used under the river ice. Arctic char is caught in early winter along the Firth River before the river freezes. The Old Crow River is rich in fish in late summer and autumn (Balicki 1963b: 13). In lakes, rivers and creeks around Old Crow, whitefish, grayling, loche, sucker and jackfish are caught in the autumn (ibid.).

Traditional winter fishing sites include deep lakes around Old Crow, Fish Lake (approximately 40 km upstream from Old Crow) and Cadzow Lake (near the Cadzow Lake site, Figure 1) (Steigenberger 1974: 11). Populations that overwinter in the large lakes of the Old Crow Flats include predominantly whitefish and pike, among other fish species (ibid.: 9). The overwintering sites contain large concentrations of fish and are established by late December or early January (ibid.). Schaeffer Creek is void of fish from October to May (ibid.). Steigenberger (1974: 20) notes that near Schaeffer Creek and Black Fox Creek, the Old Crow River does not have overwintering fish, but that other overwintering sites should exist in other lake and river systems around the Old Crow Flats.

## PART TWO: Historical Context

### Early and Later Prehistory of the Old Crow-Northern Yukon Area

The deep time depth of human occupation in the Old Crow-Northern Yukon area is demonstrated through archaeological investigations in the region. Research began in the region in 1966, continuing into the 1980s, with the peak from 1975 to 1979, with the Northern Yukon Research Program (Morlan 1973; Irving and Cinq-Mars 1974; Cinq-Mars 1979; Le Blanc 1984). A significant amount of archaeological work in the area concentrated on Pleistocene age sites, with a focus on early human occupation in areas that were not glaciated during the Wisconsinan or under Glacial Lake Old Crow (Morlan 1980; Irving and Cinq-Mars 1974). Remains of human activity in the form of modified animal bones are the earliest indication of human occupation in the region, going as far back as 40,000 BP (Morlan et al. 1990). Bluefish Caves is an example of a site that was occupied during Late Wisconsinan times (Figure 2), as early as 25,000 BP (Cinq-Mars 1979; Cinq-Mars and Morlan 1999).

The connection of the Van Tat Gwich'in to their traditional territory goes back millennia. Large-scale fall and spring communal caribou hunting camps are well known along the middle reaches of the Porcupine River (Morlan 1973; Le Blanc 1984; McFee 1981). Sites like *Tl'oo Kat* and Rat Indian Creek demonstrate continuous occupation over thousands of years. *Tl'oo Kat* is a late spring/early summer interception site where caribou were killed during their migration north, with evidence of occupation from 1200 BP to the present (Morlan 1973). Rat Indian Creek is a deeply stratified site that was occupied intermittently over the last 3000 years, and is a major caribou interception site located 80 km east along the Porcupine River from *Tl'oo Kat* (Le Blanc 1984). Late nineteenth and very early twentieth century meat camps and their associated caribou fences are also well known for the foothill zones surrounding the Old Crow Flats (e.g. McFee 1981; Greer and Le Blanc 1992; Le Blanc, in progress). As well, Fafard and

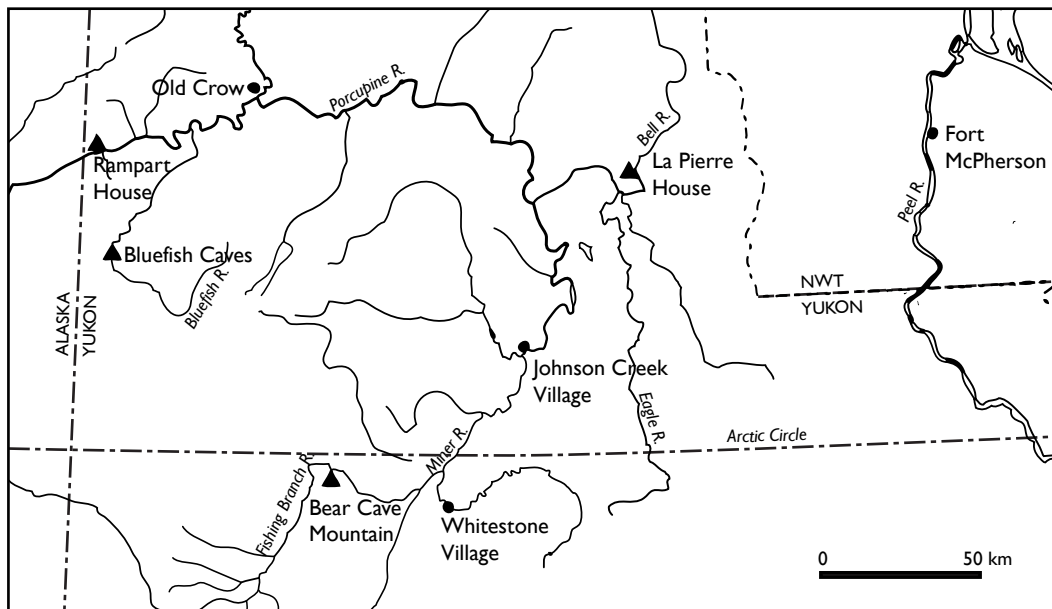


Figure 2. Southern Range of the Van Tat Gwich'in, with sites mentioned in the text. Image adapted from Smith and VGFN (2009).

Le Blanc (1999; Fafard 1999) have examined the warm season fishing camp in the Old Crow Flats, *Dechyoo Njik* (Figure 1).

*Dechyoo Njik* is located in the southwestern portion of the Old Crow Flats, approximately 40 km north of the Porcupine River (Fafard 1999). It is found at the confluence of Schaeffer Creek and *Dechyoo Njik*, in a grassy clearing on a point bar terrace. The site has two discrete occupations, the first during the Klo-kut Phase of the Late Prehistoric Period in the northern Yukon (700 AD to contact). Based on radiocarbon dates, a late occupation during that time period is suggested. The second occupation was during the Historic Period, after 1880. Through her examination, Fafard determines that *Dechyoo Njik* was used in the summer after spring interception of caribou, where the people hunted, trapped and fished. The emphasis at this site was fish processing, but other resources were utilized, including muskrats, berries and waterfowl. Fish would have been processed in large quantities and cached. Features include hearths, middens, depressions, ash deposits and a possible cache. Fafard conducts analyses of lithics, bone and antler, bark industries, wood remains, Euro-Canadian goods and faunal remains. She compares *Dechyoo Njik* with *Tl'oo Kat* and Rat Indian Creek and concludes that *Dechyoo Njik* is a fishing site rather than focused on migrating caribou, adding to the information on land use in the Old Crow Flats region.

### Historic Period

The events of the historic period are dominated by trade activity. The Van Tat Gwich'in traded before posts were located in their territory, travelling long distances (Smith and VGFN 2009: xlvi), and acted as excellent middlemen (McClellan 1964: 5). The first traders to operate within Van Tat Gwich'in territory were members of the Hudson's Bay Company. Initial trade with the Hudson's Bay Company did not include many furbearing animals, as the company did not have a large number of goods for trade, but the Van Tat Gwich'in did provide meat for the company and its men (Smith and VGFN 2009: li). John Bell established Peel River Post (Fort McPherson) for the Hudson's Bay

Company in 1840. In 1846 Alexander Hunter Murray built an outpost of the Peel River Post at La Pierre House (it was later moved to the Bell River from its original location on the La Chute River), and then another outpost at Fort Yukon in 1847 at the confluence of the Porcupine and Yukon rivers (Murray 1910).

The Hudson's Bay Company's Fort Yukon moved and was renamed a number of times. The initial post was on Russian territory, which eventually became American territory with the sale of Alaska in 1867. The first relocation was in 1869 to the location known as Howling Dog. This was the first location to also be called Rampart House, and after a subsequent move in 1870 was called Old Rampart House. The final relocation occurred in 1890 to the location that is called New Rampart House (Smith and VGFN 2009: li), but is commonly referred to as Rampart House.

Rampart House was an important site for the Van Tat Gwich'in. "Rampart House continued to be and still is a way stop for Gwitchin hunters and other travellers on the Porcupine River" (Beairsto 1997: 112). It was included in the seasonal round that characterized the 1900s and was visited on the way to and from the Old Crow Flats; eventually some people were resident year round. Archdeacon McDonald observed during a summer visit in 1891 that most of the Van Tat Gwich'in were present (McDonald 1891: 24, June 18, 1891, cited in Beairsto 1997: 48-49). In 1913 the RNWMP sent an officer to Rampart House to act as a customs and law agent (Coates 1979: 30). Extensive archaeological work has been conducted at Rampart House since the late 1960s (Morlan 1973; Le Blanc 1997; Gotthardt 1989; Tanaja 1998). The Rampart House historic site is co-owned and co-managed by VGFN and the Yukon Government under the terms of the VGFN Final Agreement of 1995 (Smith and VGFN 2009: xxxii).

Trade of the Van Tat Gwich'in with the Hudson's Bay Company altered in 1893 when locations at Rampart House and La Pierre House were closed as a result of the competition with traders and middlemen (Inuit and Inuvialuit) from the whaling ships at Herschel Island (Smith and VGFN 2009: liv). Therefore, during this period (until the whaling industry waned around 1907), the Van Tat Gwich'in did not have a trading post in their territory; they had to travel to trade



with the Americans on the Yukon River, the Hudson's Bay Company at Fort McPherson, or at Herschel Island with the whalers. The Gwich'in would go to Herschel Island two to three times per winter to trade with the ship captains, causing a change in trading patterns that saw fewer Gwich'in using their camps in the region of the Porcupine River by 1896 (Beairsto 1997: 53). Rampart House continued to be used as a fishing camp after it was shut down as a trading post because it offered good shelter (*ibid.*: 67).

After 1862, the Anglican Church played an important role in affecting change in the lives of the Van Tat Gwich'in. The missionaries encouraged regular worship and rest on Sunday, and discouraged polygamy and the use of medicine men (Smith and VGFN 2009: liv). The most notable Anglican figure was Archdeacon Robert McDonald. He arrived in the territory of the Van Tat Gwich'in in 1862, travelling between Fort Yukon and Fort McPherson. He translated numerous religious texts into Gwich'in and helped train and appoint lay readers (*ibid.*: liii). Other churches had a presence in the area for various amounts of time, but the majority of the Van Tat Gwich'in converted to Anglicanism.

With the influx of outsiders, significant change came about. They brought disease, which decreased the population (Smith and VGFN 2009: liv). An important historic event that had an impact on the Van Tat Gwich'in was the Klondike Gold Rush from 1897 to 1910 (Coates 1979: 65). A large number of people came to the Yukon during this time; Han, Tutchone, Teetl'it and Van Tat Gwich'in provided provisions (mostly caribou) to them (Smith and VGFN 2009: liv). Some of the men that came for the Gold Rush stayed to trap and trade, affecting the areas that they stayed in and married local women. Notable among those men was Dan Cadzow, who operated a store at Rampart House from 1904 until his death in 1929 (Le Blanc 1997: 2). From the 1920s to 1935, independent Canadian traders, brothers Jim and Frank Jackson, operated a store at La Pierre House (Smith and VGFN 2009: lvii).

The community of Old Crow as it exists now began as a well-known fishing locality. People began building permanent structures at Old Crow after a smallpox epidemic at Rampart House in 1911 (Acheson 1981: 695). After that

time more Van Tat Gwich'in used Old Crow as a gathering place, once the Anglican missionary and RCMP moved there in the early twentieth century. At that time the Van Tat Gwich'in that lived on the Canadian side of the border were denied access to their territory on the American side, influencing a move east to Old Crow, as well (Smith and VGFN 2009: lvi). O. Schultz and B. Johnson opened a post at Old Crow in 1912 to attempt to corner the market on muskrat pelts from the Old Crow Flats, but when demand fell in the 1920s, they closed the store and left the area. The Northern Commercial Company (formerly Alaskan Commercial Company) began trading at Old Crow in the 1920s. They were joined by the Jackson brothers, who traded at La Pierre House from 1925 to 1935, before moving to Old Crow, along with a few others (Coates 1979: 31).

Spring trapping of muskrat was a traditional activity that became more lucrative with the increase in pelt prices after 1917. During that same year the federal Department of Mines and Resources established the muskrat trapping season as the interval between March 1 and June 15 (Smith and VGFN 2009: lvii). During this time, *Dagoo* and *Teetl'it Gwich'in* were trapping marten, mink, lynx and fox in the winter in the area of Johnson Creek Village and Whitestone Village. Marten was still an important furbearing animal at Johnson Creek Village in the 1930s and 1940s (ibid.). During this time John Nukon operated a store at Whitestone Village. In the late 1940s and early 1950s the Old Crow Flats, previously designated as a Group Trading Area (which meant that only people from Old Crow could hunt there), was divided by the RCMP into individual trapping areas (Coates 1979: 32).

The Van Tat Gwich'in, as they exist today, includes people that identify themselves as *Dagoo Gwich'in*. *Dagoo* traditional territory is to the south and east of the Van Tat Gwich'in, in the area drained by the upper reaches of the Porcupine River (Figure 2). They left their territory in the early twentieth century to live amongst the Van Tat Gwich'in and the *Teetl'it Gwich'in* as a result of over-trapping in the area (Smith and VGFN 2009: xxx). In the 1950s *Dagoo* families living at Whitestone and Johnson Creek villages relocated to Fort McPherson, Dawson and Old Crow (ibid.: xi).

## PART THREE: Cultural Context

### Introduction

Early information regarding the Gwich'in can be found in the explorer journals of Kirkby (1864), Hardisty (1867), Dall (1870), Jones (1867), and Murray (1910), but they lack comprehensive information and details on all aspects of life. It was not until the 1930s, when Osgood (1934; 1936) and McKennan (1935; 1965), who were trained ethnographers, worked with various groups of Gwich'in. Later important ethnographies of the Gwich'in include Leechman (1948; 1950; 1951; 1954), Balikci (1963a; 1963b), Slobodin (1960a; 1960b; 1962), Welsh (1970), and West (1959; 1963). The following information on the annual subsistence cycle will focus on the Van Tat Gwich'in, as the Old Crow Flats are included in their traditional territory, although other groups were known to use the area.

The Van Tat Gwich'in have been referred to by a variety of names, including Vantat or Vanta Kutchin, Loucheux, Crow or Porcupine River and Rat Indians in older traders' journals (Smith and VGFN 2009: xxxviii). Their traditional lands are centred on the Old Crow River drainage, which includes the area east to the Berry Creek drainage and west to the Coleen River drainage. The southern limit is the divide of the Keele Range and the northern limit is the divide of the British Mountains (Morlan 1973: 69). The Van Tat Gwich'in are reliant primarily on caribou, supplemented by many of the other resources available in their territory, as discussed in the preceding section. The annual cycle is linked to hunting and procurement of available resources, making movement across the landscape an essential part of life of the Gwich'in.

### The Annual Subsistence of the Van Tat Gwich'in

In the ethnography of the Gwich'in, Osgood reconstructs customs and traditions from one hundred years prior to publication in order to provide previously

unrecorded background of the Gwich'in (Osgood 1936: 22). He does not directly discuss the annual cycle of the Van Tat Gwich'in, but only comments that it is similar to that of the Peel River Kutchin (*Teetl'it Gwich'in*) (ibid.: 31), who were located to the east on the Peel River in Fort McPherson, Northwest Territories. The *Teetl'it Gwich'in* spend the summer acquiring fish to preserve, while the rest of the year is spent trapping and hunting, with some ice fishing. The fishing season begins in June and lasts until November, when people feast at caches made previously (ibid.: 23). Collection and preservation of berries in the summer complements fishing in the summer (ibid.: 28). After this period, smaller family groups move around together and hunt. They then re-unite with a larger group in late spring to intercept caribou (ibid.: 23). Osgood reports that in the winter, if resources are scarce, the Gwich'in scatter into smaller family groups (ibid.: 34).

Osgood does specifically discuss the Van Tat Gwich'in (Crow River Kutchin), including a few important points that are pertinent to this discussion. Regarding fishing, the Van Tat Gwich'in use fish traps on small tributaries of the Porcupine River, and salmon, an important resource, is available from early July until October (Osgood 1936: 33). The lakes in the Old Crow Flats are important for food in the winter and summer (ibid.: 16). Caribou is obtained in the winter and autumn with surrounds (also called caribou fences or pounds), making caribou fences essential for the winter and spring (ibid.: 25). Osgood describes the surrounds of the Gwich'in:

Posts about four feet high are set up in the ground to form an enclosure roughly circular in form. Between these posts, poles and brush prevent the caribou from escaping except through narrow openings about eight feet apart in which snares are set. One side of the surround is open and from this entrance stretch out two lines of posts ever widening like the mouth of a funnel. This projecting line of posts is not a fence, strictly speaking, but a series of poles set up six feet high and hung with moss to represent men so that caribou which have entered the trap will be afraid to run in any other direction except that which leads to the snare-set enclosure. Some of these surrounds are so large that the inner part is a mile and a half in diameter. (Osgood 1936: 25)

The surrounds were used thus:

A large number of Indians band together to chase a herd of grazing caribou toward the entrance of the surround by scaring them with the cries of the wolf. After the caribou have entered the enclosure, the people stand across the opening and with their bows and arrows shoot those that attempt to escape by turning back. The remainder are frightened into the snares set at intervals in the fence. (Osgood 1936: 25)

Leechman (1954) also discusses the subsistence of the Van Tat Gwich'in, but focuses on the twentieth century. He describes an important part of the annual cycle, the spring hunt of northward migrating caribou. Caribou are spotted from lookouts on the Porcupine River east of Old Crow and then speared from canoes in the water when the animals ford the river at places like *Tl'oo K'at* and Rat Indian Creek (Leechman 1954: 6). Leechman reports that winter is a time when many people were on their traplines (ibid.: 2), and that people then moved to the Old Crow Flats in the spring (ibid.: 19). Leechman also mentions another important resource to the Van Tat Gwich'in: the Arctic hare or rabbit (ibid.: 9).

Another important ethnographer of the Van Tat Gwich'in, Balikci (1963b), offers a post-contact description of the subsistence strategy of the Van Tat Gwich'in. He discusses changes that have occurred since the fur trade. "The fur trade and missionary were by far the most important intrusive agents determining socio-cultural change among the Vunta Kutchin" (Balikci 1963b: 34). One of the major changes that occurred was in the hunting of caribou. At the end of the nineteenth century, surrounds were still being utilized, as people lacked ammunition for guns, but the surrounds were abandoned with the acquisition of more efficient rifles and the opening of Dan Cadzow's store in the early twentieth century (ibid.: 36).

The use of meat camps was prevalent after this time until the mid-1950s (Balikci 1963b: 37). Once caribou were seen around Old Crow, large groups of men would go out to hunt and would be followed by their families to dry the meat. People would be out at the meat camps for no longer than two or three weeks (ibid.). Hunting camps were also set up mid-winter south of Old Crow

village, around Lone Mountain, where hunters spread out to look for herds of caribou (ibid.: 6). During these expeditions, men seldom spent more than a few days on the trails (ibid.: 38). If the hunt was successful, families were brought to this area or an area with ample firewood, and people often would stay there a month or more time until spring ridding season began (ibid.).

The practice of caribou hunting from canoes changed as well, and became more of an individualistic endeavour, as a greater number of caribou swimming across the river could be shot with rifles from canoes (Balikci 1963b: 37), than previously using spears. Spring hunting at crossings was abandoned because of increased trapping in Old Crow Flats in early spring (Morlan 1973: 89).

Other changes that occurred in Van Tat subsistence include fishing practices, with nets replacing fish traps. Nets can be used in early winter under ice, increasing the amount of time during the year fish could be caught (Balikci 1963b: 39). The practice of running down a moose in winter was abandoned with the use of the rifle, as well (ibid.).

Trapping increasingly became important economically in the twentieth century. Mink, muskrat and marten were the three main furbearers in the trapping economy of Van Tat Gwich'in (Balikci 1963b: 41). The Old Crow Flats were the best area for mink, with the beginning of the trapping season in early November and continuing until the end of February. A trail would be broken to cabins in the Old Crow Flats, which would provide a basecamp for trapping excursions (ibid.: 43). Steel traps, which increased the efficiency of trapping over the use of deadfalls, were introduced around 1906 (ibid.: 41). The rise in prices of muskrat in 1917 changed muskrat trapping, which had previously been primarily for food. From the 1920s to the 1960s muskratting was the primary focus of the Van Tat Gwich'in fur trading economy (ibid.). Balikci describes the muskratting process:

The ridding season begins with the staking of the ridding houses over the innumerable lakes of Crow Flats, the main muskrat trapping area of the Vunta Kutchin. This usually takes place in December, before Christmas, before the ridding houses are covered by heavy snow. In March, actual trapping begins, each hunter concentrating on the ridding houses he has staked

previously. In the cold weather of March and April the unbaited traps are placed inside the rat houses. (Balikci 1963b: 41-42)

Balikci continues:

About the end of April and the beginning of May, it is no longer necessary to open the rat houses, place the trap inside, and cover it again. At this season the rat houses begin to melt, and the steel traps without bait are placed just in front of the rat holes, on the flat ice. That is the best period for easy muskrat trapping and shooting. After break-up things change again. The small canvas canoes are portaged to the lakes, and the rats are shot in the water near the shore with a .22 rifle. (Balikci 1963b: 42)

Balikci (1963b: 41) also notes that the flesh of muskrat was considered good dog food and was also eaten by people.

From the previous discussion, a general pattern for the annual cycle of the Van Tat Gwich'in is as follows. In the late spring, once caribou interception had occurred at sites like *Tl'oo Kat* and Rat Indian Creek along the Porcupine River, people moved for the summer to their fish camps on the Old Crow Flats. On the Old Crow Flats they fished, hunted and trapped, supplementing with the gathering of eggs and berries, and rabbit snaring. In late August and early September people would move to the north of the Old Crow Flats to work on caribou fences. Once surrounds were no longer utilized, people organized meat and hunting camps in the fall and winter. Winter was spent in pursuit of food. Country food would have dominated the diet, but tea and flour for bannock from Rampart House would have supplemented their diet (Le Blanc, personal communication 2013). Once muskrating became lucrative, it became a focus for the spring. Despite this general pattern of subsistence pieced together from multiple references, it is important to note that this pattern is in no way static. People had to adapt their subsistence activities depending on what resources were available, which could change from year to year.

## Chapter Three: Cold Weather

### Introduction

Adaptations to the cold in the subarctic have often been studied and recorded with the negative perspective that life in cold climates is difficult and demanding. Cold conditions are seen by researchers as hard, with inhabitants of the north forced to endure the frigid temperatures and live a miserable existence of limited mobility; cold is presented as a barrier to life in the subarctic. Ethnographers and archaeologists seldom spend time in the subarctic in the winter; a notable exception to this pattern is Osgood (1953) and his publication *Winter*. As a result of this situation, cold weather adaptations have not been the focus of many ethnographic or archaeological studies in the subarctic, in the past or present. This lack of anthropological data presents a challenge when determining whether a site like Schaeffer Creek Campsite was occupied during cold weather.

The lack of information regarding cold weather is thus exacerbated by the fact that the majority of research in the north occurs in the warmer months; direct information relating to life during the cold times of the year is therefore not collected. Information that is known regarding life in cold weather is obtained second-hand, resulting in incomplete knowledge. This deficiency of detailed information regarding cold weather activities and adaptations has ramifications for other areas of study as well, including locating archaeological sites and archaeological analysis of sites that were inhabited during cold weather conditions, which encompass over half of the year in the subarctic.

In contrast to the idea of cold weather as challenging, Steegmann states, “after having watched the Cree-Ojibwa function in extremely low temperatures, I am no longer convinced that cold represents a significant problem” (Steegmann 1983b: 4). Cold weather adaptations that include a spectrum of behaviour is integral to thriving in the subarctic, and this behaviour is reflected in the oral traditions of people living there; behaviour and adaptations are rooted in oral traditions. What people are doing and how they do it are learned from older



generations and the people around them; the older generations determine what knowledge is important and needs to be passed on, using their experience to provide critical information.

This chapter will discuss various aspects of cold weather, including misconceptions of cold weather in the subarctic, references to cold weather in the literature, whether adaptations to cold weather are behavioural or biological, and oral traditions as an integral part of cold weather adaptations. This information is provided to enhance the analysis of Schaeffer Creek Campsite as a cold weather site.

### Misconceptions of Cold Weather in the Subarctic

Researchers tend to work in the subarctic during the warmer part of the year due to relative accessibility, with research in cold weather less desirable and practical. This pattern translates into stereotypes and generalizations regarding cold weather conditions that are biased and inaccurate. Conducting research in cold weather is difficult, both logistically and practically, so the assumption is made that human mobility during this time is limited. To the contrary, Leechman points out that, “though the winter is long and cold, there are after all only a few days when it is actually too cold to travel and then one very gladly stays indoors till the weather changes” (1948: 14). In fact, increased mobility of northerners is the norm when snow is on the ground, as the use of sleds, toboggans and dog teams make moving across the landscape easier and faster than in warmer months, when one has to contend with tussock tundra and mosquitoes. Frozen lakes, rivers and streams facilitate easier travel, as well. Muskeg tracts impassable during the warmer months are easily negotiated in subzero temperatures, opening up more areas for habitation and access to resources that are not available in the warmer months (Janes 1976: 26).

Misconceptions of cold weather contribute to a lack of recognition of other factors that affect life in cold weather conditions. These include the reality that life in cold weather may be influenced by a decrease in the number of animals

around, not necessarily the cold (Gubser 1965: 97). This situation makes preparation for scarcities this time of year an essential adaptation to the cold, a topic that will be discussed later. Temperature is not the only factor that should be considered when discussing cold weather. Snow and ice conditions also affect interactions with the environment (Janes 1976: 23), and need to be accounted for when discussing life during cold conditions.

Misconceptions of cold can have an influence on other areas of study as well. For example, in a discussion of human adaptation to cold environments, Hoffecker and Elias discuss cold as a barrier to human habitation of the arctic and subarctic (2007: 78). Most of the archaeological sites discussed by Hoffecker and Elias (2007) that are found in high northern latitudes are dismissed as seasonal, with their inhabitants moving south during times of cold climate (referring specifically to the Yana RHS site in northern Siberia). The assumption that people could not have been using these areas during cold weather limits the understanding of what was happening regionally at this time. Further explanation of occupation is required, rather than assuming that escaping the cold was a motivating factor for movement across the landscape. An absence of evidence is used to purport that people were not in higher latitudes during glacial periods, even though there has not been an extensive amount of archaeological research conducted in the vast area of Beringia.

Hoffecker and Elias (2007) also discuss the idea that a lack of biological adaptation for the cold would have meant that people would not have moved into higher latitudes during glacial conditions, but paleoanthropologists maintain that culture takes precedence over biology, which supports the idea that cultural transmission of knowledge is an essential adaptation to the cold, that people at that time may have possessed. Hoffecker and Elias express their surprise, "...in perhaps the strangest development of Beringian human ecology, bison hunters of the North American Plains apparently moved northward to the Arctic during an interval of colder climate" (2007: 163). If cold is not thought of as a barrier to habitation, this event would not seem like such a strange idea and then an effort could be made to look at other factors affecting this move. This discussion

exemplifies that cold climate cannot be used as a de facto explanation for people's movement or lack of habitation of certain areas. People living at the time, as now, had adaptations to survive in cold climates and would not have necessarily been slowed down by a few degrees difference in temperature.

Current ideas in the literature about cold weather and cold weather behaviour put too much importance on the difficulty of the cold. "Humans command such an array of compensatory behaviour that some pressures with which they cope may simply be less pressing than we have assumed" (Stegmann 1983b: 6). This notion has led to a limited amount of direct information regarding winter habits in the literature.

## References to Cold Weather in the Literature

### *Early Records*

Early explorers that encountered the Gwich'in and other subarctic peoples include Robert Campbell (1885), W. W. Kirkby (1864), Sir John Richardson (1851), Frederick Whymper (1868), William Hardisty (1867), Alexander Mackenzie (1801) and Samuel Hearne (1795). Hearne provides the most information regarding cold weather in his journal; he travelled with the Chipewyan from 1769 to 1771, and having been in the far north during cold weather, he made some useful observations about cold weather activities. Hearne discusses the extensive use of pounds (caribou fences) during cold weather (1795: 78). As a result of the success of caribou fences, people did not have to move more than once or twice during this time (ibid.: 80). Hearne also discusses how lake fish are abundant resources to rely on during cold weather, along with beaver (Hearne 1795: 212; 240), owls (ibid.: 402), and certain species of grouse (ibid.: 407). When describing the Inuit, he says that during cold weather they travelled between waterways, where they had cached provisions when their destination was far away (ibid.: 160). As for dwellings, Hearne indicates that winter tents were the same as

summer tents (ibid.: 167), made of deerskin (ibid.: 322), but winter tents were packed on the outside with snow (ibid.: 168).

Employees of fur trading companies are also a source of early information on the Gwich'in. As trading companies were expanding, they sent employees to open trading posts and many kept journals or notes on their experiences. Alexander Hunter Murray was one such person. He opened two outposts of the Peel River Post (later known as Fort McPherson), La Pierre House and Fort Yukon for the Hudson's Bay Company in 1846 and 1847 respectively. His *Journal of the Yukon* (1910) details establishing Fort Yukon, and in it he describes a winter dwelling. The winter dwellings, which he indicates were rarely used in the summer, were deer skin lodges, and in the winter the hair of the deer was kept on the skin for additional warmth (Murray 1910: 85). In the winter, deer skin lodges were erected in a thicket of pine, and Murray describes them thus:

...the ground is cleared and the lodge put up on willow poles which they generally carry with them on their sledges. Snow is then packed half way up, the inside lined with small pine brush, and the small hole used for a door closed with a double deer skin. Although they have small fires it is as warm as most houses. (Murray 1910: 86)

From examining early explorer and trader journals, Yerbury (1986: 139) notes that a major cause of death during cold weather was the cyclical failure of the hare, especially when other animal resources were scarce.

### *Ethnography*

Osgood, in *Contributions to the Ethnography of the Kutchin* (1936), provides the earliest description of the people whom he divides into eight 'tribes' of the Gwich'in, but does not reveal much detailed information regarding specific cold weather activities. Generally, caribou were essential food in the winter and spring, with cows being preferred in cold weather, as they are fat during that time (Osgood 1936: 25). The method of acquisition of caribou in the winter and

autumn were surrounds (caribou fences), indicating communal hunting (ibid.). Moose were caught in the mid-winter using human surrounds, in which men would enclose an animal by forming a circle around the animal; moose could also be tracked by hunters (ibid.: 26). Osgood further mentions that when game is scarce during cold weather, groups of people would scatter (1936: 34).

Jeness (1932), in his seminal work *The Indians of Canada*, describes the Athapaskans of the Mackenzie and Yukon River basins, including the Sekani, Beaver, Chipewyan, Yellowknife, Slave, Dogrib and Nahani, but does not go into great detail regarding cold weather habits of any of these groups. Jenness indicates that the Athapaskans lived a similar lifestyle to the woodland people, Algonkians, of eastern Canada (1932: 377). Most of the groups surrounding and including the Gwich'in subsisted mainly on caribou, while including a variety of other animals in their diet. Most of these groups caught caribou by erecting pounds (caribou fences) and using snares (for example, the Dogrib: 1932: 393). Jenness indicates that the Gwich'in spent the winter hunting caribou, moose, hare and other game (1932: 401). The Gwich'in used snares extensively, and used caribou pounds (ibid.).

Of early ethnographic fieldwork conducted in the north, Jenness' work (1932) was more wide-ranging, but Osgood wrote detailed ethnographies of other groups in the subarctic (Osgood 1937, 1971). Robert McKennan also did fieldwork in the 1920s with the Chandalar Kutchin (1965) and Upper Tanana (1959). Robert Sullivan (1942) did fieldwork in the 1930s with the Koyukon. John Honigmann (1946, 1954) did work in 1940s in the arctic drainage and Cordilleran region. All of these ethnographers contributed greatly to our early understanding of subarctic groups, but none provide great detail regarding aspects of life during cold weather.

A later ethnographer of the Van Tat Gwich'in, Leechman (1954), makes few comments regarding cold weather. This lack of information is not surprising, as Leechman is another example of an ethnographer who did not spend an extended amount of time in Old Crow with the Van Tat Gwich'in, and the time that he did spend was during the summer. He states that, "some men will put out

ten or more snares and run them as a trap line,” but only in cold weather when the meat would keep well (Leechman 1954: 6). Also, grouse and ptarmigan are eaten in the winter, while ducks and geese are eaten in the spring and autumn (Leechman 1954: 10).

VanStone's *Athapaskan Adaptations: Hunters and Fishermen of the Subarctic Forests* (1974) is an ethnography that is the result of fieldwork among the Chipewyan living along the eastern shore of Great Bear Lake, NWT, in 1960. The focus of the book is to describe adaptations of northern Athapaskan groups including the Chipewyan, the Slave, the Chandalar Kutchin (*Neets'ik Gwich'in*), the Yukon Flats Kutchin (*Gwichyàa Gwich'in*), the Peel River Kutchin (*Teetl'it Gwich'in*), the Vuntut Kutchin (*Van Tat Gwich'in*), the Ingalik and the Tanaina. VanStone points out that adaptations were similar for these groups that surround the Van Tat Gwich'in, and he discusses winter activities in more detail than any of the ethnographers that have previously been discussed.

VanStone mentions three types of winter dwellings used by the Gwich'in. Circular winter houses were observed as early as 1847, and were noted as being easy to move (VanStone 1974: 33). Winter moss houses were lived in from October to early January, when people were sedentary (ibid.: 34), while skin tipis were also used in the winter, with the hair facing the outside. These skin tipis were not constructed in the same place twice (ibid.: 35).

When describing the Chipewyan, VanStone labels them as typical Athapaskan hunters, who rely heavily on caribou and use caribou drives in late fall and early winter (VanStone 1974: 24). VanStone discusses the importance of deadfalls for catching smaller furbearing animals, that were then shot with bow and arrow or captured in nets of *babiche* (rawhide). Snares were utilized for hare and ptarmigan, especially when they were abundant in winter. Gill nets were used in the winter under the ice (ibid.: 25). Family groups dispersed when game was scarce in the winter (ibid.: 27). Fishing and small game are important, as they are relied upon when large game is scarce (ibid.: 26).

VanStone notes that the Gwich'in had the greatest diversity in subsistence activities (1974: 26). He stresses the importance of flexibility when adapting to

the environment. VanStone says, “subsistence activities of all northern Athapaskans, like those of most of the world’s people, reflected a changing economic relationship to their environment in the course of the year” (ibid.: 23).

### *Other Sources*

Richard Morlan, an archaeologist who conducted extensive archaeological work with the Van Tat Gwich’in, presents what people told him they did in cold weather:

...informants at Old Crow insist that the population did not split up into small, one- and two-family units, but remained together through the winter in larger groups clustered about the strong and able hunters who in the previous fall had led the operation of the surrounds. Such groups are said to have retreated to the hills along the south flank of Old Crow Flats where protected valleys provided shelter from the high winds and extreme cold of the lake-dotted, open areas. The upper reaches of Surprise Creek and Potato Creeks have been mentioned as favourite winter locations, and the latter valley contains a place called Potato Hill where sizeable numbers of Kutchin are said to have spent the winter months. (Morlan 1973: 86-87)

After the time of the use of surrounds, meat camps on Old Crow Mountain provided food for the winter, while winter caribou hunts to Lone Mountain (south of Old Crow) became more frequent. Either meat was brought back to Old Crow, or the family was moved to the area by dog team (Morlan 1973: 88).

### Cold Weather Adaptations: Biological or Behavioural

*Boreal Forest Adaptation: the Northern Algonkians* (Steegmann 1983a) examines how Algonkians adapted to the boreal forest after the retreat of the Wisconsinan glaciation, and the book directly addresses adaptations to cold weather. The book argues that, “coping with cold in the boreal forest is a function of learning the appropriate cultural response repertory, and not a function of biological inheritance” (Marano 1983: 270). In the discussion of cold weather adaptations as

behavioural, clothing is listed as a core behavioural cold adaptation (Steedmann, Hurlich and Winterhalder 1983: 324-328), as well as diet (ibid.: 328-329), individual behaviour (ibid.: 329-331), and shelter (ibid.: 331-332). And finally, an important point that the authors make is that adaptivity relies on mobility (ibid.: 349). They conclude that:

...illness and death resulting directly from cold are actually rather uncommon now, and were apparently uncommon in the past as well. Both as a threat to survival and health and as a matter of concern in everyday life, low temperature matters little. Although annual weather cycles certainly have profound effects on availability of and ease of foraging for food, they show little direct effect on people. (Steedmann, Hurlich and Winterhalder 1983: 317)

#### Oral Transmission of Knowledge

A common theme when looking at cold climate adaptations is the recognition of the need for the right knowledge. To navigate the cold environment, people must have the right tools, housing, clothing and skills to prepare for an ever-changing environment. This knowledge comes from experience as well as from oral traditions. “In the course of millennia living on their lands, Van Tat Gwich’in amassed an encyclopaedic store of knowledge, including details about specific places, which is the foundation for making a living and many other aspects of society” (Smith and VGFN 2009: 276). A central theme in the oral history of the Van Tat Gwich’in is the importance of passing on knowledge to future generations (Smith and VGFN 2009), making oral traditions a central adaptation to life in cold climates. Oral history by its very nature allows the older generations to determine what knowledge is essential to pass on, and this factor will be discussed in greater detail in the next chapter.



## Discussion

From an examination of the ethnographic literature, a general pattern for cold weather emerges for most groups in the subarctic, with people located where the resources are. The lack of specifics in the ethnographic literature leads to the assumption that life during cold weather was hard and people were forced to stay in one place. In reality, during cold weather, movement was easier with the use of sleds, toboggans and snowshoes. For people equipped with the right clothing and gear, winter is a time of increased activity rather than inactivity, as many ethnographers and researchers have assumed. The Nunamiut speak of winter as a difficult season, but look forward to it because of great mobility and trapping (Gubser 1965: 98).

In addition to a lack of discussion of cold weather activities, there is a lack of discussion of cold weather adaptations in the literature. Misconceptions regarding what people were doing and how they were adapted to living creates a limited view of those people. These misconceptions are challenged by a few scholars, most importantly Steegmann (1983a). He points out:

While they [cold and snow] put undeniable pressure on people of the north, I gained the impression that they could be more effectively managed by specific survival and coping skills than could any other part of the environment. These are strong adaptations, which by and large appear to work as long as one adheres to the conventional wisdom. Behaviour, clothing, tents, fire, snowshoes, toboggans, and experience formed a tight bulwark. (Steegmann 1983a: 261)

The emphasis on transmission of knowledge in *People of the Lakes* (Smith and VGFN 2009), a book dedicated to Van Tat Gwich'in oral history, exemplifies this important survival technique that is entrenched in their culture. All of the elders – first, second and younger generation, discuss the importance of their grandchildren knowing how to live off the land. Teaching future generations about the land, including geography, topography, and place names, provides knowledge to take advantage of their environment. The depth of this tradition is

rooted in their culture as one way of helping people survive and stay constantly adaptive.

At the core of a discussion on cold weather adaptations, one must examine the idea of being constantly adaptive. Adaptation comes from lived experience and knowledge that is passed on. Survival in the subarctic is predicated on passing on knowledge to younger generations, which provides the foundation to be able to adapt constantly to the surrounding environment. As Steegmann says:

The struggle to raise children to maturity, stay healthy, and extract a living from the environment requires that people practice adaptive skills constantly. To the native and to the visitor, this aspect of adaptation is simply central to life, whether it is exclusively behavioural, or conditioned by biological advantages as well. (Steegmann 1983b: 4)

## Conclusion

Some writers would have us believe that survival in a Yukon winter took heroic courage. A few adventurers perished due to lack of knowledge and unpreparedness, but the winter climate does lie within the range of human tolerance. (Wahl et al. 1987: 3)

In conclusion, when discussing cold weather in the subarctic, it is important to keep in mind that averages of temperatures do not take into consideration the day-to-day. People have to deal with fluctuations rather than the averages (Winterhalder 1983: 48). It is important to keep in mind that generalizations may not do justice to constantly adapting lives in the ever-changing environment of the subarctic.

## Chapter Four: Oral History

### Introduction

Oral history, when available, is an integral component of examining the past. Schaeffer Creek Campsite is located in the Old Crow Flats, within Van Tat Gwich'in traditional lands, making investigation of existing oral history archives and conducting interviews for additional information central to this study. Access to the oral history archives of the Vuntut Gwichin First Nation in Old Crow was requested and granted in July 2007. The database was searched for any reference to winter, cold weather, Schaeffer Creek or Old Crow Flats. Supplemental oral history information was found in *People of the Lakes* (Smith and VGFN 2009), which was published during the writing of this thesis, and is included in the discussion.

In addition to the archival information, traditional land use data were sought through interviews with six community members who had a connection to the Old Crow Flats and therefore, potentially the area around Schaeffer Creek. Interviews were conducted over a two-week period in July to August 2007. They were conducted in the Gwich'in language, at the homes of elders in most cases, and in the town of Old Crow. The purpose of the interviews was to gather information regarding cold weather adaptations as well as any information regarding Schaeffer Creek Campsite. The sessions were audio recorded and later translated by Mary Jane Moses, Heritage Department, Vuntut Gwich'in Government, Old Crow. None of the elders recalled a site in the area of Schaeffer Creek, so only general information was provided on the area of Schaeffer Creek and the Old Crow Flats.

### Background

The Van Tat Gwich'in were well known ethnographically by the 1970s (McClellan 1981: 40), which is when oral history of the Van Tat Gwich'in began

to be recorded (Smith and VGFN 2009: 62). The Vuntut Gwichin First Nation, as part of their *Comprehensive Claim Final Agreement*, conducted a large-scale project led by the community to record the oral history of their lands (ibid.: xxxiii). The result of that work builds on research that began in 1995 (ibid.: xxxiv), and is a comprehensive source of oral history of the Van Tat Gwich'in. It is the culmination of many years of work, and "...highlight[s] the Gwich'in perspective on the importance and role of their oral history and [fills] the gap in the body of writing and information about Van Tat Gwich'in" (ibid.: xv).

In addition to the oral history in the archives of the Van Tat Gwich'in, and the work done by the Vuntut Gwichin First Nation, the oral history interviews done by Mélanie Fafard (Fafard 1997c) relating to her archaeological work at the *Dechyoo Njik* site on the southwestern Old Crow Flats, is pertinent to this study. The primary focus of her interviews was land use patterns, focusing on fishing behaviour. As that site was a summer fishing campsite, not much discussion was directed towards cold weather practices, although general information regarding the area provides information about the area around Schaeffer Creek Campsite. None of the information obtained in the interviews by Fafard varied from that found in the archives, therefore none of it is presented here.

## ARCHIVAL DATA

### Schaeffer Creek

Near Schaeffer Creek is Schaeffer Lake, which was specifically discussed by two elders. Charlie Peter Charlie Sr. (1919-2008<sup>1</sup>) remembered lots of people at Schaeffer Lake because there were lots of muskrats (Schaeffer Lake Cabin, June 28, 2001, VG2001-2-60: 6, Gwich'in), and Peter Tizya (b. 1927) recalls winter trapping near Schaeffer Lake (Schaeffer Lake, June 27, 2001, VG2001-2-58: 1, Gwich'in).

---

<sup>1</sup> All dates from VGFN, Heritage Branch 2013 and Smith and VGFN (2009).

Andrew Tizya (b. 1919) remembers Schaeffer Creek as a fishing place (*Ch'anchàt*, King Edward Mountain, August 2, 2000, VG2000-4-16: 1, Gwich'in). He also mentions that people would gather at the mouth of Schaeffer Creek for winter (ibid.: 2). Charlie Thomas (1916-2009) recalls staying at Schaeffer Creek after being in the Old Crow Flats, with his father and a group of people, where they caught many caribou (Old Crow and Fort Yukon, July 19, 1998, VG1997-10-01: 13, Gwich'in). In another interview, Charlie Thomas elaborates further that Schaeffer Creek was an important place for many people:

Back at Schaeffer Creek, the people waited for each other. Lots of people who were going back from Crow Flats, they all stopped there and fished and waited for each other at Schaeffer Creek. After all the people had gathered there, they would come down together. (*Chii Ch'an Kit*, June 9, 2001, VG2001-2-13: 1, Gwich'in)

#### Old Crow Flats

The Old Crow Flats were important for survival, especially in times of scarcity (Neil McDonald, August 12, 1977, VG2001-4-7, English; Sarah Abel, August 11, 1977, VG2001-4-5, Gwich'in; John Joe Kyikavichik, *Van Tat*, June 11, 2001, VG2001-2-31, Gwich'in) (Neil McDonald 1889; Sarah Abel 1896-1998; John Joe Kyikavichik b. 1925). The Old Crow Flats were a place where small animals could be trapped easily, providing food when caribou was not available (Myra Moses, VG2001-4-4, Gwich'in) (Myra Moses 1884-1984). The Old Crow Flats were central to life; "The people lived off Crow Flats" (Charlie Thomas, *Van Tat*, June 10, 2001, VG2001-2-20, Gwich'in).

Charlie Thomas recalls the Old Crow Flats in the spring of 1924, when he was a child. He remembers Alaskan people coming to the Old Crow Flats, as well as the presence of many Eskimos (Inuit) at that time (*Van Tat*, June 22, 2001, VG2001-2-37: 2, Gwich'in). He also remembers spending one winter on the Old Crow Flats in a cabin his family built (*Antl'it Tthat*, Thomas Creek Caribou Fence, July 27, 2000, VG2000-4-3: 10, Gwich'in). People from Alaska and Rampart

House would go to Old Crow Flats for spring caribou, so around the middle of June there were lots of people out there (Charlie Thomas, May 7, 1999, VG1999-7-1: 2, English). Myra Moses remembers going from Old Crow Flats to trade with American ships at Herschel Island after the Hudson's Bay abandoned trading establishment outposts (Rampart House and La Pierre House) in Van Tat Gwich'in territory to move to Fort McPherson in 1893 (Interpreted by Alice Frost, August 10, 1977, VG2001-4-4: 8, Gwich'in). Myra Moses also recalls that people stayed in the Old Crow Flats for the winter (July 1979, VG2000-8-10B, Gwich'in).

Other groups would come to the Old Crow Flats in the winter and live with the Van Tat Gwich'in (Alfred Charlie, Irwin Linklater's camp on Crow River, June 11, 2001, VG2001-2-35: 2, Gwich'in) (b. 1923), including Arctic Village (*Neets'ik Gwich'in*), Fort McPherson (*Teet'it Gwich'in*) (Alfred Charlie, Bear Cave Mountain, July 29, 2000, VG2000-4-8: 15, Gwich'in) and Fort Yukon people (*Gwichyàa Gwich'in*) (Mary Thomas, February 20, 1980, VG2000-8-16: 2, Gwich'in). The Inuit used the Old Crow Flats for winter trapping in the late 1930s (Charlie Thomas, *Sriinjik*, Bluefish River, June 23, 2001, VG2001-2-42: 4, Gwich'in). Lydia Thomas (b. 1916) remembers different groups of people gathering in the Old Crow Flats and feasting together (August 7, 2000, VG2000-4-19, Gwich'in). Hannah Netro (b. 1919) re-iterates that the Old Crow Flats were occupied by various groups of people:

Chalkysik people [*Draanjik Gwich'in*, from Alaska] too, Fort Yukon people, too. Venetie people [*Di'haii and Neetsaii Gwich'in*, from Alaska] and even people from Arctic Village [*Neets'ik Gwich'in*], they use to go to Crow Flats long ago. (Driftwood Creek, June 26, 2001, VG2001-2-54: 7-8, Gwich'in)

Much of the discussion surrounding the Old Crow Flats centres on the annual visit to obtain muskrats for their pelts. Muskrats were caught in March on the ice, but muskrat season ended by mid-June, once regulation by the government began (Charlie Peter Charlie Sr., Schaeffer Lake Cabin, June 28,

2001, VG2001-2-60: 1, Gwich'in). Muskrats were also hunted in winter when resources were scarce (Neil McDonald, August 12, 1977, VG2001-4-7, English). Travel to the Old Crow Flats was accomplished with dog teams and the return journey was made on canvas boats down the Old Crow River (Ellen Bruce, March 12, 1997, VG1997-8-7, Gwich'in). Joe Netro (1889-1980) recalls that prior to the Hudson's Bay Company being in the area, people used to get muskrats in the spring and take the skins to trade with the Inuit in Point Barrow, Alaska, for Russian goods (August 10, 1977, VG2001-4-2, English).

The use of Old Crow Flats was not limited to ratting, as informants indicate that caribou were also caught while ratting; the meat was then dried for summer consumption (Charlie Thomas, February 24, 1997, VG1997-8-3: 3, English). In addition to caribou on the Old Crow Flats, Lazarus Charlie remembers hunting moose in the spring and then smoking and drying the meat for the winter (VG1999-6-1: 3, English). Myra Moses recalls many fish in the little rivers of the Old Crow Flats (July 1979, VG2000-8-10B, Gwich'in).

The presence and population of caribou in the Old Crow Flats has changed within the memories of informants. For instance, Neil McDonald recalls that there were not very many caribou in the Old Crow Flats before the 1920s (Haines Junction, June 1979, VG2000-8-5: 2, English), a situation that would have affected the time of year people were travelling to and from the area. The population of muskrats changed from year to year as well. Lydia Thomas remembers that there were no muskrats on the Old Crow Flats in 1934, but there were many the following years (Lydia Thomas, February 15, 2001, VG2001-2-6: 1, Gwich'in). Irwin Linklater (b. 1940) has a cabin in Old Crow Flats, and he remembers his camp back to 1944 (Irwin Linklater's camp on Crow River, June 10, 2001, VG2001-2-21: 1, English). He recalls that people did not stay at his camp every year, since some years there were no muskrats available (*ibid.*).

Other food resources that varied in population in the Old Crow Flats were birds. Elders observe that now there are fewer birds than in the past (Lydia Thomas, February 15, 2001, VG2001-2-6: 3, Gwich'in; Charlie Thomas, Irwin

Linklater's camp on Crow River June 10, 2001, VG2001-2-20: 2, Gwich'in; Charlie Thomas, *Van Tat*, June 22, 2001, VG2001-2-37: 5, Gwich'in). Robert Bruce Jr. remembers eating small bird eggs, but comments that there are less ducks now (Robert Bruce's Place, June 9, 2001, VG2001-2-19: 3, Gwich'in). "Sometimes there were lots of ptarmigan. Now I went to Crow Flat twice and I never saw ptarmigan" (Ellen Bruce, February 19, 2001, VG2001-2-9: 3, Gwich'in). Ellen Bruce also observes that in the spring there were ducks, but now there are none (ibid.).

The usual yearly cycle of movement to the Old Crow Flats occurred in the spring. It is important to observe that though the elders report that travel to Old Crow Flats was in the spring time, there still would have been winter conditions there, including snow. Ellen Bruce remembers after New Year's people killing a large number of caribou before moving to the Old Crow Flats, when there was still snow (February 19, 2001, VG2001-2-9: 3, Gwich'in). "When we go to Crow Flat, the snow melted and it was difficult to walk with snowshoes" (Ellen Bruce ibid.: 4).

The use of Old Crow Flats changed in the early twentieth century, as well. With the enforcement of the American/Canadian border, people began to claim certain areas for trapping (Joel Peter, his cabin at Crow Flats, June 25, 2001, VG2001-2-49, English). Around the 1920s people would return yearly to their claimed area (ibid.).

## Winter and Ways of Life in Cold Environments

### *Winter Movement*

Movement in winter is evident from the stories of many of the elders. When asked how he kept warm at  $-70^{\circ}$ , Lazarus Charlie answered that he kept himself warm by continually moving with his dog team (VG1999-6-1: 4, English). Alfred Charlie describes life constantly moving:



When they're running low in food, then they start moving. They don't know where the caribou move, too [sic], but they know the country. They think maybe here, there. So they move around all winter. They're on the move all the time. They did that, sometimes they kill, kill bunches of caribou, sometimes they kill moose. That's what they did and they kept moving, that's all. (Bear Cave Mountain, July 29, 2000, VG-2000-4-8: 12-13, Gwich'in)

Robert Bruce Jr. discusses winter trails (Sharp Mountain, June 27, 2001, VG2001-2-56: 1, Gwich'in), a topic which suggests a significant amount of winter movement. During his father's time, Moses Tizya was told that there were so many people that they needed four trails in the winter time to accommodate them all when moving camps (August 11, 1977, VG2001-4-6#1: 9 and 14, Gwich'in and English).

Patterns of movement in the winter vary according to informants. One of the patterns suggested by elders was that people travelled together and for long distances (Myra Moses, January 1980, VG2000-8-19A: 1, Gwich'in). "Then in the winter, they go all over, they do that" (Martha Flitt, Rampart House to Crow Flats Route, April 1997, VG1997-4-13A: 4, English). "In the winter, they went all over together" (Alfred Charlie, *Tanch'ohlii*, British Mountains, June 29, 2001, VG2001-2-62: 8, Gwich'in). "That's how they lived during the winter. They were always on the move, that's all..." (ibid.: 9). "Both in winter and summer, they travelled around" (John Joe Kyikavichik, Bell River, August 18, 2002, VG2002-3-14: 3, Gwich'in).

Once she was married, Mary Netro recalls moving all over in the winter to find food, looking for caribou (February 20, 1997, VG1997-8-6: 2, Gwich'in). "They move around them days. People didn't know cold. They only had caribou skin clothing. They're not cold" (Alfred Charlie, Bear Cave Mountain, July 29, 2000, VG2000-4-8: 9, Gwich'in). "In the month of February they move around" (Dick Nukon, February 25, 2001, VG2001-2-5: 3, Gwich'in) (b. 1925). "In the winter all the people travel long ways, the men hunt, where they kill caribou, everyone gets meat. Because of this we survive" (Myra Moses, January 1980, VG2000-8-19A: 3, Gwich'in). In contrast to the many affirmations of the pattern

of continual movement, Andrew Tizya remembers staying alone around Schaeffer Lake (Schaeffer Lake, June 27, 2001, VG2001-2-57: 7, English).

Another pattern of movement in the winter incorporated the use of caribou fences (Moses Tizya, August 11, 1977, VG2001-4-6-#1: 7, Gwich'in and English). Charlie Thomas' grandfather would stay at the caribou fences year round, and he would give people meat in the winter, even though caribou were only reliably around the fence from August until November (Charlie Thomas, *Antl'it Tthat*, Thomas Creek Caribou Fence, July 27, 2000, VG2000-4-3: 2, Gwich'in). Moses Tizya said that people would stay at the fence until after New Year's or until they ran out of meat, and then they would begin to move (August 11, 1977, VG2001-4-6-#1: 14, Gwich'in and English).

Movement was based on an annual round that had people moving on a reliable and predictable cycle. Sarah Abel recalls travelling in November looking for caribou, then settling in a place where there were lots of caribou, and then going to the Old Crow Flats when there were fish (August 11, 1977, VG2001-4-05: 3; 4; 10, Gwich'in). Myra Moses remembers there being caribou around the Old Rampart House area in the winter (July 1979, VG2000-8-10B, Gwich'in). People also moved around until May, when they went to *Tl'oo K'at* (ibid.). Hannah Netro remembers that the men hunted and the women set traps and nets under the ice in the winter (March 12, 1993, VG1997-6-6: 2, Gwich'in). They trapped until Christmas, came back to Old Crow, and then in January they would move to a different location. They would return to Old Crow for Easter and after that head out to the Old Crow Flats (ibid.: 2-3). In November they staked rat houses, and in March they would set traps for muskrats until June (ibid.: 3; 4). Ellen Abel describes that once they went up the Porcupine River in the fall, where they set fish nets for salmon and hunted for moose to prepare for the winter (January 1980, VG2000-8-19: 19, Gwich'in). After freeze-up they prepared for trapping, with her father not returning until Christmas (ibid.: 20). After New Year's they stayed at La Pierre House (ibid.: 21).

Sarah Abel describes the annual cycle her family followed, "...In the summer it was hard for them to get around with toboggans, so they made dog packs for the dogs to carry" (August 11, 1977, VG2001-4-5, Gwich'in). When meat was obtained in the summer, it was dried and packed by the dogs. They would settle down in September where there were lots of caribou and make fences. To prepare for winter they made snowshoes and toboggans. October and November was a time to stay in one place, but low resources characterized November, and they sought caribou by moving. All winter they moved and hunted caribou (ibid.).

For some people the annual cycle included settlement in one place for periods of time. Andrew Tizya remembers that during the winter they would stay in one place, the main winter camp being at *Dinnizhòo* (see Figure 1), and big camps were all over as well (*Ch'anchàt*, King Edward Mountain, August 2, 2000, VG2000-4-16: 4-5, Gwich'in). Edith Josie (b. 1921) recalls that by the 1950s many people would stay the winter in Old Crow (January 1980, VG2000-8-19E: 16, Gwich'in). John Joe Kyikavichik said that people would go up the Bell River to winter campsites (Bell River, August 18, 2002, VG2002-3-14: 1, Gwich'in), where they would catch fish and hunt for the winter (ibid.: 2, 3). Ellen Abel stayed at Johnson Creek as a child for the winter (January 1980, VG2000-8-19: 19, Gwich'in). Alfred Charlie remembers that people knew where they were going to stay for the winter and returned there (*Tanch'ohlü*, British Mountains, June 29, 2001, VG2001-2-62, Gwich'in).

Lazarus Charlie recalls living in Johnson Creek Village (*Kâachik*), located in the Upper Porcupine River area (see Figure 2). He would arrive before September for the winter, sometimes going to Old Crow for groceries, and stay for the spring (VG1999-6-1: 1, English). Mary Netro recalls her family staying in Johnson Creek Village for the winter. They would go to Johnson Creek Village in September by boat and trap all winter. Her mother would return to Old Crow for Christmas, come back to Johnson Creek and then after break up return to Old Crow (February 20, 1997, VG1997-8-6: 1, Gwich'in). She recalls staying at the same place all the time (ibid.). Edith Josie spent the winter at Whitestone Village

(*Chuu Tl'it*), located in the Upper Porcupine River area south of Johnson Village (see Figure 2), until about 1949, when they then stayed in Old Crow (January 1980, VG2000-8-19E: 16, Gwich'in). Alfred Charlie tells of the *Dagoo Gwich'in* making their living around Bear Cave Mountain in the winter (Bear Cave Mountain, July 29, 2000, VG2000-4-8: 3, Gwich'in). When talking about John Tizya and his family living at Blackfox Creek, Alfred Charlie remembers that, "they really lived well in winter" (Blackfox Creek, June 24, 2001, VG2001-2-44: 2, Gwich'in).

### *Winter Survival*

The unpredictability of resources in winter could affect social as well as settlement patterns. Alfred Charlie said that if the Van Tat Gwich'in received news that there were caribou in Arctic Village (northeastern Alaska), they would go there and come back in the spring (Irwin Linklater's camp on Crow River, June 11, 2001, VG2001-2-35: 2, Gwich'in). The Arctic Village people (*Neets'ik Gwich'in*) and the Fort McPherson people (*Teetl'it Gwich'in*) would come to Old Crow Flats if they heard news that there were caribou in the winter (ibid.), indicating that the different groups sometimes lived together in the winter. If one group did not have caribou, they would go to other groups and receive shared meat, and vice versa; in hard winters they would stay together (Alfred Charlie, Bear Cave Mountain, July 29, 2000, VG2000-4-8: 15, Gwich'in).

Sharing food was another social coping strategy to make it through the winter; "Everything they got was divided evenly" (Ellen Bruce, February 19, 2001, VG2001-2-9: 5, Gwich'in). People listened to the leader and everyone shared resources to survive (Myra Moses, January 1980, VG2000-8-19A: 2, Gwich'in). John Joe Kyikavichik describes what they would do:

Long before Christmas, they held a meeting with the chief and discussed how people will work for themselves. At that meeting, everyone told each other where they were going, how long they will be gone, each in a different direction...Trappers on the land know where others are. That

way if someone gets stuck, [having difficult times] others can help out. Also if a trapper happens upon some caribou and shoots them, if others hear this then they would gather. When all the trappers gather back home, they buy goods with fur they harvested and contribute to a collection for celebrating Christmas and New Year. (March 12, 1993, VG1997-6-7, Gwich'in)

Preparation for winter was essential for survival. "...When it's cold we can't haul wood. That's why when it's warm we haul lots of wood" (Ellen Bruce, February 19, 2001, VG2001-2-9: 2, Gwich'in). Preparation included netting of dog salmon in the fall (Charlie Thomas, February 24, 1997, VG1997-8-3: 2, English) and drying meat, which was essential for winters when caribou were sparse (Hannah Netro, March 12, 1993, VG1997-6-6: 2, Gwich'in). After the ice is frozen the women would go around on rabbit trails, setting long snare lines to be maintained all winter (Ellen Bruce, March 12, 1997, VG1997-8-7, Gwich'in). Fish nets were set under the ice in October to get fish until January and sometimes spring (ibid.). In August caribou are caught and the meat is dried, bone grease was made, skins were prepared, clothing was made for the winter, *babiche* (rawhide) was made, and snares from *babiche* were made in preparation for winter (Alfred Charlie, Bear Cave Mountain, July 29, 2000, VG2000-4-8: 12, Gwich'in). John Joe Kyikavichik recalls going up to Crow Mountain before winter for caribou when they were there. He would then dry the meat, bring it down before freeze-up and set nets for dog salmon. Once the salmon were dried, he would bring both meats to camps for trapping, until gathering together for Christmas (February 18, 1980, VG2000-8-25: 2, Gwich'in and English). Throughout the winter, time was spent tanning and making clothes (Myra Moses, July 1979, VG2000-8-10B, Gwich'in).

One of the strategies that allowed movement in the winter was the caching of food. Charlie Thomas would cache dry meat on the mountain for winter (February 24, 1997, VG1997-8-3: 2, English). He describes using ground caches under large rocks on the mountain for winter. This practice would allow the people to move around and have a reliable source of meat (ibid.). Fish and caribou

were dried in the summer and fall and stored, some of the food lasting up to two years (Myra Moses, interpreted by Edith Josie, VG1999-6-7, English).

Once they ran out of cached meat, people started moving to places where they thought there might be caribou (Alfred Charlie, Bear Cave Mountain, July 29, 2000, VG2000-4-8 p.12, Gwich'in). Alfred Charlie recalls the movement of the caribou, including where they wintered (*Tanch'ohlii*, British Mountains, June 29, 2001, VG2001-2-62: 3, Gwich'in), so part of winter adaptation strategies were knowing where the caribou could be found.

During the winter a lot of hard work was necessary to survive. In the winter fish nets were set, made with *babiche* and willow branches (Edith Josie, September 15, 1998, VG2001-13-17, Gwich'in). Fish were frozen in the winter (ibid.). In the winter birch trees are gathered to make toboggans and snow shoes (Alfred Charlie, Bear Cave Mountain, July 29, 2000, VG2000-4-8: 12, Gwich'in). While the people were hunting in the mountains above Fort Yukon, elderly men would gather birch bark at rivers for making toboggans (Myra Kaye, February 2, 1980, VG2000-8-19C, Gwich'in). When birch could not be found for making toboggans, goods were pulled on blankets when moving to the mountains (ibid.). Ellen Bruce describes what was necessary to do in the winter to survive:

...while it's cold, we set rabbit snares. We fish under ice. We do that all winter. That is how our dogs and ourselves [sic] were able to eat. In the spring, we all go to Crow Flats. There too, we have lots of work to do. We set traps under snow. It starts to thaw out, then on ice, we set traps. (Top of the Hill Mountain, August 1, 2000, VG2000-4-14: 3, Gwich'in)

Trapping was an essential part of winter, both for sustenance and trade, from November to February (Mary Kassi, September 8, 1998, VG2001-13-23, Gwich'in). "If the weather is bad we still travel [to check trap line]" (ibid.). "Those who hunted and trapped, it wasn't hard for them" (Hannah Netro, March 12, 1993, VG1997-6-6: 2, Gwich'in). Myra Moses notes that, "They really made use of and depended on snares," (August 10, 1977, VG2001-4-4: 11, Gwich'in). Moses Tizya recalls using trees to make fences and then setting a large number of

snare (August 11, 1977, VG2001-4-6#1: 7, Gwich'in and English). "In the winter, they dried lots of caribou meat. Whoever did not do this, had a really hard time in the summer" (John Joe Kyikavichik, Bell River, August 18, 2002, VG2002-3-14: 3, Gwich'in).

Strong dogs were important for winter; they made travel easier (John Joe Kyikavichik, Bell River, August 18, 2002, VG2002-3-14: 5, Gwich'in). Mary Netro remembers her father getting supplies for the winter from Fort Yukon, including boards for toboggans (which were traditionally made of birch) (February 20, 1997, VG1997-8-6, Gwich'in).

## INTERVIEW DATA

### Schaeffer Creek

Lydia Thomas mentioned Schaeffer Creek specifically (interview July 31, p. 5). She said that Schaeffer Creek used to be called King Edward Creek (*Ch'anchat Njik*) before Abe Schaeffer built a cabin on it. Her grandfather *Deetru'* built a cabin somewhere around the middle of Schaeffer Creek, but she does not remember him. Her grandmother told her that in September they would go to the cabin and stay there all winter (interview July 31, p. 2). Charlie Thomas mentions his parents travelling by Schaeffer Creek, but he does not recall a cabin on Schaeffer Creek (interview, p. 1). In the interview with Charlie Thomas, Phares Thomas, his brother, said that he does not think that the Inuit would have been in the country around Schaeffer Creek, and Charlie Thomas concurred (interview, p. 2).

When asked whether a site located near Schaeffer Creek would have been a winter or spring occupation, Robert Bruce Jr. recalled elders' stories from interviews in which he has participated in, when they said that people would stay in Old Crow Flats year-round (interview July 31, p. 1). They would be in the Old Crow Flats because it was a long way to travel back and forth between there and Rampart House or Old Rampart House, before the village of Old Crow existed.

## Old Crow Flats

Charlie Thomas recollects that in 1926 he was in the Old Crow Flats, along with people from Fort Yukon, Black River, and Circle, Alaska, as well as Inuit (interview p. 3). Lydia Thomas, when talking about Old Crow Flats, recalls, “those days there were lots of people around there” (interview July 31, p. 4). Robert Bruce Jr. recalls that there were many traders, and that Old Chief Peter Moses had a store in Old Crow Flats; someone else also had a store at Schaeffer Lake (interview July 31, p. 3). Lydia Thomas remembers in Old Crow Flats that there are many cabins where people lived off the land. From those cabins they went all over (interview July 31, p. 2).

Irwin Linklater talks about going to the Old Crow Flats as a teenager with his grandfather (interview August 1, p. 2). At that time they would go up with dogs, and they had specific lakes and their own territory for muskrating; they lived in canvas tents while they were in the Old Crow Flats. Alfred Charlie recalls living in the Old Crow Flats in a tent with his family, trapping muskrat, mink and fox (interview July 31, p. 1). He would also go up to Old Crow Flats by himself, and remembers that in April it was still winter, it was cold, but that the snow melted fast (interview July 31, p. 1). He remembers being lonely and that he was hungry, because there were few animals; he was only occasionally able to kill rabbit and ptarmigan. In contrast, Alfred Charlie remembers spring time in the Old Crow Flats as plentiful, when they would hunt ducks before they flew (interview July 31, p. 11).

When discussing the Old Crow Flats, Alfred Charlie remembers that they “would go all different directions” (interview July 31, p. 2). Alfred Charlie remembers how cold it was in Old Crow Flats. “...Sometimes, when the wind blows in from the coast, it’s bad, it’s very cold. It’s a cold wind, it’s a strong wind, too” (interview July 31, p. 4). He also talks about how despite the cold in March, they still had to check their muskrat traps (Alfred Charlie interview July 31, p. 4). He emphasizes that the people who trapped “know their way around



Crow Flats and wherever they are going to set traps for the animals...” (Interview July 31, p. 4).

## Winter and Ways of Life in Cold Environments

### *Winter Movement*

Stephen Frost Sr. says that as long as there are caribou around, there is year-round movement (interview August 3, p. 2). Winter camps are in the timber to provide shelter and warmth, as well as wood for fires. Summer camps are in open windy areas to help with mosquitoes. This pattern is supported because not as much wood is needed in the summer, when fishing is the dominant activity. When asked directly about movement, Robert Bruce Jr. understands that in the past people would have a fish camp and then move around following the caribou in the winter (interview July 31, p. 1). Food would be cached and returned to when needed in the winter, and then they would continue to move.

When discussing the culture camp at *Diniizhòo* (Potato Hill, located on the western edge of the Old Crow Flats close to the border with the United States; see Figure 1), Robert Bruce Jr. says that it was a place where people gathered in the summer and in the winter (interview July 31, p. 1). It was a place where they celebrated in the winter, for Christmas and New Year’s. People used to live around there year round, subsisting off rabbits, caribou and muskrat. Robert Bruce Jr. also mentions caribou fences as being part of the yearly cycle; they were used in the summer and in the fall (interview July 31, p. 1).

Robert Bruce Jr. says that women were sometimes left at locations where houses of some sort were built while men went and hunted, but also mentions that his grandfather, Joe Kyikavichik, told him about moving around with his family (interview July 31, p. 2). In some instances they would leave and come back to family, and in other instances they would leave the family a day behind (Robert Bruce Jr. interview July 31, p. 2).

Charlie Thomas recalls staying at a lake for the winter (interview 2 August 1, p. 1). By the time he was living on his own he was trapping for marten in the winter and for muskrats in the spring. Trapping would start in November, and then he would return to Old Crow for Christmas (interview 2 August 1, p. 2). In the New Year he would continue trapping marten and he remembers there being caribou in the area where he trapped (interview 2 August 1, p. 3). Muskrat season opens in March, so he would start trapping then, after the lodges had been staked in the fall (interview 2 August 1, p. 3). He would go to Old Crow for Easter and then head back out. He would stay out until the season ended on the 15<sup>th</sup> of June, and then boat down the Old Crow River or return with a dog team. He recalls that 1924 was the last year that people used a canvas boat to come down the river from Old Crow Flats in the spring after muskrat season was over (interview 2 August 1, p. 3).

Irwin Linklater (interview August 1, p. 2) confirms the pattern of movement for the winter described by Charlie Thomas:

...so you stake those [muskrat houses] in the fall then you trap mink till Christmas and in March you go back out [to Crow Flats] trap muskrats, stay there till June 15. You come in for Easter then you go back out till June 15.

Irwin Linklater also recalls his grandmother and great grandmother talking about huts made out of moss, and moving around in the summer time (interview August 1, p. 2). They would move to the mountains in the middle of April, when the gophers started to come out. When asked whether people moved around in winter or if they stayed in one place, Irwin Linklater responded that they stayed by the caribou fences and that for the winter they had caches from the fall. They would live off different small animals to survive, and have meat through the winter (interview August 1, p. 2). Then in spring time they would move away into the lakes and the Old Crow Flats; they would move close to the river.

Charlie Thomas, who was married to a *Dagoo Gwich'in* (a daughter of John Nukon) and lived with her parents, discusses life when he was first married

and living with his wife at Whitestone Village, located in the Upper Porcupine River area (see Figure 2), in the 1940s (interview 2 August 1, p. 1). They would trap marten and hunt moose and mountain sheep before Christmas. They travelled with a dog team to Old Crow for Christmas to get groceries. Alfred Charlie and his family would go to Johnson Creek Village for the winter (interview July 31, p. 2). Before winter they would get ready by drying moose and fish. When the river froze up in the fall, they set fish nets under the ice and in November they would trap all over for the winter. They would return to Old Crow for Christmas and trade in their furs. He also recalls that furs would be traded at La Pierre House.

Alfred Charlie recalls that in the winter the children did not go to school, and many people stayed out in the bush; some people would stay out for ten months (interview July 31, p. 2). Those that lived in the bush would go on patrol and visit each other's camps all winter (Alfred Charlie interview July 31, p. 7).

Lydia Thomas suggests that people would stay at their cabins all winter (interview July 31, p. 2). They would go up in August and come back down in the spring time. After New Year's she recalls that families would move across Lone Mountain to hunt caribou (interview July 31, p. 3). They would return to their camp, hauling caribou meat with dog teams (interview July 31, p. 3).

### *Winter Survival*

Survival in the winter was dependant on the location of camps, according to Stephen Frost Sr. He describes multiple locations as ideal for the summer, including near a lake or river, near a good fishing spot, or at an open area where the wind would deter mosquitoes. This pattern is in contrast to the winter, when the ideal location for a campsite would be between lakes, near a deep creek, and around trees that are good for shelter and fuel (interview August 3, p. 2).

Lydia Thomas describes specifically what they would do to set up a winter camp:

We used to go with toboggan and dog team, we would camp, set our tents. When we are going to stay there for a long time, we dig out the snow where the tent will be and make it nice inside. On the sides they put sticks inside the tent and we put up poles for drying meat inside, dry muskrats while that when there's caribou... (Interview July 31, p. 2)

When spring came, they would erect cache poles outside to dry the meat (interview July 31, p. 2).

Attitude towards the cold also appears key to winter survival. There is a general attitude of indifference to the cold. Lydia Thomas, when asked about winter, said, "long time ago, we were strong so we didn't know about cold" (interview July 31, p. 1), indicating an essentially confident attitude towards the cold. Alfred Charlie also mentions that they were used to the cold weather (interview July 31, p. 3). Proper clothing for winter was also essential to survival. Alfred Charlie remembers that even though it was very cold in the winter, the clothes made by the women made them feel warm (interview July 31, p. 3).

Gear for mobility also helped with survival in the winter. Alfred Charlie recalls that they would use snowshoes to go long distances hunting. "They never said 'I'm tired'. This is how they made themselves strong towards the end in the spring time..." (Interview July 31, p. 3).

Caching of food is linked to winter movement as well as survival. Robert Bruce Jr. (interview July 31, p. 2) discusses caching for winter, when food is left under rocks in the mountains around the Old Crow Flats, and areas where the caribou migrate through, providing food for winter. Alfred Charlie also talks about piling meat under the snow in winter (interview July 31, p. 4). Once the caribou is skinned and butchered, the meat is piled in one place under the snow and then covered. The meat does not freeze together under the snow (interview July 31, p. 4).

Co-operation also plays a central role in winter survival. Lydia Thomas remembers that everyone trapped together, the men and women (interview July 31, p. 1). Alfred Charlie remembers people from Fort Yukon, Fort McPherson, Dawson, Old Crow, and the Inuvialuit travelling amongst each other. They would

all help each other out, extending in a large family network (interview July 31, p. 8).

## Summary

Schaeffer Creek, according to the archival research, was a fishing place, a place to gather for the winter, and a place to stay en route to or travelling from the Old Crow Flats. Schaeffer Lake was a place for winter trapping and for muskrattling. The interviews suggest that a site at Schaeffer Creek could also have been used year round. From the information recovered from the archival data, it is evident that the area of Schaeffer Creek was used at different times of the year.

Old Crow Flats is remembered as a place used in times of scarcity. People would hunt caribou and moose, as well as acquire muskrats, practices that make its use multi-seasonal. A population change of caribou as well as a muskrat population change over time would affect when and how often the Old Crow Flats were visited. The presence of traders in the Old Crow Flats and Schaeffer Lake could suggest that it was a highly utilized and populated area, enough to warrant traders being there.

Winter movement depended on many factors. The extensive trail system reported by sources would suggest that movement happened frequently. Movement would take people to resources and protection. Movement could be alone, with groups of trappers, or with family. The cycle that is reiterated by most of the informants includes fall preparation for winter, which included hunting caribou, staking muskrat houses and drying fish. The winter was spent trapping, either in the Old Crow Flats or other areas around Old Crow, then a return to Old Crow for Christmas and New Year's, then back out trapping. Spring would be spent muskrattling in the Old Crow Flats until the close of the season in the middle of June. Then they would return to the Old Crow area for the summer.

From the archival and interview data the patterns of movement that emerge for winter include: (1) constant movement and travel all over; (2) winter settlement in one place; (3) winter villages, including Johnson Creek Village and

Whitestone Village; (4) spending the winter in Old Crow and using it as a base to make smaller side trips; (5) use of caribou fences and caching as a basis of subsistence. The contrasting reports of winter movement are evidence of a fluid, not static existence during cold weather. Cold weather adaptations were constantly being modified to suit many factors, making cold weather behaviour complex.

Survival during cold weather depends on many different factors all working together to help people thrive. These include social arrangements – people helping each other and groups coming together. Preparation in the summer and fall for what was needed in the winter was essential, while resources were plentiful. Trapping helped by bringing small mammals to eat, as well as furs to trade for goods. A different mindset is also required to survive during cold weather. Many of the informants talk about not knowing cold and that being prepared with the right clothing made the winter not feel cold. This attitude seems central to living in the subarctic winters.

## Discussion and Concluding Remarks

Charlie Thomas, in his nineties when interviewed, was the eldest person interviewed regarding the area. He did not know of any site around the area of Schaeffer Creek Campsite, or any Inuit presence in the area, observations that could mean that the site is older than his memory, or that it existed during his time and he was just not aware of it. Another possible explanation for a lack of memory of the site is confusion of the location of Schaeffer Creek Campsite, which would have led to interviewees not recalling the site. It is plausible that a site existed during the memory of elders, but that they did not know it as Schaeffer Creek Campsite or someone unrelated to them was responsible for it. Also, it could have been temporary enough that there would be no current memory of it. Charlie Peter Charlie Sr., a *Dagoo Gwich'in*, commented immediately when he saw the remains at Schaeffer Creek Campsite, that the site,

“wasn’t one of ours,” putting into question who could have occupied the site (Le Blanc, personal communication).

Lydia Thomas remembers that her grandparents had a cabin on Schaeffer Creek, which they called King Edward Creek, in which they would stay all winter. This different name could be another reason that people do not remember a site on Schaeffer Creek, although this explanation is doubtful. By the 1920s the Old Crow Flats had recognized territories, with the area around Schaeffer Creek now recognized as Irwin Linklater’s family’s area. He did not recall a camp where it was shown on the map, so the site may be before his time.

Charlie Thomas also remembers many groups of people in Old Crow Flats in 1926, so the site could belong to a group other than the Van Tat Gwich’in, but that explanation is doubtful, because it was along the path from Rampart House to Old Crow Flats, making it a travel route for the Van Tat Gwich’in. Lydia Thomas remembers lots of people having cabins in Old Crow Flats, which were used as a home base.

Another point to consider when discussing cold weather adaptations is a definition of winter. Spring still had winter conditions, including cold temperatures and snow cover. This situation is important to note when labelling a site as either a winter or spring occupation. If the same conditions of winter apply to a longer period of time, then thinking should be adjusted regarding the labelling of a site as a winter occupation or not. What would traditionally be called a spring occupation should actually be labeled cold weather because people were still dealing with winter conditions into March and April. Cold weather conditions from freeze-up are the norm for people living in this region.

From both the archival and interview data it is clear that cold weather adaptations are diverse. Depending on the location and the focus of life, winter was experienced differently. Winter habits were adaptable, though certain trends are detectable. There is a common thread that connects all of the people interviewed: they all thrived in winter. It was an important time during the annual round. The activities they underwent during that time were equally important to survival as activities during the rest of the year. People did not stay inside and

hibernate and wait for the winter to pass. They were active participants in cold weather. Their attitude towards winter is generally positive, which is in contrast to academic discussions of winter, in which people were considered to have a simple, yet difficult existence.



## Chapter Five: Archaeology

### General Description

Survey work directed by Jacques Cinq-Mars and Raymond Le Blanc in the Old Crow Flats in 1983 led to the discovery of Schaeffer Creek Campsite. Mélanie Fafard completed excavation of the site in 1997. It is located at 67° 58'N, 140° 15'W, in the southwestern portion of the Old Crow Flats, 700 m north of MIVm-4 (*Dechyoo Njik*), approximately 40 km north of the Porcupine River. Access to the site is gained from the right bank of Schaeffer Creek, a short walk, 50 m to 100 m inland. There is exposure of wet tussock tundra 30 m to the east of the site. The site is located in a damp, wooded clearing, covered in shrubs, and is surrounded by black spruce and willow (Fafard 1997b). The topography of the site is hummocky (Raymond Le Blanc, personal communication). The site area measures approximately 20 m north-south and 10 m east-west, sloping from north to south, and is rectangular in shape (Fafard 1997b).

### Excavation Strategy

Excavation was completed over nine days in the summer of 1997, by a small crew consisting of Vernon Kaye, a Van Tat Gwich'in community member from Old Crow, and assisted by John Butt, from the University of Alberta, for the first two days (Fafard 1997b).

A datum was established at the northeastern edge of the site, and baselines were set with a transit along the eastern limit (north-south), and then an east-west line was established. Grid north is at 0° East of North. A grid of 1 m by 1 m units was made (Figure 3), and all of the brush was removed (Fafard 1997b). A site map was produced, and features were drawn, with position determined using the established grid, and vertical measurements determined using a line level and arbitrary datum (Fafard 1997b).

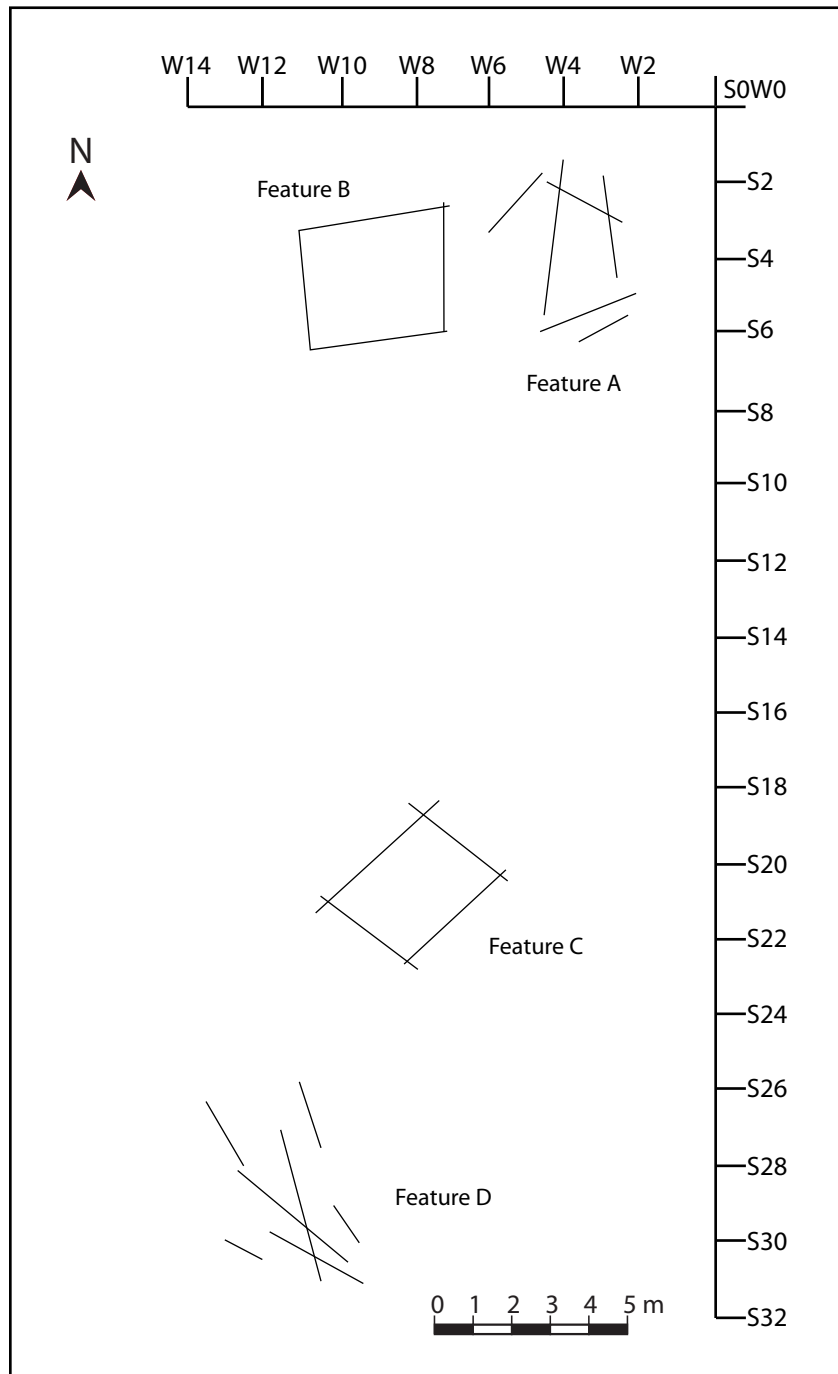


Figure 3. Site Map of Schaeffer Creek Campsite.

The location of artifacts was recorded in three dimensions (using the same line level and datum used for feature mapping). Screening was not performed due to the difficulty of damp sediments (Fafard 1997b). Permafrost was close to the surface, and as a result the top moss layer had to be removed to let the sediment thaw for one day before excavation could continue, at which point the sediment was saturated (Fafard 1997b). The sediment was filled with roots, so large and small cutting shears were used.

Thirty-five units were excavated; 20 units in Feature A (House #1), 14 in Feature C (House #2), and one unit in Feature B. Attempts were made with shovel tests to locate any potential concentrations around the features, but nothing was found (Fafard 1997a: 34). Test pits were shovel excavated in Features B and D to ascertain the presence of artifacts, but nothing was recovered (Fafard 1997a: 36). As a result, none of the test pits were recorded.

### Stratigraphy

Directly under the moss, some bone and stone fragments were recovered. Within the moss layer was a great amount of decaying wood. In some areas, the permafrost extended to a depth of 20 cm below the surface. The sediment contained decaying wood, and roots and was mainly a black organic layer. Below this layer was a grayish brown layer that was sterile (Fafard 1997b). It appears that there may have been a fire in the area, for in unit S21W5, burnt logs were observed (Fafard 1997a: 38).

### Features

Four features were identified, including two house structures (Feature A and C), foundations of an additional structure (Feature B) and an elevated cache (Feature D) (Figures 4 to 7). All of the structures were collapsed, with the remains partially embedded, either in the moss layer or just below it. The two dwellings are easily identified as such because of the associated artifacts, many related to household



Figure 4. Feature A (House #1), picture oriented to the northeast.

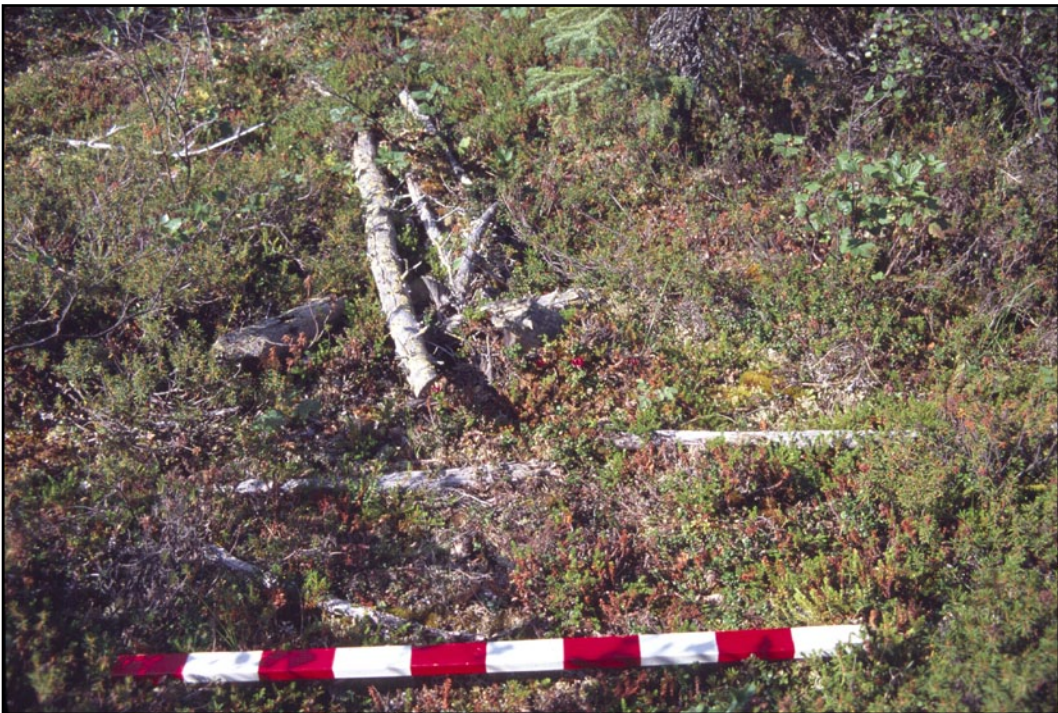


Figure 5. Feature B, picture oriented to the south.





Figure 6. Feature C (House #2), picture oriented to the southeast.



Figure 7. Feature D (Elevated Cache), picture oriented to the west.

activities, while the function of the third structure is unclear, as it could be the remains of a cache or some other sort of building (Fafard 1997b). Vernon Kaye suggested that some of the wood pieces were not part of the structures, but rather were accumulations for firewood (Fafard 1997a: 15), making functional identification uncertain.

#### Feature A (House #1)

This feature is located in the northeastern part of the site. It is associated with the structure of unknown function (Feature B). From the remaining surface remains, the house is estimated to measure approximately 3.5 m by 2.5 m, with a rectangular outline (Fafard 1997b) (Figure 8). It contains logs and a few planks, and had collapsed towards the north. Of the 20 units excavated, only ten contained artifacts (Fafard 1997b).

Associated material remains that identify this feature as a house is a stovepipe flange. Wire attached to the corners of the flange would have connected to the material of a canvas tent with a wooden frame. Vernon Kaye commented that the presence of the stovepipe flange suggests that this structure would have been the base of a canvas tent (Fafard 1997a: 14). Although the lightweight sheet metal stoves were known to be used all year round, the presence of multiple stoves, on the site as a whole, could suggest an occupation during cold weather.

#### Feature B

This structure is located one metre to the west of Feature A (House #1). The surface remains included the foundation of a structure estimated to be approximately 3.5 m by 3.5 m (Figure 9). Each side had two or three superimposed logs. A log that had been flattened on the top and bottom was found on each of the east and south sides of the structure. A notched log was found on the east side of the structure, so that it could be connected to another log on the

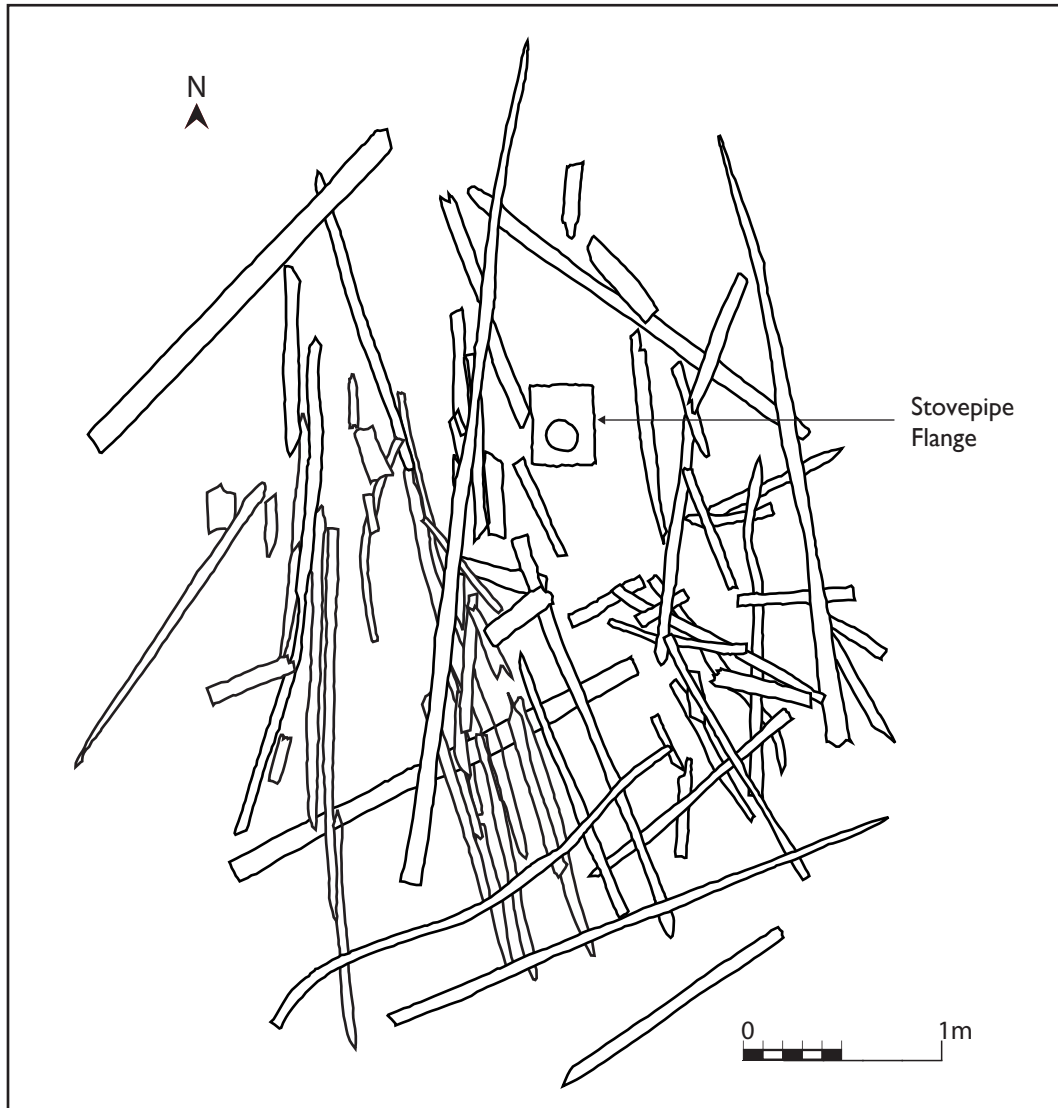


Figure 8. Feature A (House #1).

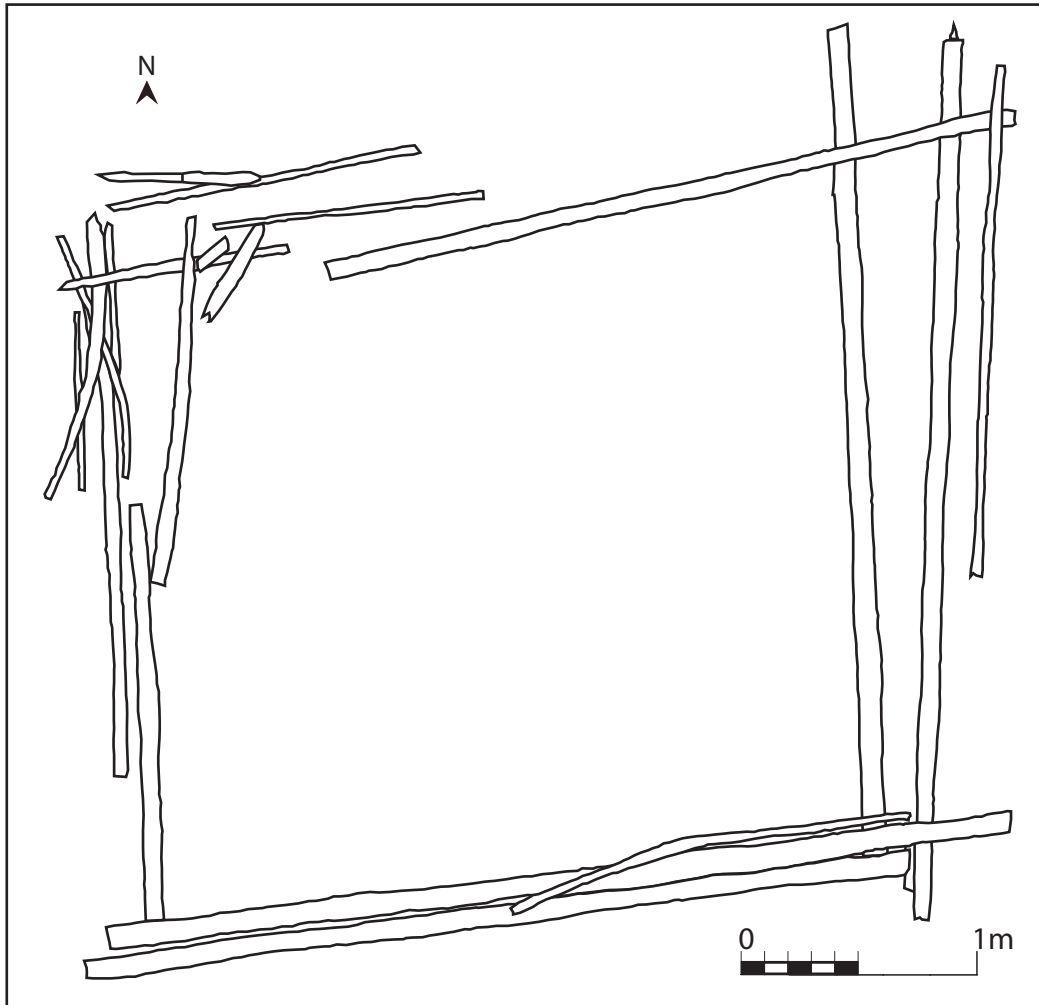


Figure 9. Feature B, Unknown Function, Possibly the Base of a Canvas Tent or the Remains of a Cache.



southern edge. There were no logs observed aside from those that formed the base of the structure, nor were any artifacts found on the surface (Fafard 1997b).

One unit was excavated in the middle of the structure (S5W10), but nothing was found. The remaining parts of the structure were shovel tested, but no artifacts were recovered (Fafard 1997b). Vernon Kaye believed that this feature is the remains of the base of a canvas tent. He did not think that this feature would have been a cache, because it is placed too close to the house (Feature A, House #1), as it would have attracted animals (Fafard 1997b), making it an undesirable location so near a habitation.

#### Feature C (House #2)

This structure is located just west of the remains of a toboggan, northeast of Feature D and south of Features A and B. It was identified when logs were found associated with the toboggan. The base was composed of superimposed logs similar to Feature B (Fafard 1997b). The remains were found under the moss and in a greater stage of decomposition compared to the other structures at the site, a situation that caused them to disintegrate when they were removed. This difference could suggest that this structure was not contemporaneous with the other features or, more likely, that moss could have been used on the structure, or that this area of the site was wetter than where the other features are located.

After removing the moss, the size of the structure was determined to be 3.6 m by 3.25 m (Figure 10). Very few artifacts were found in relation to this structure, but the presence of a stovepipe flange suggests that it may have also been the remains of a canvas tent. Charcoal and small fragments of burnt bone were found. The door is estimated to be facing southwest (Fafard 1997b). In the northeast corner of the structure a few short logs aligned one next to another in a regular pattern were found, a feature which could be some sort of platform that might have been used for sitting on or storing material, or perhaps as a bed (Fafard 1997a: 39).

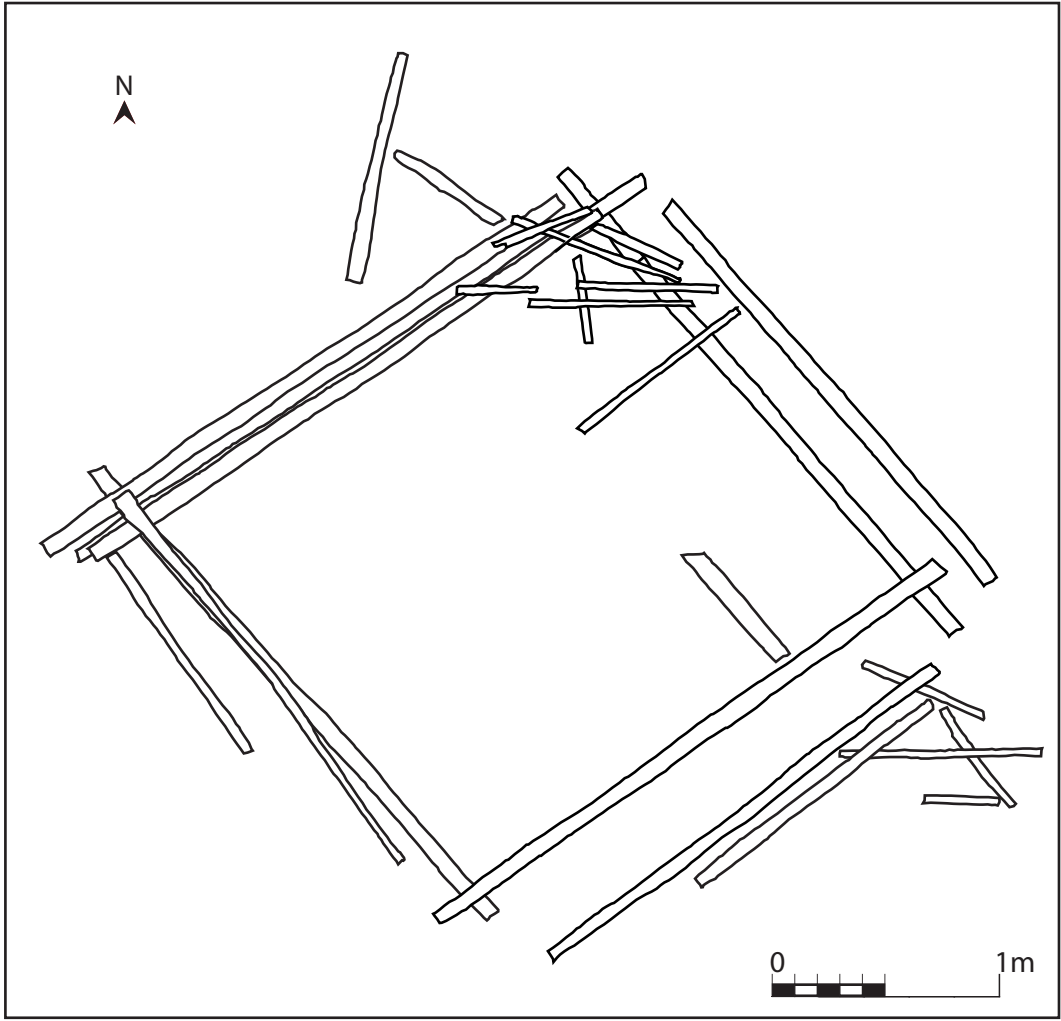


Figure 10. Feature C (House #2).

## Feature D (Elevated Cache)

This collapsed feature, located in the southwestern portion of the site, had four vertical supporting posts (Figure 11). The size of this structure was difficult to determine because it was not in situ. Estimating size with the longest logs found on the surface indicates that the cache would not have been larger than 3 m by 3 m. The supporting logs, which were larger than any other logs found around the structure, indicate that the height of the cache would have been at least 1.25 m. Vernon Kaye suggested that this type of cache could have been used for meat or hunting equipment storage (Fafard 1997b).

## Summary

The four structures examined show that the site was occupied during a season when people would have been living in canvas tents and using stoves to keep themselves warm. This observation in and of itself does not specifically suggest a cold weather occupation, as cooler temperatures in the summer months could warrant the use of a stove. However, the fact that people left the stovepipe flanges and toboggan could suggest that they left the site after living in it during the late winter, when temperatures were rising and these items were no longer worth carrying. The toboggan could suggest that goods were being transported to the Old Crow Flats in late winter in preparation for the muskratting season, or it could have been left there after muskrat season was finished.

## Artifacts Descriptions

Eleven artifacts were collected on the surface; nine associated with Feature A, and one each with Features C and D. These were all found above or beneath wood structural elements of the features. The majority of surface artifacts were wood, but some were metal. The other 46 artifacts were collected during the excavation.

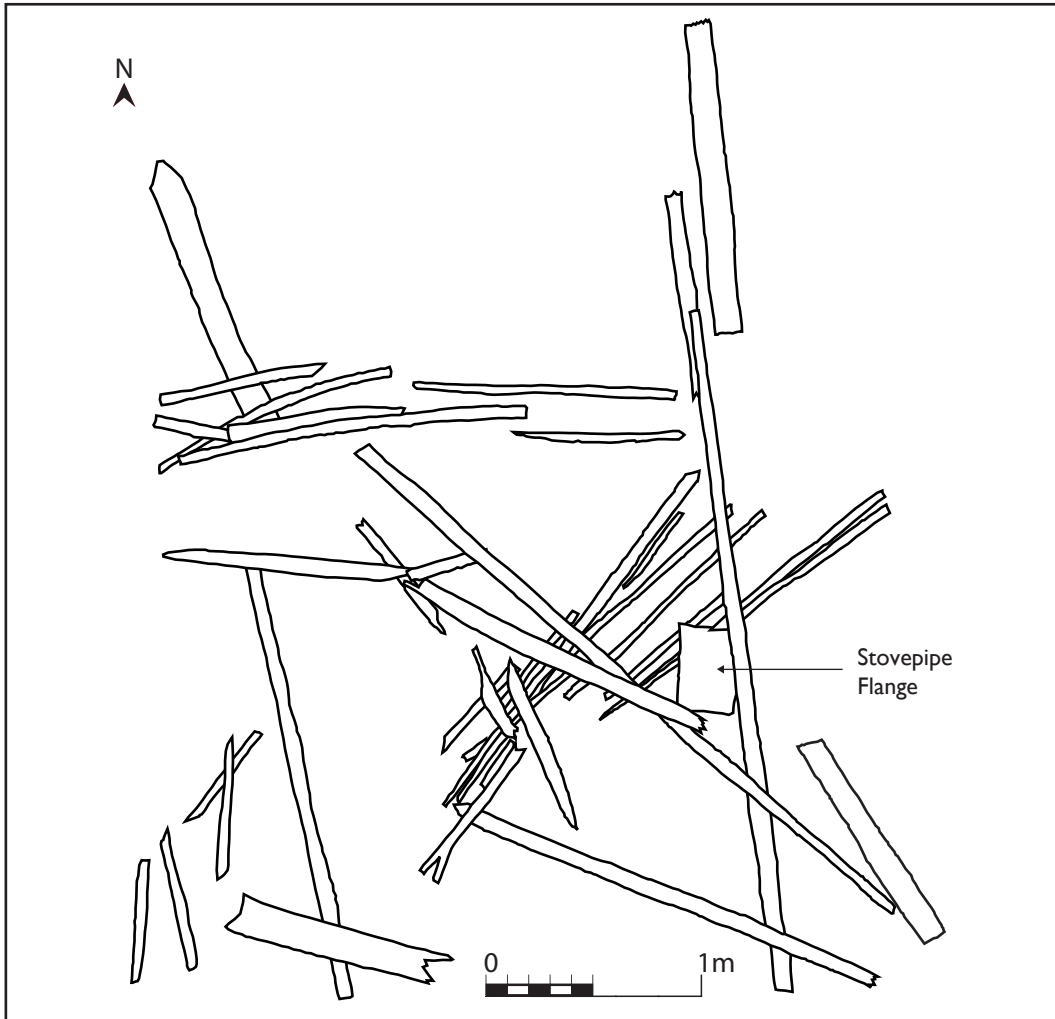


Figure 11. Feature D (elevated cache).

Stratigraphic levels were not distinguishable, so artifacts will not be separated for description by level. The artifacts are divided into locally manufactured goods and imported manufactured goods (after Morlan 1972a; 1972b; VanStone 1968; Oswalt and VanStone 1967; VanStone and Townsend 1970). Further subdivisions are material based.

### Locally Manufactured Goods

The locally manufactured goods recovered from Schaeffer Creek Campsite (SCC) include metal, wood and stone. Artifacts that have materials that are imported are locally manufactured, and therefore listed in this category. The prevalent locally manufactured goods at SCC are metal items that are in various stages of recycling, as well as wood artifacts, including stretchers and toboggan fragments. One large quartzite cobble was also recovered, and is included under locally manufactured goods.

#### *Metal*

Fifteen locally manufactured metal artifacts were recovered. They include two stovepipe flanges, two stovepipe fragments, one Blazo can, four pieces of sheet metal and six miscellaneous metal fragments.

Two *stovepipe flanges* were recovered. The first *stovepipe flange* was found in Feature A (House #1) and measures 31 cm by 37 cm (Figure 12). It was manufactured from a sturdy metal panel with beaded edges, and has a broken wire nail fragment sticking through it. A hole was created for the stovepipe in the middle by bending back triangular pieces of the metal. The hole measures 13 cm by 14 cm. On the four corners there are holes measuring from 0.5 cm to 1.0 cm in diameter, punched (by hammering a nail through the metal) to put wire through to tie the flange to a canvas tent. A fragment of multi-strand wire, 2.0 mm in diameter, is attached to one of the holes.



Figure 12. Stovepipe Flange Recovered from Feature A (House #1).

The second *stovepipe flange* was found in Feature C (House #2), and measures 35 cm by 28 cm (Figure 13). The hole for the stovepipe measures 13 cm by 14 cm. Sixteen circular holes were punctured around the centre, measuring between 4.0 mm to 5.0 mm in diameter, to attach the stove pipe flange to a canvas tent (wire passes through holes in the canvas and holes in the flange to connect the two together). One hole on the corner has a single strand of wire attached that is 1.0 mm in diameter. This flange appears to likely be made from a Blazo can, with the edges cut and pounded down.

Two *stovepipe fragments* were also recovered. The *first stovepipe fragment* was found in Feature A (House #1). It is completely flattened, measuring 24 cm by 17 cm. The *second stovepipe fragment* was found in Feature C (House #2). It still maintains its cylindrical shape, but is compressed in the centre. Two nails remain that held the sheet metal together to form the cylinder. The fragment measures 35 cm by 12 cm diameter. Neither of the stovepipe fragments contains distinctive markings to identify their original material.

One *Blazo can*, a 5 US gallon Pressure Appliance fuel connector, was collected associated with Feature D (Elevated Cache) (Figure 14). It measures 35 cm by 23 cm. One of the sides (opposite the spout) has been split in two lengthwise, and then each half is folded back. The cuts on the metal have been made with metal shears. The spout apparatus is different than a Blazo can specimen, which dates to the 1950s or earlier (Le Blanc, personal communication), indicating an earlier date of manufacture. One corner is darkened, a feature that could indicate burning or discolouration from resting in the moss. Because distinct fire-blackened marks are not present, this artifact was most likely not used to heat water, but rather as a bucket to store or transport liquids.

Four *pieces of sheet metal* were recovered from Feature C (House #2) that have been worked or altered. They all show signs of being cut with shears. None of them contain any distinctive markings or features that would determine their source.



Figure 13. Stovepipe Flange Recovered from Feature C (House #2).





Figure 14. Blazo Can, View Looking into Can.

The *first piece of sheet metal* measures 61 cm by 27 cm. Most of the edges are folded or partially folded over, the fold ranging from 0.4 cm to 1.1 cm. This piece consists of two smaller square pieces that are held together by a folded seam to create a rectangular shape, but the seam is now almost separated. Both of the halves have cuts that look like the metal has been “ripped” or pulled apart. Approximately 1/6 of this piece lengthwise is folded over at a 30° angle from the rest of the metal.

The *second piece of sheet metal* measures 34 cm by 27 cm. It has sporadic edging, the fold ranging from 1.0 cm to 3.2 cm. The cutting along the edges of the metal is even, not choppy. There are three puncture marks in the metal that look to be from use of a knife.

The *third piece of sheet metal* is folded in half, and measures 34 cm by 28 cm (unfolded width). It is made of a thicker gauge than the previous two pieces of sheet metal. None of the edges are folded over, but there is a folded seam holding two pieces of metal together. One of the corners is doubled over 6.0 cm to create a triangular edge.

The *fourth piece of sheet metal* is folded in half, and measures 36 cm by 29.5 cm (unfolded width). It is made from a sturdier material. Three out of the four sides have been folded over to create an even edge that ranges from 0.4 cm to 0.6 cm.

Six *miscellaneous metal fragments* were also recovered. The first three were recovered from Feature C (House #2), and are roughly rectangular in shape. They appear to have been “ripped” from a bucket. The *first metal fragment* measures 17.1 cm by 2.1 cm by 0.7 mm. The short side has been folded over 5.0 mm. It is not uniformly rectangular, but extends from 1.1 cm to 2.1 cm to 1.5 cm in thickness from one end to the other. The metal curves partially, just short of a semi-circular shape. The *second metal fragment* measures 13.8 cm by 2.4 cm by 0.5 mm. It is generally rectangular in shape, but one end comes to a point and is folded over 2.1 cm (the total length does not include this feature). The top is not edged, but looks to be in the process of being bent over, with an indentation at 0.5 cm from the end. This piece does not curve, but is not completely flat, either. The

*third metal fragment* measures 15.6 cm by 1.5 cm by 1.0 mm. One side of the width is folded over 6.0 mm, but it is folded unevenly. One side of the length is uniform, while the other is uneven, indicating that it was cut. Overall, the metal is curved longitudinally.

The three remaining *metal fragments* are of varying shapes and sizes, but were all collected from Feature C (House #2). They were not found in direct contact, but their association with one feature could indicate metal was being worked and recycled at this location. The *fourth metal fragment* is triangular in shape, and measures 2.9 cm by 2.9 cm by 0.5 mm. Two of the edges are folded, in opposite directions, 4.0 mm and 7.0 mm from the edge. The material is flimsy metal, the same as the previously discussed rectangular pieces of metal. There are no markings on the metal. The *fifth metal fragment* measures 5.3 cm by 2.0 cm by 1.3 mm. It is a heavier metal than the other fragments. This triangular piece has one corner folded over 6.0 mm. Two of the sides are evenly cut, while the third side has an uneven edge. The *sixth metal fragment* measures 6.5 cm by 0.8 cm by 2.0 mm at the thickest point. This piece is trapezoidal in shape. It is firmer metal and is rusted. It is not uniform in thickness or width.

When asked where the Van Tat Gwich'in acquired metal, Robert Bruce Jr. (interview July 31 Page 2-3) suggests three places: Rampart House, Cadzow's store (he does not specify between the locations at Rampart House or Cadzow Lake), or Herschel Island; his great grandfather used to trade at Herschel Island. People would also trade in Fort McPherson or at the village/store at La Pierre House.

### *Wood Remains*

Locally manufactured wood artifacts recovered include an axe handle, two stretchers, a wood plank with nails, a wood plank fragment and a fragmentary toboggan.

The *wooden axe handle* was found in Feature A (House #1), and measures 102 cm by 3.0 cm by 2.5 cm (the width and thickness vary, as the wood is not

uniform). It was identified as such by Le Blanc, but Vernon Kaye identified it as a bow, because he thought it was too thin and long to be an axe handle (Fafard 1997b: 16). The wood is straight for half its length, and then begins to curve slightly for the remaining length. It appears to be made of local material, rather than imported wood. No other distinguishing marks can be seen on the wood.

Two *wooden stretchers* were found in Feature A (House #1), and identified by size as muskrat stretchers by Vernon Kaye (Fafard 1997b: 15). They measure 31 cm by 10 cm by 1.0 cm and 42.5 cm by 9 cm by 0.8 cm. The former is thicker and wider at the base, and the top is broken off (Figure 15), while the latter is thickest in the middle. Neither of the stretchers have any distinguishing marks or features, but they are made from spruce, a local material.

A *wooden plank with nails* was recovered in Feature A (House #1). It measures 69 cm by 5.0 cm to 8.0 cm by 2.5 cm. The plank was originally made of milled lumber. Three nails are embedded in one end of the plank, all within 6.0 cm of each other, two wire nails near the edge and one square cut nail towards the middle, in between the wire nails. The end that has the nails has been sawn off, while the other end has been cut with an axe. At the axe cut end, there is a notch that is 3.0 cm across and cut in 1.5 cm from the edge. The notch does not appear to have been cut with a knife, but with some other type of blade. The presence of the square cut nail suggests that nails were being reused, since this type was common only until the 1880s, when they were replaced by wire nails, of which all of the remaining nails are.

A *fragment of a wooden plank* was also collected from Feature A (House #1), and measures 18 cm by 4.5 cm by 0.9 cm. It is wide at the base and comes to a point at the opposite end, where it measures 2.0 cm across. The wood is local material.

The *toboggan* pieces recovered were associated with Feature C (House #2) (Figure 16). Partially decayed logs that were not part of the toboggan and burnt glass pieces were found under the toboggan. The burnt pieces of glass could indicate a midden and/or a fire in that location. The *toboggan* consists of three parallel planks and is made of a hard wood, probably oak, which would have been



Figure 15. Wooden Stretcher.



Figure 16. Toboggan Composite, Obverse on Left and Reverse on Right.

imported. The *first plank* measures 56 cm by 13 cm by 1.0 cm. This piece has one end cut straight, and the other end has been broken. The broken end curves up slightly, indicating the front of the toboggan. A cross brace is attached underneath the toboggan, perpendicular to the long axis, 22 cm from the back of the toboggan piece. Two bolts with a 0.75 cm diameter hold the brace to the toboggan, and are fastened to pieces of sheet metal measuring 2.0 cm by 2.0 cm. Within the brace are two lateral holes, which are 0.8 cm wide and 1.0 cm wide. The former is in the centre of the brace and the latter is 2.0 cm towards the edge of the brace. The holes in the brace could have been used to attach ropes along the side to tie down a load to the toboggan. A discoloured strip approximately 2.0 cm wide is located 22 cm anterior to the cross brace, indicating the site of another cross brace. The placement of the cross braces determines that these toboggan fragments would have been the curved anterior part of the toboggan that did not contact the ground.

The *second plank* of the *toboggan* measures 48 cm by 12.5 cm by 1.0 cm. It is similarly cut straight on one end and broken on the curved end. The centre of the plank has a discoloured strip approximately 4.5 cm wide, indicating the site of a cross brace. One screw and attached piece of sheet metal are located 24 cm from the back of the toboggan passing through the discoloured strip. The *third piece* of the *toboggan* is broken on all sides. It measures 36 cm by 5.0 cm by 1.0 cm.

All of the pieces of the toboggan have been cut at the base, a feature that could indicate that the toboggan was intentionally broken and the remaining pieces were removed from the site, presumably to be recycled or possibly burned for fuel, while the pieces left at the site were abandoned due to breakage.

### *Stone*

A large quartzite cobble measuring 21 cm by 20 cm by 7.3 cm was recovered from Feature C (House #2). This kind and size of rock is not naturally found in the region, so it would have been carried in for use.

## Imported Manufactured Goods

In some artifact analyses, imported manufactured goods are placed into functional categories; for example, VanStone and Townsend (1970) utilize the following categories: building hardware, tools and implements, household articles, firearms and ammunition, personal possession, subsistence, and unidentified. The Schaeffer Creek Campsite (SCC) collection is not extensive, so such categories do not provide any benefit to the analysis and will not be used. The imported manufactured goods collected from SCC are categorized by raw material in the following categories: glass, metal, bone, textiles and miscellaneous. The most prolific artifacts collected were metal objects. Of note is the presence of glass beads.

### *Glass*

Five fragments of *burnt glass* were recovered from Feature C (House #2), associated with the toboggan. They range in size from 1.8 cm to 0.6 cm by 1.1 cm to 0.5 cm by 0.2 cm thick. The fragments are burnt and deteriorated beyond identification.

The remaining glass artifacts found were eight *trade beads*. Classification is based on VanStone and Townsend (1970), who organize trade beads by colour, shape, and size. A more detailed analysis based on method of manufacture was not deemed necessary due to the small number of beads recovered. Four of the beads recovered fit into two similar categories, so these are described together and the remaining beads are described separately. Seed bead is a common descriptor of small beads and/or very small beads, but it is a size designation, rather than a functional classification (Karklins 1982: 85), so to disambiguate, they will be referred to as embroidery beads.

The first set of beads found in Feature C (House #2) are large, have a circular shape, and are a transparent golden yellow colour. The first measures 5.82 mm in length and has a 6.25 mm diameter (Figure 17a), and the second is 5.59



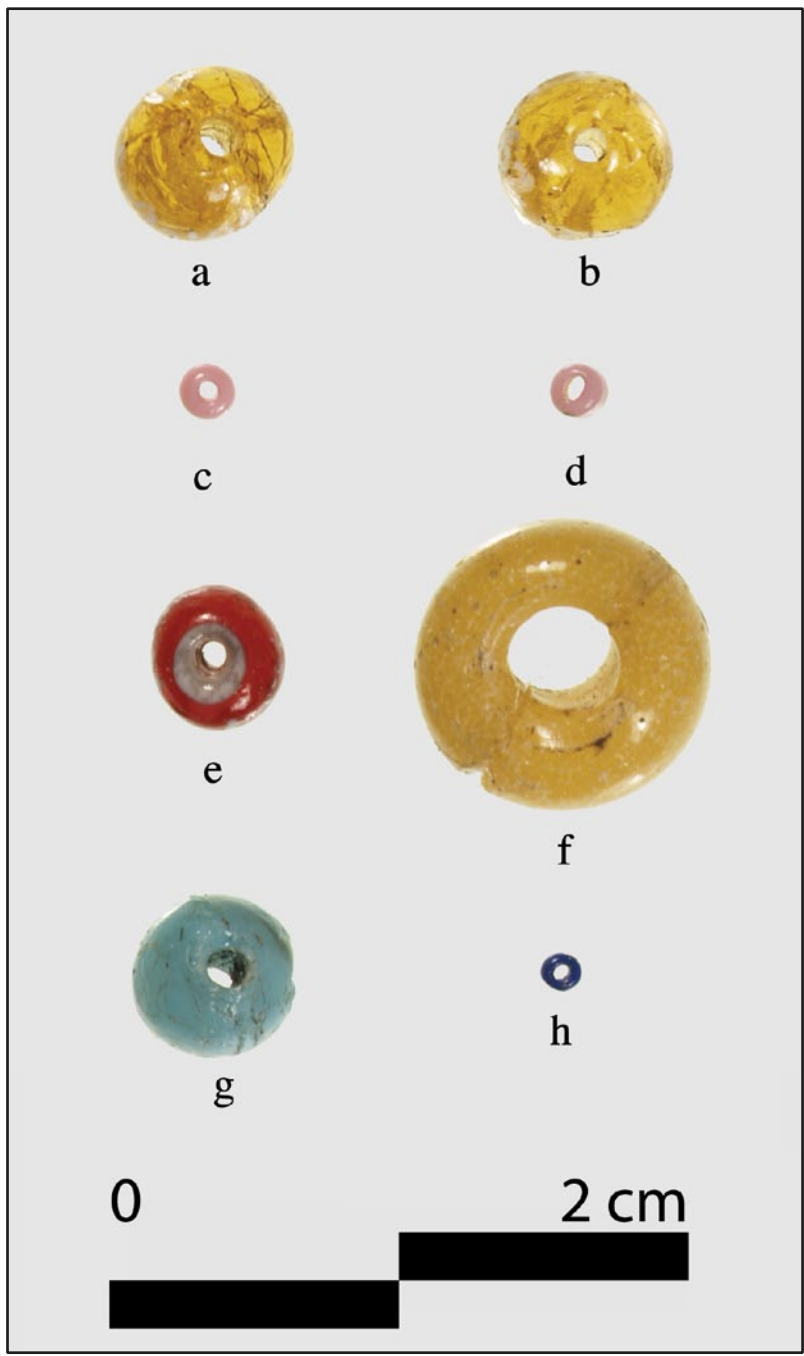


Figure 17. Trade Beads.

mm in length and has a 5.93 mm diameter (Figure 17b). The next matching pair are circular embroidery beads that have an opaque pale pink colour. The first measures 1.82 mm in length and has a 1.86 mm diameter (Figure 17c), and the second measures 1.35 mm in length and has a 2.01 mm diameter (Figure 17d).

The next is a small Cornaline d'Aleppo bead. It has a circular shape, and is opaque red with a white core. It measures 3.61 mm in length and has a 4.66 mm diameter (Figure 17e). Cornaline d'Aleppo beads are characterized by their red exteriors and various coloured interiors, including yellow, white, green, and brown. They were, "widely distributed among Indians of North America in the nineteenth century and ha[ve] been recovered from all historic sites so far excavated in southwestern Alaska" (VanStone 1970: 84-85). The Cornaline d'Aleppo were traded from the Hudson's Bay Company trading posts and therefore became known as "Hudson's Bay beads" (Orchard 1929: 87); it was one of the earliest types of beads traded in Canada, with the black-looking (but actually green) traded first, followed by beads with yellow and white centres (ibid.). The appearance of embroidery beads and white-line Cornaline d'Aleppo beads in the Yukon drainage coincided with the advent of American traders (Clark 1995: 99). The white-lined interior varieties are the most common and are widespread in northwestern Canada and surrounding areas (Woodward 1965: 19). As the white-lined varieties of Cornaline d'Aleppo beads post-date the green and brown lined ones, they can be relatively dated to the 19<sup>th</sup> century and later (ibid.: 19-20).

Cornaline d'Aleppo type beads are found at sites near Schaeffer Creek Campsite, including the Cadzow Lake site (Morlan 1972a), *Dechyoo Njik* (Fafard 1999) and NbVk-1 (Morlan 1972b). Fafard (1999: 78) dates the white-lined beads found at *Dechyoo Njik* in relation to dates from the Cadzow Lake data to around the 1880s. This date would suggest a later historic date for the Schaeffer Creek Campsite.

The next *trade bead* is a large circular bead (the largest recovered) that has an opaque golden yellow colour. It measures 7.55 mm in length and has a 9.93 mm diameter (Figure 17f). The final bead found in Feature C (House #2) is a

large bead, circular in shape, and is an opaque pale blue colour. It measures 5.34 mm in length and has a 5.62 mm diameter (Figure 17g). The only bead found in Feature A (House #1) is an embroidery bead, circular in shape, and is a dark blue colour. It has a diameter of 1.38 mm and is 0.72 mm in length, and is the smallest in the collection (Figure 17h). None of the beads are diagnostic temporally nor do they reveal anything about site usage, other than possible aboriginal use of the site, an interpretation that can be inferred from other artifacts, as well.

### *Metal*

A *metal trap* was found in Feature A (House #1; Figure 18, bottom). The pan or trigger mechanism is missing. It is a leg hold trap that uses a long spring mechanism, which is a v-shaped piece of metal, measuring 3.5 cm wide by 15 cm long, that springs up to release the jaws when triggered. The jaws are 1.0 cm thick each. The jaws are held to the base of the trap with two pins on each side set into two holes on tabs of metal connected to the each side of the base. The base of the trap has two holes with diameters of 5.0 mm, which would presumably be to connect the trigger mechanism. The base is 10 cm long and 2.5 cm to 3.5 cm wide, thicker on the side where the spring connects.

The *spring of a foothold trap* was also found in Feature A (House #1) (Figure 18, top). It consists of a piece of metal 2.4 cm wide, 25 cm long and 0.15 cm thick, bent to a 45° angle. The two ends have holes with a 1.7 cm diameter, which would have connected to the main part of the trap. It is similar in appearance to the spring of the trap labeled “No. 2 Fox, Hawley and Norton” in the Hudson’s Bay Autumn and Winter Catalogue 1910-1911 (1977: 215), and would have been a common trap during that time period.

A *.22 calibre long rifle cartridge* was found in Feature C (House #2) (Figure 19a); it has not been fired. It is 2.0 cm long and has a 0.6 cm head diameter. The stamp indicates manufacture by the Union Metallic Cartridge Company (Fontana and Greenleaf 1962: 79). This source provides a date after 1867, when the company was founded, but prior to 1912, when the Union



Figure 18. Spring of a Foothold Trap, Side View (Top) and Top View (Bottom).

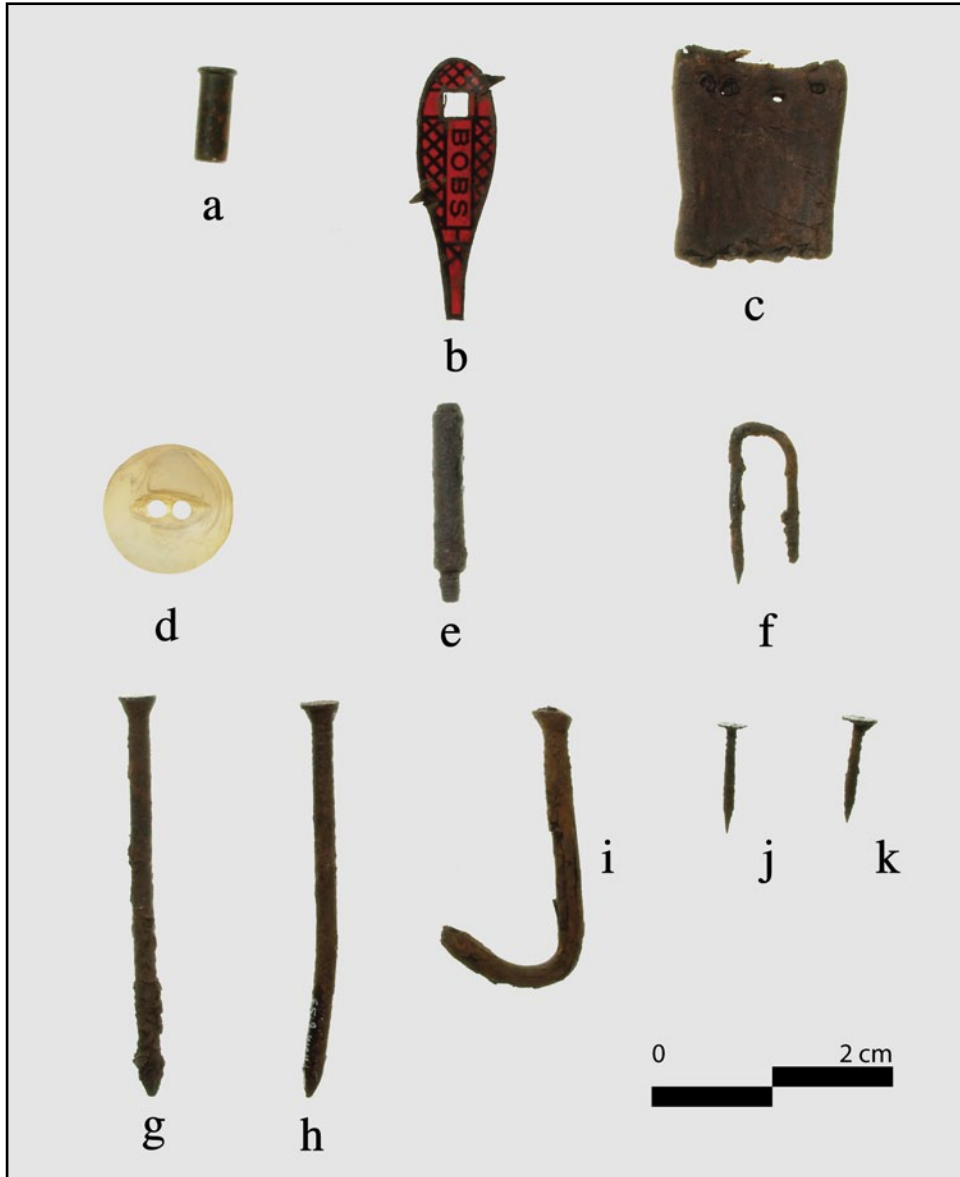


Figure 19. Euro-Canadian Trade Goods: (a) .22 Calibre Long Rifle Cartridge; (b) Tobacco Brand/Seal; (c) Leather; (d) Button; (e) Potential Peg; (f) Wire Staple; (g-k) Nails.

Metallic Cartridge Company merged with the Remington Arms Company. The most likely date for this type of cartridge is the 1880s (ibid.: 82). This is a common size of cartridge, and is used mostly to kill small animals.

A *tobacco brand/seal* in the shape of a miniature metal snowshoe was recovered from Feature C (House #2) (Figure 19b). It measures 4.3 cm by 1.3 cm at the widest point and 3.3 mm wide at the tail and is 0.5 mm thick. The piece has “BOBS” written on it. It is red in colour with black writing and cross-hatching around the writing, creating the webbing of a snowshoe. There are two triangular tabs protruding from the frame, one to the side of the tip of the snowshoe and the other on the opposite side and end. These would have attached the seal to the tobacco product, but they are now bent to be parallel to the rest of the piece. There is a square cut out of the middle of the tip, which is 4.0 mm in length and width. The back has nothing written on it and is just plain metal. Identification of this artifact is following the description of tobacco seals in Losey (1977: 181). None of the brands described are the same shape, but the material and manufacture of those items are similar enough to make the identification. These items were inserted into tobacco cut from bulk stock (ibid.).

A potential *peg or pin* was found in Feature C (House #2) (Figure 19e). The top has an indentation, with a diameter 0.3 cm and 0.2 cm length until it meets the shaft, which has a diameter of 0.5 cm. The smaller end of the artifact has a 0.2 cm diameter and is 0.5 cm long until it meets the shaft.

Five *wire nails* and one *wire staple* (Figure 19f-k) were also recovered from Feature C (House #2). Two of the *nails* are thin gauge and come to a sharp point. They are 1.8 cm long and have a head diameter of 0.6 cm (length measurements include head). The *third nail* is thicker and is heavily corroded. It is 6.6 cm long and has a head diameter of 0.6 cm. The *fourth nail* is rusted, but is still in good condition. It is bent at a low angle at the point, appearing as if it was nailed into something, but it did not go in straight. It is 6.5 cm long and the head diameter is 0.6 cm. The *fifth nail* is heavily corroded. It is bent into a j-shape, resembling a fishhook. The head is not straight. The total length of this nail is 6.5 cm and the head diameter is 0.6 cm. The *wire staple* (Figure 19f) is u-shaped,

with one end coming to a point and the other end dull. The total length of the wire staple is 6.7 cm and it is 0.2 cm thick. Wire nail production dominated in North America by 1902 (Fontana and Greenleaf 1962: 50), a date that would be congruent with the number of wire nails recovered as compared to square cut nails.

A possible *maple syrup can* was discovered in association with Feature A (House #1). It measures 11 cm by 6.0 cm by 27 cm (Figure 20). Upon examination of catalogues of the early twentieth century, the size and description of this artifact match maple syrup cans available at that time.

One *container*, an *incomplete container* and a *container fragment* were found in Feature A (House #1). The *container* is 16 cm tall and has a 12.5 cm diameter at the bottom. It is bent; the top has a 21 cm width at the widest and a 6 cm width at the most compressed point. It does not contain any markings that would determine manufacturer's details (Figure 21a). The *container* has two holes for the handles. Below the rim there is a small ridge running around the entire container, similar in description to a probable lard container recovered from a site in Alaska (VanStone and Townsend 1970: 124-125). The *incomplete container* is 11.8 cm tall and is 18.1 cm at the widest (Figure 21b). This portion of the container has one handle. The *incomplete container* is heavily corroded and is in two pieces. The second piece seems to be the bottom of the container and measures 10.2 cm by 12.3 cm. It has been cut from the first piece. The *container fragment* is triangular in shape, with the longest edge folded over; presumably it is the top of the container. It measures 5.8 cm by 4.3 cm by 1.0 mm thick. All of these specimens are too small to be buckets, but their composition leads to the hypothesis that they could be lard, peanut butter, or molasses cans. The containers match the diagram of a lard container recovered from Johnny Ward's Ranch (Fontana and Greenleaf 1962: 76) and appear too small to be molasses cans, making lard the probable contents.

Two *metal cans* were recovered (Figure 22). Neither of the cans have the dimensions of modern double-seamed cans, but their double seams indicate that they are open-top cans, which dominated by 1902 (Fontana and Greenleaf 1962:



Figure 20. Possible Maple Syrup Can.





Figure 21. (a) Container; (b) Incomplete Container.

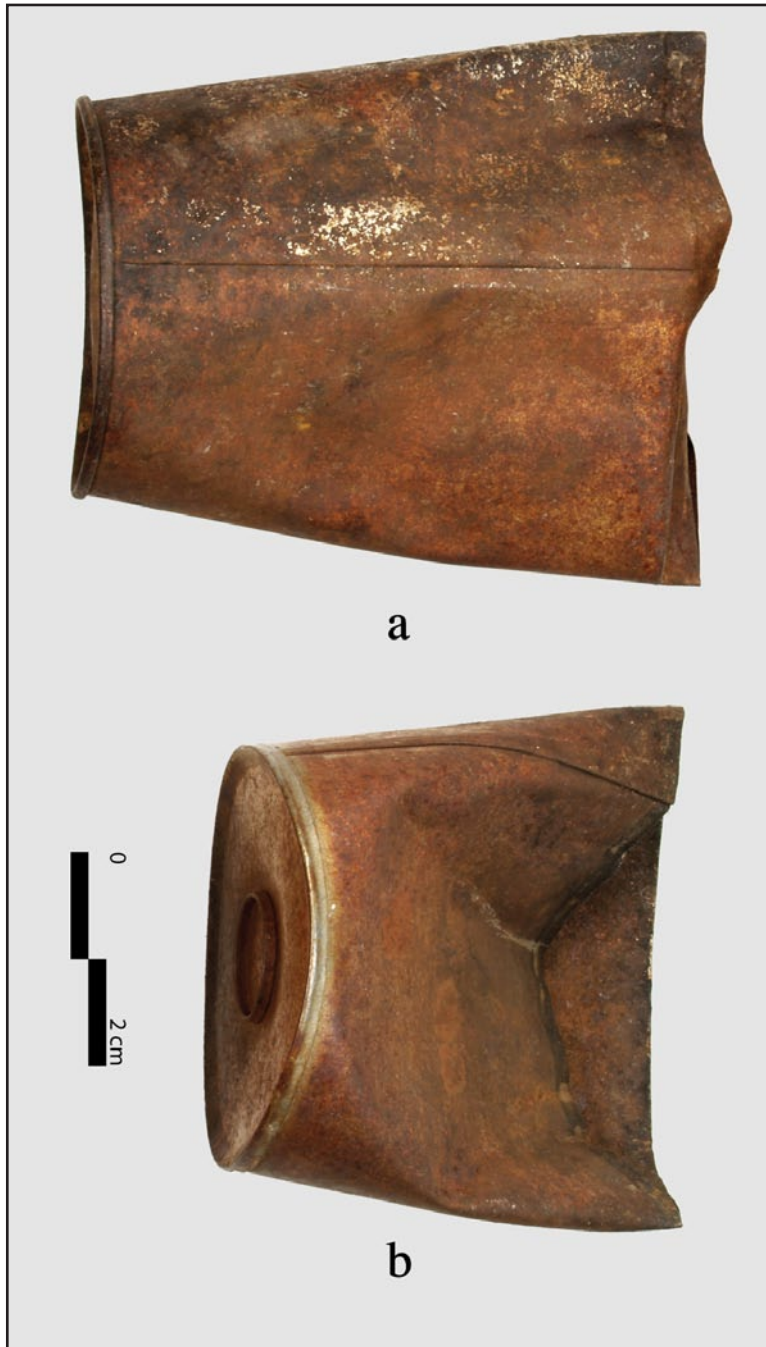


Figure 22. (a) Metal Can, Lateral View; (b) Metal Can, Lateral View.

73). The “open top” style that is double-seamed appeared in 1918 (ibid.: 72). The first *metal can* was found in Feature A (House #1) (Figure 22a). It consists of a one-piece body with a rolled seam and is cylindrical in shape. The top edge is even, indicating that it has not been cut open, but rather is the style with a separate lid. The can has a diameter of 7.2 cm and is 11.6 cm tall, dimensions that are similar to cans identified as baking soda cans by VanStone (1972: 66). It is compressed at the top, at the widest it is 10.1 cm wide, and at the most compressed point it is 3.5 cm wide. The entire can is heavily rusted, so manufacture details cannot be discerned. There is a hole rusted through the bottom.

The second *metal can* was collected from Feature C (House #2) and is of similar construction (Figure 22b). It has a one-piece body, a rolled seam and is cylindrical in shape, although it is stouter than the previous can. It measures 7.4 cm in diameter and 8.3 cm in height. This can is also crushed, with a 9.5 cm width at the widest and 0.8 cm at the most compressed point. The bottom of the can has a circle of lifted metal that is 2.0 cm in diameter. The top does not look like it was sealed, but rather that it had a separate lid, as it does not have any opener marks. No markings or manufacturing details are visible. The size of this can matches evaporated or condensed milk cans identified by VanStone (1972: 67) and VanStone and Townsend (1970: 123), but the majority of those cans were hole-in-top, while this can cannot be identified as such because the top is missing.

Two *baking powder lids* were recovered. The lids both have “MAGIC BAKING POWDER PURE WHOLESOME” marked on them. Magic Baking Powder has been made and manufactured in Canada since 1897. The lids would complement either a taller can than was recovered or a cardboard container. The first can was recovered from Feature A (House #1) and is in good condition, with just a bit of rusting (Figure 23a). It measures 7.3 cm in diameter, has a 2.0 cm rim and the metal is 0.6 mm thick. The second *baking powder lid* was recovered from Feature C (House #2) (Figure 23b). It is heavily corroded. The edges have been folded down and the entire piece has been folded in half to just less than 90°. The diameter is 7.6 cm and the thickness of the bent piece is 4.5 mm.



Figure 23. Lids: (a-b) Baking Powder Lids; (c) Unidentified Slip-Lid; (d) Unidentified Metal Lid.

An *unidentified slip-lid* was recovered from Feature C (House #2), and measures 5.3 cm diameter by 0.9 cm height by 0.5 mm thick (Figure 23c). It has a chrome finish, and is circular in shape, with one centre hole that is 3.0 mm in diameter. There are five lines of two holes emanating from the centre that are 2.0 mm in diameter, to form a star shape where the product would have come through when the can was a shaker. The holes appear too large to be a salt shaker lid, nor is it likely a pepper shaker, since the lid does not screw on, but would rather have been placed on. As, the holes are too large for a salt shaker, alternate possibilities are talc powder or flea powder, which do not seem practical considering the location of Schaeffer Creek Campsite.

An *unidentified metal lid* was recovered from Feature C (House #2) (Figure 23d). It is circular in shape and has 11.9 cm diameter and 0.8 cm height. It is bent, so the circular shape is not even. There are holes of varying size and placement on the lid, with the largest hole in the centre measuring 6.0 mm in diameter. There are emanating lines from the centre hole that form six triangular shapes. Eight other holes are randomly placed, all looking machine-made except for two, which are puncture marks. There is also a semi-circular cut on the lid that is 1.8 cm long. On the back of the lid some writing can be partially made out. It reads:

PATENTED  
...9 1889  
...29 1901

This *unidentified metal lid* could come from some sort of device like a flour sifter.

Household equipment includes a *fork*, *spoon*, and a *white metal plate* (Figure 24). The fork was found in the adjacent unit to the spoon. The *fork* is flat-tanged style (Wade 1982: 6). The handle is bone or antler, with two pieces of bone that are a total of 1.2 cm thick (Figure 24b). It is rounded on the top and sides, the handle has a width of 1.8 cm at the top, and tapers towards the tine end to 1.4 cm. There are two 3.0 mm pins/rivets through the handle and the handle has a metal ferrule and a metal piece connecting the tine. The fork has three tines;



Figure 24. Household Equipment: (a) White Metal Plate; (b) Fork; (c) Spoon.

outside tines are 5.0 mm thick and the inside tine is 4.0 mm thick. The total length of the fork is 18.9 cm. The metal part of the fork is 9.5 cm long and 2.4 mm thick. No marks can be distinguished. Similar forks with wood handles are found in the Hudson's Bay Company Autumn and Winter Catalogue from 1910-1911 (1977: 178) and the 1902 Edition of the Sears Roebuck & Co catalogue (1969: 481). Bone-handled forks are found in the 1912 Woodward Catalogue (Watt 1977: 81). It is not apparent whether the images in the catalogues are of specific forks that the stores carry, or just representative of the category of knives and forks. Therefore, it can be concluded that this type of fork was common during the early twentieth century, as it is seen in all three catalogues available to the author.

The *spoon* was recovered from the Feature C (House #2), and is 13.9 cm in length (Figure 24c). Using the terminology of Wade (1982), the spoon is ovate in bowl shape, has a Fiddle Pattern upturned stem end, and ears above the bowl. It is stamped with "Nevada Mc GC Co" on the back. McGlashan, Clarke & Co. is a company that manufactured silverware in Niagara Falls, Ontario, and Muncie, Indiana (Woodhead 1991: 156). The company produced silver-plated goods from 1899 to 1910 (*ibid.*). The spoon matches the image of Alaska Silverware, Plain Tipped Dessert Fork in the 1897 Sears, Roebuck & Co. catalogue (Israel 1993: 438). The catalogue indicates that Sears started carrying this make two years previously, making the acquisition of this spoon after that date (unfortunately the 1902 catalogue also indicates that they have been selling the Alaska Silverware pattern for two years, bringing the statement in the 1897 catalogue into question). The Woodward catalogue for 1929 shows images of Nevada silver spoons (Watt 1977: 145) that also visually match, but do not fit with the chronology of production for McGlashan, Clarke & Co. until 1910. A similar spoon was identified from Coteau-du-Lac, Quebec, which is made of copper alloy, "with ears on the stem and a dognose on a Fiddle Pattern upturned stem end" (Wade 1982: 34), indicating it was a common spoon after the 1800s (when the Fort at Coteau-du-Lac was in use).

The *white metal plate* was surface collected, and has a 15.3 cm diameter (Figure 24a). It is made of enamelware. The bottom is corroded; the diameter of the corroded area is 6.5 cm. It is relatively shallow. Enamelware is found in the Woodward's catalogue (Watt 1977: 138). Three different grades of enamelware are listed; the plate appears to be the middle quality, what they call "White Enamel Ware", which has three coats of white enamel inside and outside.

### *Textiles*

A *leather fragment* that could be part of a belt, strap or a harness was found in Feature C (House #2). It measures 3.6 cm by 2.9 cm by 4.3 mm (Figure 19j). The small size could suggest that it was part of a strap or harness for dogs. It is broken off on two edges. Along one of the broken edges are four puncture holes, one of which is clear through, and the others still have material in them. The holes are not regular, a feature which could indicate mending. One side has striations across it, while the other side looks scaly, but the differences could be from different exposure to weathering. Because the piece is small, it is difficult to determine what it may be part of or what it might have been.

### *Miscellaneous*

A *shell button* was recovered from Feature C (House #2). It measures 2.2 cm in diameter and 3.0 mm in height (Figure 19k). The material is mother-of-pearl, it is shiny, opaque and white. The button is flat, one piece and has two eye holes that are 2.4 mm and 2.6 mm in diameter. One side has been cut down to the eye holes in the shape of two connected convex lines, in a fisheye shape. There is no rim. The button is complete and appears to be cut by a machine. Similar but slightly smaller buttons were recovered from Fort Victoria (Losey 1977: 151, 313, 314), so it would have been a common button in the early twentieth century.



## Chapter Six: Faunal Analysis

### Introduction

The original catalogue lists 275 bones recovered from Schaeffer Creek Campsite (SCC), but only 263 bones were in the collection when it was re-examined. This difference could be due to either loss of bones after excavation or disintegration of bone prior to examination by the author. No faunal remains were recovered from Feature B or Feature D (elevated cache). The majority of the bones (249, 95%) were found in Feature C (House #2), while only 14 (5%) were found in Feature A (House #1). Caribou and moose bones were identified from both features, but snowshoe hare remains were found only in Feature C (House #2).

### Methods

The faunal remains were recorded and collected by unit of excavation. The taxa identified include snowshoe hare (*Lepus americanus*), caribou (*Rangifer tarandus*) and moose (*Alces alces*). Bone identification to species was made when possible, using the zooarchaeological reference collection at the Department of Anthropology, University of Alberta. Mélanie Fafard conducted initial identification in July 1997; the collection was re-examined by the author in November 2009 and March 2010.

The condition of the bones was good, showing little evidence of post-depositional alteration. There were many fragmentary pieces that could not be identified to species, and were therefore labeled as either unidentified large mammal or unidentified mammal, based on relative size. Age estimation of the samples was deemed adult, as nothing in the sample indicated anything other than adult; no teeth were found to examine eruption or wear for age. Sexing of the specimens was not performed because of the small size of the collection. Also, no paleopathology was recognized on any of the bones.

## Quantitative Analysis

Quantitative analysis is shown below in Table 1, including the number of identified specimens (NISP) and the minimum number of individuals (MNI) for each taxon. The data shows the fragmentary nature of the assemblage, as the relative frequency of the taxa indicates that unidentified mammals comprise over half of the specimens. Caribou have the largest NISP (28) of those identified.

Table 1. Summary of the Faunal Assemblage by Taxa

<b>Feature Taxon</b>	<b>#1(A) NISP</b>	<b>#2(C) NISP</b>	<b>Total NISP</b>	<b>%NISP</b>	<b>#1(A) MNI</b>	<b>#2(C) MNI</b>	<b>Total MNI</b>	<b>%MNI</b>
Snowshoe hare		13	13	4.94		4	4	44.44
Caribou	3	25	28	10.65	1	3	4	44.44
Moose		5	5	1.90		1	1	11.11
<b><i>Subtotals</i></b>	<b>3</b>	<b>39</b>	<b>46</b>	<b>17.49</b>	<b>1</b>	<b>8</b>	<b>9</b>	<b>99.99</b>
Unidentified								
Large mammals	5	75	80	30.42				
Small mammals		1	1	0.38				
Mammals	6	130	136	51.71				
<b><i>Subtotals</i></b>	<b>11</b>	<b>206</b>	<b>217</b>	<b>82.51</b>				
<b><i>Totals</i></b>	<b>14</b>	<b>245</b>	<b>263</b>	<b>100.00</b>				

## Seasonality

The presence or absence of certain animal species in faunal assemblages provides some indication of the season of occupation of archaeological sites. No avian bones were recovered from Schaeffer Creek Campsite, even though ethnographic information indicates that birds were an important resource (Osgood 1936: 28). Leechman (1954: 10), for example, reports that grouse and ptarmigan were eaten in the winter, while ducks and geese were eaten in the spring and autumn. This absence of migratory waterfowl, in particular, could suggest an occupation sometime from October to April, as they are found in the Old Crow region from May to September (Irving 1960: 289; 314). Taphonomic processes could be an alternative explanation for the lack of bird bones, but almost 20% of the faunal

assemblage of *Dechyoo Njik* consisted of bird bones (Fafard 2001: 69), making it more likely that birds were not utilized as a resource at SCC.

As well, there were no fish bones, making occupation of Schaeffer Creek Campsite likely when the creek was frozen. Winter fishing is possible in large lakes in the Old Crow Flats (Steigenberger 1974: 11), but no lakes near Schaeffer Creek Campsite were identified as having overwintering fish (Birch 1975: 9). Schaeffer Creek is devoid of fish from October to May as a result of ice formation (Steigenberger 1974: 9), which freezes the creek to the bottom, leaving no deep water holes where fish can overwinter, all factors indicating that the site was likely occupied sometime between November and April. This absence of fish remains is in contrast to *Dechyoo Njik*, where fish bones comprised almost 30% of the faunal assemblage (Fafard 2001: 69). Of the nearly 2000 bones recovered from NbV<sub>k</sub>-1, a fishing camp also located in the Old Crow Flats, over half were obtained using floatation methods to maximize recovery (Morlan 1972b: 33). Despite the high number of fish bones recovered using this method, a significant number were still recovered by trowel. This observation may suggest that the absence of fish bones at SCC may likely be due to occupation during a season in which fish were unavailable, rather than due to taphonomic processes or excavation method. An alternative explanation for the absence of specific types of bones could be ritual disposal at a location other than the campsite.

The presence of caribou suggests that the site could have been occupied during one of the two annual migrations of caribou in the spring and fall. Jakimchuk et al. (1974: 21) report that all the Porcupine Caribou herd that they observed cross the Old Crow Flats in their spring migration. Appendicular elements were found at Schaeffer Creek Campsite (SCC), indicating that the animal was not processed at the site; limbs were transported to SCC from a kill site. Spring migration varies from mid-March to mid-May and the fall migration occurs near the end of August (Jakimchuk et al. 1974: 79). Small herd segments have been reported to winter in Old Crow Flats, as well (Jakimchuk et al. 1974: 16). Balikci (1963b: 6) also notes that people travel over large areas for small herds for parts of the winter, a practice that could include the area of Schaeffer

Creek Campsite. If SCC was a campsite for winter caribou hunting, the site would have been occupied anywhere from August, through winter, to mid-May at the latest. That being said, the occupants of SCC could also have been subsisting on stored meat, either dried or frozen.

The absence of muskrat (*Ondatra zibethicus*) bones is unexpected, due to the site's location in the Old Crow Flats, where muskrats can be found in abundance (e.g., Simpson et al. 1989: 20; Leechman 1954: 19), and are trapped in the tens of thousands each year during spring harvest (Simpson et al. 1989: 1; Balikci 1963b: 10). Muskrat populations vary year to year, with peak returns every seven or eight years (Balikci 1963b: 10), making it possible that occupation could have been in a year of reduced population. Another explanation could be that a midden exists containing their remains, but was not found.

#### Bone Alterations

Charring, chewing, cut marks and pitting were the alterations recorded on a number of specimens in the faunal remains (Table 2). One hundred six (40.30%) bones of the assemblage were altered, mostly by charring (35.36% of the total collection and 85.84% of the altered bones). Only two bones showed signs of chewing by a carnivore, an observation that could mean that there was a dog present, or that some other carnivore chewed them after the campsite was abandoned. Cut marks were located on one of the snowshoe hare bones, one of the caribou bones, and four of the unidentified bones. Four of the bones had been broken apart (opened), including a caribou long bone fragment and three moose phalanx, a feature that could be from marrow extraction.

Pitting was seen on one bone fragment. From comparison with images and descriptions of pitting in Bonnicksen (1979) and Morlan (1980), it was initially thought to be from digestion, but upon closer examination it is likely due to chemical alteration, possibly by acidic soils. Travel in a stream or movement in some kind of matrix could also cause pitting, but this explanation is unlikely given that Schaeffer Creek Campsite is not on the creek. It is peculiar that only

one of the bones in the assemblage shows this kind of alteration, since the depositional environment should have affected more than one of the bones.

Table 2. Summary of Bone Alterations

Taxon	Charred	%	Chewed	%	Cut	%	Opened	%	Pitted	%	Total
<b>Snowshoe Hare</b>					1	0.94					1
<b>Caribou</b>	2	1.89			1	0.94	1	0.94			4
<b>Moose</b>							3	2.83			3
<b>Unid.</b>	91	85.84	2	1.89	4	3.77			1	0.94	98
<b>Totals</b>	93	35.36	2	0.76	6	2.28	4	1.52	1	0.38	106

## Discussion

The MNI calculations for the three species identified make it difficult to draw any conclusions regarding the site, but from the small number of individuals it does not appear that this site was occupied for an extended period of time or that there were multiple occupations. NISP can be affected by multiple factors, including transportation, cooking practices, disposal methods, butchering techniques, and non-subsistence uses of the bones, but these processes are hard to separate and attribute at Schaeffer Creek Campsite. The large NISP for unidentified mammals does demonstrate the highly fragmentary nature of the assemblage. Fragmentation is also noted for *Dechyo Njik*, where Fafard (2001: 74) thinks that the absence of sedimentation could have resulted in the faunal remains being exposed to subsequent trampling and breakage, but varying lengths of occupation need to be taken into account when making this assumption for SCC. The burned bones (35.36%) could also be attributed to post-depositional action, as they are not associated with hearth features.

Various elements of snowshoe hare are part of the assemblage (Table 3), but only the foot bones of moose (Table 4), indicating that these portions of the animal were brought in from the kill site, rather than the whole animal. Although the number of caribou bones found at the campsite is too small for statistical

analysis, appendicular elements were prevalent at the site (Table 5), thus suggesting that the limbs were brought from a kill site away from the camp.

Table 3. Snowshoe Hare Element Summary

	Frequency	Side			Portion		
		Left	Right	Ind.	Complete	Fragment	Proximal
<b>Axial Skeleton</b>							
Mandible	6	2	4		1	5	
Maxilla	3	1	2			3	
<b>Subtotals</b>	9	3	6		1	8	
<b>Appendicular Skeleton</b>							
Innominate	1	1				1	
Tibia	1		1				1
Unidentified long bone	2			2		2	
<b>Subtotals</b>	4	1	1	2		3	1
<b>Totals</b>	13	4	7	2	2	10	1

Table 4. Moose Element Summary

	Frequency	Side			Portion		
		Left	Right	Ind.	Complete	Fragment	Proximal
<b>Appendicular Skeleton</b>							
Phalanx (1st)	1		1			1	
Phalanx (2nd)	1	1				1	
Phalanx (ind)	1		1				1
Pisiform	1	1			1		
Sesamoid	1			1	1		
<b>Totals</b>	5	2	2	1	2	2	1

The faunal collection of Schaeffer Creek Campsite (SCC) is fairly small, a situation which could be due to a number of factors. The examination of SCC was a small-scale excavation, and as a result, a midden could exist outside of the area examined. A short-term or temporary occupation would also result in a relatively small number of remains. Different practices of waste disposal could also account for the small amount of faunal remains. Waste may have been disposed of outside of the core area of occupation, as secondary refuse from fire pits being emptied, or waste could have been disposed of in a ritual manner. An example of the latter practice is:

...traditional practices of most Northern Athapaskan peoples require as a sign of respect that large mammal bones be placed on dry ground away from houses, work areas and trails. Those whose habitat is the water were placed in the water. (Clark 1995: 99)

Table 5. Caribou Element Summary

Element	Frequency	Side			Portion		
		Left	Right	Ind.	Complete	Fragment	Distal
<b>Axial Skeleton</b>							
Rib	2		2			2	
<i>Subtotals</i>	2		2			2	
<b>Appendicular Skeleton</b>							
Calcaneus	1	1			1		
Cuneiform	1	1			1		
Lateral maleolus	1		1		1		
Long bone	1			1		1	
Magnum	1		1		1		
Manus	3	2	1	1	3	1	
Metacarpal	2		1	1		2	
Metapodial	1			1		1	
Metatarsal	4			4		4	
Phalanx	1		1				1
Scaphoid	1	1			1		
Scapula	2		2			2	
Talus	1		1		1		
Tibia	2	1	1				2
Ulna	1	1				1	
Unciform	1	1				1	
<i>Subtotals</i>	24	8	9	8	9	13	3
<i>Totals</i>	26	8	11	8	9	15	3

## Conclusion

Given the proximity of Schaeffer Creek Campsite (SCC) and *Dechyoo Njik*, it is apparent that the sites differ significantly. Birds and fish comprise almost 50% of the assemblage at *Dechyoo Njik*, while evidence of fish and bird is absent in the SCC assemblage. This difference could indicate that these sites were occupied at different times of the year. Additionally, muskrat was abundant at *Dechyoo Njik* and caribou was close to absent (Fafard 2001: 73), a distribution that is the opposite of the SCC faunal assemblage.

The faunal data presented suggest that Schaeffer Creek Campsite was likely occupied during cold weather. If the campsite was occupied during the

spring caribou migration, the dates can be compressed to between mid-March and mid-May. Taking into account the muskrat season (March 1 to June 15), the time of occupation would be on the earlier side of this date range, since it is likely that the campsite was occupied before prime muskrating season. The site could hypothetically then be a camp that was occupied prior to a muskrat camp.



## Chapter Seven: Discussion and Conclusion

### Introduction

The major objective of this thesis was to confirm Schaeffer Creek Campsite (SCC) as a cold weather campsite. The primary indication that SCC is a cold weather campsite is its location at a distance from Schaeffer Creek. Additional considerations will be presented here, including chronology, seasonality, and function of Schaeffer Creek Campsite to confirm the assessment of SCC as a short-term cold weather occupation. Further discussion of the practice of recycling as well as comparisons with other sites in the region, and finally cold weather adaptations, are included to complete the analysis of the SCC.

### Chronology

The date of use of the Schaeffer Creek Campsite can be determined using the *terminus post quem* (the earliest date an item was manufactured), of multiple artifacts, including the beads, nails, food cans, rifle cartridge and utensils. Using the *terminus post quem* approach is problematic, as items can be reused and recycled into other forms, which could potentially create an early date of occupation for the site; there is evidence of these processes at SCC, so the date of occupation could be much later than the *terminus post quem* of individual items. Given that multiple items are used to ascertain the chronology of SCC, this bias should not pertain to this examination.

The earliest possible date for the site comes from the presence of the white-line Cornaline d'Aleppo beads, which were introduced in the 1880s. The presence of a single square cut nail in one of the planks indicates a date for Schaeffer Creek Campsite after the 1800s, but the predominance of wire nails recovered would provide a later date, as wire nails dominated the market in North America by 1895 (Fontana and Greenleaf 1962: 48). Square cut nails were still produced for special purposes after 1890 (*ibid.*: 55), but it is not likely that they

were being brought in to Northern Canada when wire nails were available. Clark reports that the change from cut to wire nails occurred in the Yukon between 1886 and 1896 (1995: 166), lending support to an early twentieth century occupation for Schaeffer Creek Campsite.

The presence of Magic Baking Soda lids corroborates a twentieth century date for the Schaeffer Creek Campsite, as this company began production in Canada in 1897. The cartridge recovered from SCC was manufactured by the Union Metallic Cartridge Company, which merged with the Remington Arms Company in 1912, indicating an early twentieth century date for SCC.

The fork recovered at Schaeffer Creek Campsite matches forks found in catalogues of the early twentieth century, while the spoon manufacturer, McGlashan, Clarke & Co., began producing in 1899, again correlating an early twentieth century date. There would have been some lag time between manufacture and possession of the spoon, which would mean a later date for the site. When shown a picture of the fork and spoon, elder Lydia Thomas, from Old Crow, thought they were from Dan Cadzow's store at Rampart House, as the people only had knives from Hudson's Bay Company trading posts prior to that time (Interview July 31, Page 5). Cadzow's store operated from 1904 to 1929 (Smith and VGFN 2009: liv), further supporting an early twentieth century date for Schaeffer Creek Campsite.

The maple syrup can was also identified in the Sears 1897 catalogue (Israel 1993). The trap recovered is similar to one in the Hudson's Bay 1910 catalogue (HSBC 1977), which again corroborates a date of early twentieth century for Schaeffer Creek Campsite. The button recovered was also common in the early twentieth century.

The presence of double-seamed cans at Schaeffer Creek Campsite indicates a date after they began to be manufactured, in 1902 (Fontana and Greenleaf 1962: 73). Of all the artifacts, the presence of open top style cans with a double seam provides the latest date for the site, as they were manufactured after 1918 (*ibid.*: 72). Therefore, according to the previous information, the approximate date for the Schaeffer Creek Campsite is the 1920s.

## Occupation and Function(s)

To gain an understanding of the function and usage of Schaeffer Creek Campsite (SCC), four interconnected points need to be considered. First, it is important to determine whether SCC was a temporary camp, or whether it was occupied over an extended period of time. The second point to consider is whether the site was occupied only once, or if it was returned to multiple times. Thirdly, the type and purpose of the camp needs to be determined. The fourth and final consideration is identification of the people who occupied SCC.

A temporary occupation of Schaeffer Creek Campsite is likely. First, the collection of artifacts is small, suggesting a short-term occupation. Second, the cache does not rule against a short-term occupation, as these structures are easily and quickly built. Third, judging from the small number of individuals (MNI=4) of caribou, it would appear that this campsite was not occupied for an extended period of time, or that there were multiple occupations. Fourth, none of the elders interviewed remember the campsite, a response that could suggest that it was a temporary, or short occupation site. Finally, there was no indication that the area was cleared, no stumps were seen, an observation which is indicative of a short-term, impermanent campsite.

There is no definitive evidence, however, of whether Schaeffer Creek Campsite was used once or multiple times. Similar nails and baking powder lids at two of the features make it likely that they were occupied either at the same time or perhaps within a short period of each other (Fafard 1997a: 44). The small artifact collection makes it unlikely that SCC was occupied multiple times, as one would expect to find more waste with multiple occupations.

The location of Schaeffer Creek Campsite (SCC) in the Old Crow Flats would lead to the initial assumption that the site was a muskratting camp, but the material remains do not support this conclusion. A large number of stretchers are required to process the muskrat skins, therefore it is not likely that SCC is a spring muskratting camp. The rarity of muskrat stretchers (only two were found) is not due to preservation issues, as many wood artifacts were recovered, so the site was

either occupied prior to muskratting or after the season was finished. The subsequent discussion of the seasonality of SCC will support this interpretation of the function of the site.

The final consideration regarding occupation of Schaeffer Creek Campsite (SCC) is identification of the people who used the campsite. SCC is on the route from Rampart House to the Old Crow Flats, a factor that could suggest a Van Tat Gwich'in use of the site, as they frequently used this route. Support for SCC being a Van Tat Gwich'in site comes from information given by informants. Charlie Thomas did not think that Inuit would have been in the area of Schaeffer Creek, even though he does mention encountering other groups in the Old Crow Flats in other oral history interviews. Multiple elders mentioned Schaeffer Creek and the area around it, confirming that the area is known and used by the Van Tat Gwich'in. Contrary evidence arises from Old Crow resident Charlie Peter Charlie Sr. (a *Dagoo Gwich'in*). When SCC was discovered, Charlie Peter Charlie Sr. commented that the site was from someone from the west. Reports in ethnographies, interviews and archival data indicate that various groups used the Old Crow Flats, therefore it cannot be assumed that because SCC is in Van Tat Gwich'in traditional territory, they occupied it. The artifacts do not reveal specifically who occupied SCC, but the presence of Magic Baking Powder cans is evidence that the inhabitants of SCC were trading at Rampart House in Canada. Therefore, with the information available, it cannot be determined definitively which group used SCC, but the author will follow what the elders have said.

### Seasonality

The primary evidence used to determine seasonality of Schaeffer Creek Campsite (SCC) is its location. SCC is situated at a distance from the nearest water source, Schaeffer Creek. When snow is available, proximity to a water source is not essential when choosing a camp location. SCC is also suitable for cold weather because it has an ample supply of firewood, which is necessary to heat stoves for canvas tents. The presence of stovepipe elements could suggest that the stovepipe

flanges were abandoned after being used at the campsite during cold weather. The remains of the toboggan also suggest a cold weather occupation. The toboggan could have been cached for future use or left because it was broken and the pieces could not be reused, or the snow was melting and it could not be utilized anymore. The muskrat stretchers could indicate an occupation in the late spring, when they would have been made in preparation for spring ratting, or left after the ratting season.

When the location of Schaeffer Creek Campsite (SCC) on a map was shown to informants in Old Crow, they indicated that the site was on the route from Rampart House to the Old Crow Flats; this route would have been travelled to move to or from spring ratting camps. This comment corroborates an occupation of SCC in the late winter or early spring. Morlan reports (1973: 87) that people from Old Crow list the area of Surprise Creek and Potato Creek, in the southwestern Old Crow Flats, as places where groups of people lived in the cold months. This observation lends support to SCC being a cold weather camp, as it is located in close proximity to these locations.

The elders interviewed remember the area of Schaeffer Lake and Schaeffer Creek as a winter trapping area, as well as an area for muskratting and fishing. The area is known as a gathering area for winter and as an important gathering place after occupation in the Old Crow Flats. According to the archival data, the main winter camp of the Van Tat Gwich'in was at *Diniizhòdo*, which is near Schaeffer Creek Campsite (see Figure 1). The Old Crow Flats were used to some extent year round, but it is important to note that the area was definitely used during cold weather.

Stephen Frost Sr. describes multiple campsite locations as ideal for the warmer months, including near a lake or river, near a good fishing spot, or at an open area where the wind would deter mosquitoes. These criteria are in contrast to cold weather sites, when the ideal location would be between lakes, near a deep creek and around trees that are good for shelter and fuel (Interview August 3, p. 2). Using these guidelines, the location of Schaeffer Creek in a wooded clearing surrounded by black spruce and willow that would protect against the elements

during cold conditions, but harbour mosquitoes in the summer, likely implies a cold weather site.

The placement of Schaeffer Creek Campsite (SCC) at a distance from Schaeffer Creek can also be used to ascertain seasonality of the site. It is unlikely that SCC is a fish camp, as fish camps are located on or near lakes, streams and rivers. This observation is demonstrated when comparing SCC to the fishing site *Dechyoo Njik*, which is located on a point bar of Schaeffer Creek (Fafard 2001: 17). The lack of fish bones recovered from SCC confirms that it was not a fishing camp, an interpretation that suggests the site was not occupied when fish were available. Assuming that fish would have been procured when available, an occupation sometime between October and May seems probable, since Schaeffer Creek is completely frozen during these months.

The faunal data provide further support of a cold weather occupation of Schaeffer Creek Campsite. The absence of migratory waterfowl, in particular, could indicate an occupation from October to April, as they are found in Old Crow only from May to September. If the campsite was occupied during the spring caribou migration, the dates can be compressed to between mid-March and mid-May. The lack of muskrat bones suggests an occupation preceding or following muskrat season.

## Recycling

Clark (1995: 94) notes that recycling, “was of considerable importance in the North”. Many of the metal artifacts recovered from Schaeffer Creek Campsite (SCC) show signs of being worked in the process of recycling. The metal is either cut with sheers, pulled apart, folded, cut with a knife, punched using a nail, or punctured with a knife; pounding of the edges has also occurred. The process of using axes as cold chisels to cut the metal does not appear to be present in the metal artifacts examined. Pieces of sheet metal were used to make artifacts including the stovepipe flanges, stovepipes and containers. A variety of different

types of metal were used for recycling at SCC. It appears that anything that could be obtained was used, an observation which is evidenced by the various gauges of sheet metal recovered.

The process of recycling is also evident in sites around Schaeffer Creek Campsite (SCC), including NbVk-1 (Morlan 1972b: 16-17), Cadzow Lake (Morlan 1972a: 14,19), *Dechyoo Njik* (Fafard 2001: 64) and Rat Indian Creek (Le Blanc 1984: 395-6). Fragments of rusted sheet metal were found at NbVk-1 and were fashioned to make a stove and stove pipe frame with 13 holes (Morlan 1972b: 24), a feature that is similar to the stovepipe flanges recovered from SCC. The Cadzow Lake site contained a concentration of one hundred small sheet metal fragments, but the only other sheet metal found was possibly for a wood stove (Morlan 1972a: 14). *Dechyoo Njik* had several metal fragments that indicate that the recycling of five-gallon gas cans was occurring there (Fafard 2001: 64). Rat Indian Creek records ten pieces of miscellaneous metal. Of the eight pieces of sheet metal, one appears to be the remnant of a tobacco can. The pieces of sheet metal show signs of cutting, crimping and folding (Le Blanc 1984: 395-396).

Historic sites farther afield also have evidence of metal recycling, including Inuit sites in Alaska (VanStone 1968; 1972: 50; VanStone and Townsend 1970: 143) and Fort Reliance, Yukon (Clark 1995). At Tikchik Village, Alaska, 170 cut can fragments were found, which were likely by-products of artifact manufacture (VanStone 1968: 288). Fort Reliance has pieces of metal with similar measurements to those from Schaeffer Creek Campsite (SCC), which are labelled as, “construction strips and plates or patches—probably cut from recycled sheet metal,” and “modified-stock metal sheet” (Clark 1995: 171). The description and measurements of the *modified – stock metal sheet* match what has been labelled sheet metal in the Schaeffer Creek Campsite collection. This observation would lead to the conclusion that the same raw material was being recycled into useable items at Fort Reliance and SCC.

In summation, the process of recycling is an important aspect of the Schaeffer Creek Campsite. Recycling of metal was a dominant activity that would have provided material items that were needed and useful to the inhabitants.

Recycling was happening at contemporaneous sites, and the practice demands further consideration that is beyond the scope of this report.

### Comparison with Other Sites

The Schaeffer Creek Campsite (SCC) collection has similarities with other historic sites mentioned previously, including the historic component at *Dechyoo Njik* (Fafard 2001), Cadzow Lake Site (Morlan 1972a) and NbVk-1 (Morlan 1972b). SCC has similar artifacts to the other historic sites farther afield, including Fort Reliance (Clark 1995) and a number of Alaskan sites. When comparing other archaeological sites to Cadzow Lake, Morlan points out that, “there are many specific similarities with sites as far away as southwestern Alaska where identical cartridges, nails, beads, buckles, and buttons have been found in historic Eskimo and Indian sites” (1972a: 48-49). This observation holds true for the Athapaskan site of Kijik (VanStone and Townsend 1970), as well as the Inuit sites of Crow Village (Oswalt and VanStone 1967), Paugvik (Dumond and VanStone 1995), Akulivikchuk (VanStone 1970) and Tikchik Village (VanStone 1968), which are all historic sites contemporaneous with SCC or earlier. All of these sites have similar cans and pieces of metal to Schaeffer Creek Campsite. At all of the Alaskan sites mentioned beads were found that are similar to SCC, but all of the collections have a greater number of beads than SCC. Other trade goods are similar, including square-cut and wire nails, though the Inuit sites all have more locally manufactured goods including ground stone, bone and antler artifacts.

Fort Reliance was an Alaska Commercial Company trading post that was occupied from 1874 to 1886 (Clark 1995). It was a traditional Han Indian centre during the nineteenth century. It has similar artifacts to Schaeffer Creek Campsite (SCC), including a mother-of-pearl button, a tobacco seal, a .22 cartridge, cans, wire nails and beads, but it also has bone tools and stone tools. Sheet metal and recycled metal constitute an important part of the collection, which is similar to SCC.



Cadzow Lake and NbVk-1 are similar to Schaeffer Creek Campsite in that they are located close to lakes and streams, and have little material remains (Irving and Cinq-Mars 1974: 76). Cadzow Lake featured three serial occupations: 1850, 1880 and 1933 (Morlan 1972a). Layer one was identified as a campsite of Joe Kay from 1933, when his people went up river rather than to the Old Crow Flats because of the muskrat population crash (ibid.: 68). Layer two dates from 1870-1890 and layer three represents the earliest historic campsite in the area (ibid.: 69), occupied soon after Murray passed by in 1847 (ibid.: 72). Many similar artifacts were found at Cadzow Lake and Schaeffer Creek Campsite, including a leather harness or belt fragment, fragments of folded sheet metal, and examples of metal recycling (ibid.: 14), traps (ibid.: 17-18), tobacco stamps (ibid.: 19), a tiny fragment of an enamelware dish (ibid.: 20), mother-of-pearl buttons (ibid.: 22), beads (ibid.: 22-23) and Cornaline d'Aleppo beads (ibid.: 29, 33).

NbVk-1 (Morlan 1972b) is an historic fishing camp located in the northeastern part of the Old Crow Flats, on the right bank of a small stream near the head of a tributary of Black Fox Creek (Morlan 1973: 456). The site consists of the remains of two elevated caches (Morlan 1972b: 6). Similar artifacts to Schaeffer Creek Campsite include Blazo cans (ibid.: 8), a stretcher for muskrat pelts, a piece of leather (ibid.: 16); cans (ibid.: 20), wire and wire nails (ibid.: 23) and utensils (ibid.: 28).

*Dechyoo Njik* (Fafard 2001) is the closest site in proximity to Schaeffer Creek Campsite. Of the Euro-Canadian artifacts collected at *Dechyoo Njik*, there are more beads at *Dechyoo Njik*; ten metal artifacts, a clay pipe fragment and gun flint make up the remaining Euro-Canadian artifacts (ibid.: 63). As for the faunal collection, remains of birds and fish comprise almost 50% of the assemblage at *Dechyoo Njik*, while evidence of fish and bird is absent in the Schaeffer Creek Campsite assemblage. This difference could indicate that these sites were occupied at different times of the year. Additionally, remains of muskrat were abundant at *Dechyoo Njik*, and caribou was close to absent (ibid.: 73), which is the opposite of the SCC faunal assemblage. These differences in artifact and

faunal collections can be attributed to occupations in summer at *Dechyoo Njik* and during cold weather at Schaeffer Creek Campsite.

### Cold Weather Adaptations and Schaeffer Creek Campsite

Large-scale fall and spring communal caribou hunting camps are well known along the middle reaches of the Porcupine River (Morlan 1973; Le Blanc 1984). Late nineteenth and very early twentieth century meat camps and their associated caribou fences are also well known for the foothill zones surrounding Old Crow Flats (e.g. McFee 1981; Greer and Le Blanc 1992; Le Blanc, in progress). As well, Fafard and Le Blanc (1999; Fafard 2001) have examined the warm season fishing camp in the Old Crow Flats, *Dechyoo Njik*. Therefore the current archaeological literature for the region does not contain abundant information to add to discussions concerning cold weather.

The material remains of Schaeffer Creek Campsite provide support to the idea that people living in the area had the material culture to optimize life during cold conditions. They had the technology to live in cold conditions, including canvas tents with stovepipes, snowshoes, caches, sleds and dog teams with toboggans. In addition, there would have been other items used during cold weather that are not seen in the material remains found in excavations. People had additional tools that would have either been carried in and out of the site without being left to be discovered by archaeologists as well as artifacts of organic material, like *babiche* (rawhide) used for snares and other purposes.

Cold weather can no longer be considered a barrier to life in the subarctic. With this fact in mind, a look at cold weather technology and therefore behaviour is important to understand past lifeways in the subarctic. Adaptations to the cold are behavioural and technological, including clothing, diet, shelter, mobility and caching food. The use of caribou fences and other technologies using material culture, including modes of transportation like toboggans and dog teams, lead to an understanding of the richness of life during cold weather. People had a diverse material culture as well as oral traditions and conventional wisdom to aid during

times of scarce resources that are the result of cold conditions. The technological adaptations and behaviour that are rooted in oral tradition form a basis for survival during this time. Being constantly adaptive with the skills passed down from older generations allows for a complex and fulfilling life in cold weather. As people were constantly adaptive, site locations may be adaptable as well. If people were changing their behaviour, so was choice of where to live. This observation has repercussions for CRM studies in the subarctic boreal forest, as awareness of this pattern would change where archaeologists are looking for sites or where they assume sites could be.

Winter survival had people staying together during hard winters, when they would share resources or disperse to find resources. There were multiple adaptive strategies for survival. Social norms and arrangements also helped people when resources were scarce during cold weather. Attitude is an important part of cold weather adaptations. Increased mobility, aided by technology and snow conditions, contributes to winter adaptations. People moved all the time, stayed at the caribou fences, settled in one place, congregated in winter villages, or stayed at trading settlements. The ease of transportation and lack of mosquitos made cold weather preferable to summer.

Another point to consider when discussing cold weather adaptations is the definition of winter. Spring in the subarctic still has winter conditions, including cold temperatures and snow cover. This fact is important to note when labelling the season of occupation of a site, and also how that label will impact archaeological analysis and comprehension. If the conditions of winter apply to a longer period of time, then the thinking of researchers should be adjusted and expanded to label a site as a cold weather occupation, rather than fall or winter or spring. What would traditionally be called a spring occupation should actually be labeled cold weather because people were still dealing with winter conditions into March and April. Cold weather conditions from freeze-up are the norm for people living in this region.

## Conclusion

The objective of the study was to confirm Schaeffer Creek Campsite (SCC) as a cold weather occupation site in the Old Crow Flats and to increase knowledge of cold weather adaptations in the subarctic. This research was done through archaeological investigation of SCC, combined with oral history interviews, literature review, and ethnographic review. SCC is a short-term cold weather campsite, dating to the 1920s. Only a few archaeological sites excavated in the northern Yukon have been recognized as cold weather sites. This observation leads to the conclusion that researchers are not looking for or recognizing cold weather occupations, which represent a significant amount of time and occupation of people in the subarctic.

Even though it is a small assemblage, the importance of the analysis and interpretation of the Schaeffer Creek Campsite is to allow discourse about cold weather adaptations. The culmination of the data presented in this thesis regarding cold weather reinforces the recommendation that more research needs to be undertaken to understand cold weather behaviour and technological adaptations. The hope of the author is that this research will dispel the idea that cold weather inhibited life and habitation of areas of the north. The assumption that people were not active or functioning during cold weather needs to be disregarded so that a greater understanding of land use and lifeways in the past can be understood.

## References Cited

- Acheson, Ann Welsh  
1981 Old Crow, Yukon Territory. In, *Handbook of North American Indians Volume 6: Subarctic*, edited by June Helm, pp. 694-703. Washington, Smithsonian Institution.
- Balikci, Asen  
1963a Family Organization of the Vunta Kutchin. *Arctic Anthropology* 1(2): 62-69.  
  
1963b *Vunta Kutchin Social Change: A Study of Old Crow, Yukon Territory*. Ottawa, Northern Co-ordination and Research Centre, Department of Northern Affairs and National Resources.
- Banfield, A. W. F., and R.D. Jakimchuk  
1980 *Analyses of the Characteristics and Behavior of Barren Ground Caribou in Canada*. St. Catherines, Ont., Rangifer Associates Environmental Consultants; Sidney, B.C.: R.D. Jakimchuk Management Associates Ltd.
- Beairsto, C.  
1997 *MAKING CAMP: Rampart House on the Porcupine River Preliminary Report*. Whitehorse, Heritage Branch, Department of Tourism, Government of Yukon.
- Bente, Peter J. and David G. Roseneau  
1978 *An Aerial Photo-estimate of the 1977 Porcupine Caribou Herd*. Fairbanks, Renewable Resources Consulting Services Ltd.
- Birch, G. J.  
1975 Additional Aerial Survey Information of Some of the Rivers in the Northern Yukon April, 1973. *Northern Yukon Fisheries Studies: 1971-1974. Volume One*. L. W. Steigenberger, M.S. Elson, R.T. DeLury. Vancouver, Environmental-Social Committee, Northern Pipelines, Task Force on Northern Oil Development.
- Bonnichsen, Robson  
1979 *Pleistocene Bone Technology in the Beringian Refugium*. Mercury Series. Paper No. 89. Ottawa, National Museums of Canada. Archaeological Survey of Canada.
- Campbell, Robert  
1885 *The Discovery and Exploration of the Youcan (Pelly) River*. Winnipeg, Manitoba, Free Press Print.

Cinq-Mars, Jacques

- 1979 Bluefish Cave 1: A Late Pleistocene Eastern Beringian Cave Deposit in the Northern Yukon. *Canadian Journal of Archaeology* 3: 1-32.

Cinq-Mars, Jacques and Richard E. Morlan

- 1999 Bluefish Caves and Old Crow Basin: New Rapport. In, *Ice Age Peoples of North America: Environments, Origins, and Adaptations of the First Americans*, edited by Robson Bonnichsen and Karen L. Turnmire, pp. 200-212. Corvallis, OR, Oregon State University Press for the Center for the Study of the First Americans.

Clark, Donald W.

- 1995 *Fort Reliance, Yukon: an Archaeological Assessment*. Mercury Series. Archaeological Survey of Canada. Paper 150. Hull, Quebec, Canadian Museum of Civilization.

Coates, Ken

- 1979 *The Northern Yukon: A History*. Manuscript Report 403. Ottawa, National Historic Parks and Sites Branch, Parks Canada.

Dall, William Healey

- 1870 *Alaska and its Resources*. Boston, Lee and Shepard.

Dumond, Don E., and James W. VanStone

- 1995 *Paugvik: a Nineteenth-century Native Village on Bristol Bay, Alaska*. Chicago, Field Museum of Natural History.

Fafard, Mélanie

- 1997a Fieldnotes.

- 1997b Report Notes.

- 1997c *Traditional Landuse Patterns on the Southwestern Crow Flats, Yukon Territory: Oral History Interviews with Elders from Old Crow, Yukon Territory*. Edmonton, University of Alberta.

- 1999 *Dechyoo Njik (MIVm-4) and the Traditional Landuse Patterns in the Southwestern Portion of the Old Crow Flats, Yukon Territory*. Master of Arts Thesis, Department of Anthropology, University of Alberta, Edmonton.

- 2001 *Dechyoo Njik (MIVm-4) and the Traditional Landuse Patterns in the Southwestern Portion of the Old Crow Flats, Yukon Territory*. Whitehorse, Yukon Tourism, Heritage Branch.

- Fafard, Mélanie and Raymond J. Le Blanc  
1999 Dechyoo Njik (MIVm-4) and Traditional Land Use Patterns on the Old Crow Flats, Yukon Territory. *Canadian Journal of Archaeology* 23(1): 29-50.
- Fontana, Bernard L. and J. Cameron Greenleaf  
1962 Johnny Ward's Ranch: A Study in Historic Archaeology. *The Kiva* 28(1 & 2): 1-115.
- Gotthardt, Ruth Magrit  
1989 *Archaeological Investigations at New Rampart House in Northern Yukon*. Whitehorse, Report on file, Heritage Branch, Government of Yukon.
- Graburn, Nelson, and B. Stephen Strong  
1973 *Circumpolar Peoples: An Anthropological Perspective*. Pacific Palisades, CA, Goodyear Publishing Company.
- Greer, Sheila C. and Raymond J. Le Blanc  
1992 *Background Heritage Studies – Proposed Vuntut National Park*. Yellowknife, Northern Parks Establishment Office, Canadian Parks Service.
- Gubser, Nicholas J.  
1965 *The Nunamiut Eskimos, Hunters of Caribou*. New Haven, Yale University Press.
- Hardisty, William L.  
1867 The Loucheux Indians. *Notes on the Tinneh or Chepewyan Indians of British and Russian America/Communicated by George Gibbs*.
- Hearne, Samuel  
1795 *A Journey from Prince Wales's Fort in Hudson's Bay, to the Northern Ocean. Undertaken by Order of the Hudson's Bay Company for the Discovery of Copper Mines, A North West Passage, &c. in the Years 1769, 1770, 1771 & 1772*. London, Eighteenth Century Collections Online. Gale Group.
- Hemming, James E.  
1971 *The Distribution Movement Patterns of Caribou in Alaska*. Juneau, AK, State Department of Fish and Game, Division of Game.
- Hoffecker, John F. and Scott A. Elias  
2007 *Human Ecology of Beringia*. New York, Columbia University Press.

Honigmann, John J.

1946 *Ethnography and Acculturation of the Fort Nelson Slave*. Yale University Publications in Anthropology Number 33. New Haven, Yale University Press.

1954 *The Kaska Indians: An Ethnographic Reconstruction*. Yale University Publications in Anthropology No. 51. New Haven, Yale University Press.

Hudson's Bay Company

1977 *The Autumn and Winter Catalogue, 1910-1911 of the Hudson's Bay Company*. Winnipeg, Watson and Dwyer.

Hughes, Owen Lloyd

1972 *Surficial Geology of Northern Yukon Territory and Northwestern District of MacKenzie, Northwest Territories*. Ottawa, Department of Energy, Mines and Resources.

Irving, Laurence

1960 *Birds of Anaktuvuk Pass, Kobuk, and Old Crow*. Washington, Smithsonian Institution.

Irving, William N. and Jacques Cinq-Mars

1974 A Tentative Archaeological Sequence for Old Crow Flats, Yukon Territory. *Arctic Anthropology* 11: 65-81.

Israel, Fred L. (editor)

1993 *1897 Sears Roebuck Catalogue*. New York, Chelsea House Publishers.

Jakimchuk, R. D. (editor)

1974 *The Porcupine Caribou Herd: Canada*. Calgary, Canadian Arctic Gas Study Ltd.

Jakimchuk, R. D., E.A. DeBock, H.J. Russell, and G.P. Semenchuk

1974 A Study of the Porcupine Caribou Herd, 1971. *The Porcupine Caribou Herd: Canada*. R. D. Jakimchuk. Calgary, Canadian Arctic Gas Study Ltd.

Jakimchuk, R. D.

1980 Overview of Five Major Herds of Barren Ground Caribou in Canada. In *Analyses of the Characteristics and Behavior of Barren Ground Caribou in Canada*, edited by A. W. F. Banfield and R. D. Jakimchuk. St. Catherines, Ont., Rangifer Associates Environmental.



- Janes, Robert R.  
1976 *Continuity and Change in Native Settlement and Subsistence, the Mackenzie Basin, Northwest Territories, 1778-1976: Report of the 1975 Willow Lake Project.*
- Jenness, Diamond  
1932 *The Indians of Canada.* Toronto, University of Toronto Press.
- Jones, Strachan  
1867 *The Kutchin Tribes. Annual Reports of the Smithsonian Institution for 1866:* 320-327. Washington, D.C.
- Karklins, Karlis  
1982 *Glass Beads.* Ottawa, National Historic Parks and Sites Branch, Parks Canada, Environment Canada.
- Kelsall, John P., and David R. Klein  
1979 *The State of Knowledge of the Porcupine Caribou Herd.*
- Kirkby, William West  
1864 *A Journey to the Youcan, Russian America.* Washington, D.C, Smithsonian Institution.
- Le Blanc, Raymond J.  
1984 *The Rat Indian Creek Site and the Late Prehistoric Period in the Interior Northern Yukon.* Mercury Series, Archaeological Survey of Canada Paper No. 120. Ottawa, National Museum of Man.  
  
1986 *Report of Activities NOGAP 1986: Northern Yukon to Cape Bathurst Peninsula.* Ottawa, Archaeological Survey of Canada, Canadian Museum of Civilization.  
  
1997 *The 1997 Archaeological Investigations at New Rampart House, Northern Yukon.* Final Report Submitted to Yukon Heritage Branch in Compliance with Yukon Government Contract Number: GN9713 3006. Edmonton, University of Alberta.
- Leechman, Douglas  
1948 *Old Crow's Village.* *Canadian Geographical Journal* 37(1): 2-16.  
  
1950 *Loucheux Tales.* *Journal of American Folklore* 63(248): 158-162.  
  
1951 *The Old Crow Alter Cloth.* *Canadian Geographical Journal* 43(5): 204-205.  
  
1954 *Vanta Kutchin.* Ottawa, Minister of Northern Affairs and National Resources.

Losey, Timothy C.

- 1977 *Archaeological Investigations: Fort Victoria, 1974*. Historic Sites Service Occasional Paper No. 2. Edmonton, Alberta Culture, Historical Resources Division.

Mackenzie, Alexander

- 1801 *Voyages from Montreal on the River St. Laurence, Through the Continent of North America, to the Frozen and Pacific Oceans: In the Years 1789 and 1793*. London, T. Cadell and W. Davies.

Marano, Louis

- 1983 Boreal Forest Hazards and Adaptations: The Present. *Boreal Forest Adaptations: the Northern Algonkians*, edited by A. Theodore Steegmann, pp. 269-288. New York, Plenum Press.

McClellan, Catharine

- 1964 Culture Contacts in the Early Historic Period in Northwestern North America. *Arctic Anthropology* 2(2): 3-15.
- 1981 History of Research in the Subarctic Cordillera. *Volume 6: Subarctic, Handbook of North American Indians*, edited by June Helm. Washington, Smithsonian Institution.

McFee, R. D.

- 1981 Caribou Fence Facilities of the Historic Yukon Kutchin. *Proceedings of the Eleventh Annual Chacmool Conference*, edited by K. Road, M. Wilson and K.J. Hardy, pp. 159-170. Calgary, University of Calgary Archaeological Association.

McKenna, Robert A

- 1935 Anent the Kutchin Tribes. *American Anthropologist* 37(2): 369.
- 1959 *The Upper Tanana Indians*. Yale University Publications in Anthropology 55. New Haven, Department of Anthropology, Yale University.
- 1965 *The Chandalar Kutchin*. Technical Paper No. 17. Montreal, Arctic Institute of North America.

Morlan, Richard E.

- 1972a *The Cadzow Lake Site (MjVi-1): A Multi-Component Historic Kutchin Camp*. Mercury Series. Archaeological Survey of Canada Paper No. 3. Ottawa, Archaeological Survey of Canada, National Museum of Man, National Museum of Canada.

- 1972b *NbVk-1: An Historic Fishing Camp in Old Crow Flats, Northern Yukon Territory*. Mercury Series. Archaeological Survey of Canada Paper No. 5. Ottawa, National Museum of Man, National Museums of Canada.
- 1973 *The Later Prehistory of the Middle Porcupine Drainage, Northern Yukon Territory*. Mercury Series. Archaeological Survey of Canada Paper No. 11. Ottawa, National Museum of Man.
- 1980 *Taphonomy and Archaeology in the Upper Pleistocene of the Northern Yukon Territory: A Glimpse at the Peopling of the New World*. Mercury Series. Paper No. 94. Ottawa, National Museums of Canada.
- Morlan, R.E., D.E. Nelson, T.A. Brown, J.S. Vogel and J.R. Southron  
 1990 Accelerator Mass Spectrometry Dates on Bones from Old Crow Basin, Northern Yukon Territory. *Canadian Journal of Archaeology* 14: 75-92.
- Murray, Alexander Hunter  
 1910 *Journal of the Yukon, 1847-48*, editor Lawrence J. Burpee. Ottawa, Government Print Bureau.
- Orchard, William C.  
 1929 *Beads and Beadwork of the American Indians: a Study Based on Specimens in the Museum of the American Indian, Heye Foundation*. New York, The Museum.
- Osgood, Cornelius  
 1934 Kutchin Tribal Distribution. *American Anthropologist* 36(2): 168-179.
- 1936 *Contributions to the Ethnography of the Kutchin*. New Haven, Yale University Press.
- 1937 *The Ethnography of the Tanaina*. Yale University Publications in Anthropology No. 16. New Haven, Yale University Press.
- 1953 *Winter*. New York, W.W. Norton & Company, Inc.
- 1971 *The Han Indians: A Compilation of Ethnographic and Historical Data on the Alaska-Yukon Boundary Area*. New Haven, Yale University, Department of Anthropology.

- Oswald, E. T., and J.P. Senyk  
1977 *Ecoregions of Yukon Territory*. Victoria, B.C., Canadian Forestry Service, Pacific Forest Research Centre.
- Oswalt, Wendell H. and James W. VanStone  
1967 *The Ethnoarcheology of Crow Village, Alaska*. Smithsonian Institution Bureau of American Ethnology Bulletin 199. Washington, U.S. Govt. Print. Off.
- Rand, Austin Loomer  
1945 *Mammals of Yukon*. Ottawa, Dept. of Mines and Resources.
- Renewable Resources Consulting Services and Williams Brothers Canada Ltd.  
1971 *A Study of the Porcupine Caribou Herd*. Volume One. Edmonton, Renewable Resources Consulting Services.
- Richardson, John, Sir  
1851 *Arctic Searching Expedition: A Journey of a Boat-voyage Through Rupert's Land and the Arctic Sea, in Search of the Discovery Ships Under Command of Sir John Franklin. With an Appendix on the Physical Geography of North America*. London, Longman, Brown, Green, and Longmans.
- Roots, Charles Frederick, Scott C.A. Smith and J.C. Meikle  
2004 *Ecoregions of the Yukon Territory: Biophysical Properties of Yukon Landscapes*. Summerland, B.C., Agriculture and Agri-Food Canada, Research Branch.
- Rowe, J. S. and William Edward Durant Halliday  
1972 *Forest Regions of Canada*. Ottawa, Information Canada.
- Russell, Donald Edmund, P. McNeil and Porcupine Caribou Management Board  
2002 *Summer Ecology of the Porcupine Caribou Herd*. Whitehorse, Yukon, Porcupine Caribou Management Board.
- Sears, Roebuck and Company  
1969 *The 1902 Edition of the Sears Roebuck Catalogue*. New York, Bounty Books.
- Simpson, Mark R., Brian G. Slough, Stan Boutin, R. Harvey Jessup  
1989 *Muskrat Harvest and Management on Old Crow Flats*. Whitehorse, Yukon Department of Renewable Resources.
- Slobodin, Richard  
1960a Eastern Kutchin Warfare. *Anthropologica* 2(1): 76-93.

- 1960b Some Social Functions of Kutchin Anxiety. *American Anthropologist* 62(1): 122-133.
- 1962 *Band Organization of the Peel River Kutchin*. National Museums of Canada Bulletin 179. Anthropological Series 55. Ottawa, Department of Northern Affairs and National Resources.
- Smith, Shirleen and Vuntut Gwitchin First Nation  
2009 *People of the Lakes: Stories of Our Van Tat Gwich'in Elders/Googwandak Nakhwach'ànjòo Van Tat Gwich'in*. Edmonton, University of Alberta Press.
- Stegmann, A. Theodore  
1983a *Boreal Forest Adaptations: the Northern Algonkians*. New York, Plenum Press.
- 1983b Changing Perceptions of Human Adaptation. In *Boreal Forest Adaptations: the Northern Algonkians*, editor A. Theodore Stegmann, pp. 1-8. New York, Plenum Press.
- Stegmann, A. Theodore, Marshall G. Hurlich, and Bruce Winterhalder  
1983 Coping with Cold and Other Challenges of the Boreal Forest: An Overview. In *Boreal Forest Adaptations: the Northern Algonkians*, editor A. Theodore Stegmann, pp. 317-352. New York, Plenum Press.
- Steigenberger, L. W.  
1974 *Northern Yukon Freshwater Fisheries Studies, 1973*. Task Force on Northern Oil Development (Canada). Environmental-Social Committee Report 74-20. Ottawa, Information Canada.
- Sullivan, Robert Jeremiah  
1942 *The Ten'a Food Quest*. Anthropological Series Catholic University of America No. 11. Washington, DC, The Catholic University of America Press.
- Tanaja, Grace H.  
1998 *Rampart House Archaeology Project-Phase I: The 1998 Field Season at Rampart House, Northern Yukon*. Edmonton, Alberta, Department of Anthropology.
- VanStone, James W.  
1968 *Tikchik Village: a Nineteenth Century Riverine Community in Southwestern Alaska*. Fieldiana, Anthropology, v. 56, No. 3. Chicago, Field Museum of Natural History.

- 1970 *Akulivikchuk: a Nineteenth Century Eskimo Village on the Nushagak River, Alaska*. Fieldiana, Anthropology, v. 60. Chicago, Field Museum of Natural History.
- 1972 *Nushagak: an Historic Trading Center in Southwestern Alaska*. Fieldiana, Anthropology, v. 62. Chicago, Field Museum of Natural History.
- 1974 *Athapaskan Adaptations: Hunters and Fisherman of the Subarctic Forests*, edited by Walter Goldschmidt. Chicago, Aldine Publishing Company.

VanStone, James W. and Joan B Townsend

- 1970 *Kijik: an Historic Tanaina Indian Settlement*. Fieldiana, Anthropology, v. 62. Chicago, Field Museum of Natural History.

Wade, Barbara J.

- 1982 *Cutlery from the Fort at Coteau-du-Lac, Quebec*. History and Archaeology 61. Ottawa, National Historic Parks and Sites Branch, Parks Canada: Environment Canada.

Wahl, H. E., D.B. Fraser, R.C. Harvey, and J.B. Maxwell

- 1987 *Climate of Yukon*. Ottawa, Environment Canada. Atmospheric Environment Service.

Watt, Robert D.

- 1977 *The Shopping Guide of the West: Woodward's Catalogue, 1898-1953*. Vancouver, J.J. Douglas.

Welsh, Ann N.

- 1970 Community Pattern and Settlement Pattern in the Development of Old Crow Village, Yukon Territory. *Western Canadian Journal of Anthropology* 2(1): 17-30.

West, Frederick Hadleigh

- 1959 On the Distribution and Territories of the Western Kutchin Tribes. *Anthropological Papers of the University of Alaska* 7(2): 113-116.
- 1963 *The Netsi Kutchin: An Essay in Human Ecology*. Thesis (Ph.D.), Louisiana State University, Baton Rouge, Louisiana.

Whymper, Frederick

- 1868 *Travel and Adventure in the Territory of Alaska*. London, J. Murray.

- Wiken, E. B., D.M. Welch, G.R. Ironside, and D.G. Taylor  
1981 *The Northern Yukon: an Ecological Land Survey*. Ecological Land Classification Series no. 6. Vancouver, Environment Canada, Lands Directorate.
- Winterhalder, Bruce  
1983 History and Ecology of the Boreal Zone in Ontario. In *Boreal Forest Adaptations: the Northern Algonkians*, editor A. Theodore Steegmann, pp. 9-54. New York, Plenum Press.
- Woodhead, Eileen  
1991 *Trademarks on Base-metal Tableware: Late 18th Century to Circa 1900 (Including Marks on Britannia Metal, Iron, Steel, Copper Alloys and Silver-plated Goods)*. Ottawa, National Historic Sites, Parks Service, Environment Canada.
- Woodward, Arthur  
1965 *Indian Trade Goods*. Oregon Archaeological Society Publication no. 2. Portland, Oregon, Metropolitan Press for the Oregon Archaeological Society.
- Yerbury, J. C.  
1986 *The Subarctic Indians and the Fur Trade, 1680-1860*. Vancouver, University of British Columbia Press.