Archaeological Overview Assessment
Northern Secwepemc Traditional Territory

FINAL REPORT

Prepared for the First Nations of:

Canim Lake
Box 1030
100 Mile House BC
VOK 2E0

Canoe Creek
General Delivery
Dog Creek BC
VOL 1J0

Soda Creek
RR 4, Site 15, Comp 2
Williams Lake BC
V2G 4M8

Williams Lake
P.O. Box 4
RR 3, Sugarcane
Williams Lake BC V2G 1 M3

and

Ministry of Forests
Cariboo Forest Region
200-640 Borland Street
Williams Lake BC V2G 4T1

Prepared by

Ian R. Wilson, Kevin Twohig and Bruce Dahlstrom

August 1998

I. R. Wilson consultants Ltd.

13-6782 Veyaness Road, Victoria, British Columbia V8M 2C2
Tel: (250) 652-4652 Fax: (250) 652-2377 E-mail: irw@islandnet.com

Credits

Principal Investigator/Author
Ian R. Wilson

Project Manager
Kevin Twohig

Authors
Bruce Dahlstrom
Kevin Twohig

Contributing Authors
Alison Biely
Tony Hewer
Jennifer Little
Farid Rahemtulla

Community Information Gathering
Canim Lake Band
Irene Gilbert
Liz Pete

Canoe Creek Band
Agnes Jack
John Peebles
Shirley Rosette

Soda Creek Band
Joan Philips
Tom Sellars

Williams Lake Band
Jean William

Alison Biely
Sandra Peacock

Background Research/Mapping
Alison Biely
Chris Engisch
Fraser Bonner

Analysis/Model Development
Bruce Dahlstrom
Kevin Twohig

Graphics
Dave Metz
Andrea Spevakow

GIS Consultant
Clover Point Cartographics

Report Production
Jenny Chomack
Julie Dawes
Naomi Eskelson

Management Summary

This archaeological overview assessment of the traditional territories of the Northern Secwepemc First Nations (NSFN) was undertaken at the request of the Canim Lake, Canoe Creek, Soda Creek and Williams Lake bands. Though our contract was through the Williams Lake Band representing the other NSFN bands, funding for the project was from the Ministry of Forests, Cariboo Region. The provincial Archaeology Branch of the Ministry of Small Business, Tourism, and Culture monitored the progress of the project and ensured that it adhered to and was consistent with the provincial guidelines for archaeological overview assessments.

The purpose of this study is to develop a predictive model for the occurrence of archaeological resources and provide written and mapped information on this archaeological resource potential. Much of the data and interpretation in the following pages are of a technical nature but as far as is possible, discussions are presented in a non-technical manner.

In terms of determining archaeological potential within the project area, archaeological resources are the sole focus of the analysis. This report is not designed to assess traditional use of the project area by First Nations peoples, Ethnographic and ethnohistorical summaries are included primarily as aids to predicting and interpreting archaeological remains. In this attempt to interpret the broader area cultural heritage and identify general areas of sensitivity, emphasis is placed on information that pertains to the traditional use of broad landscape areas only. Specific traditional use site data and resources, individual place names and other aspects of a detailed traditional use study are not addressed.

Table of Contents

CREDITS i
MANAGEMENT SUMMARY ii
TABLE OF CONTENTS iii

1. **INTRODUCTION 1**

2. **BACKGROUND 3**

2.1 ENVIRONMENT 3
2.2 ETHNOGRAPHY AND ETHNOIHISTORY 6
2.2.1 Linguistic and Ethnic Affiliations 6
2.2.1.1 Chilcotin 7
2.2.1.2 Shuswap 8
2.2.1.3 Carrier (Southern Carrier) 10
2.2.2 Settlement Patterns, Ethnography and Ethnohistory 11
2.2.2.1 Chilcotin 11
2.2.2.2 Shuswap 13
2.2.2.3 Carrier 15
2.2.2.4 Ethnographic Data Utility for Model 16
2.3 ARCHAEOLOGY AND CULTURAL TRADITIONS 16
2.3.1 Early Period 17
2.3.2 Middle Period 19
2.3.3 Plateau Pithouse Tradition 21
2.3.4 Summary 22
2.3.5 Central B.C. Prehistory 22
2.4 ARCHAEOLOGICAL DATA UTILITY FOR MODEL 23
2.5 PREVIOUS ARCHAEOLOGY 24
2.6 SITE TYPES 25
2.6.1 Habitation Sites 25
2.6.2 Lithic Scatters 26
2.63 Subsistence Features 27
2.6.4 Culturally Modified Trees 27
2.6.5 Rock Art Sites 28
2.6.6 Petroforms 28
2.6.7 Human Burials 29
2.6.X Trails 30
2.6.9 Historic Sires 30

3. METHODOLOGY 31

3.1 INTRODUCTION ..31
3.2 INFORMANT PROGRAM/SITE RECORD ANALYSIS 33
3.3 SITE LOCATION ANALYSIS 34
3.4 MODEL DEVELOPMENT 34
3.5 GIS DEVELOPMENT AND INTEGRATION 35
3.5.1 Integration of First Nation Information 35
3.5.2 Plotting of CHIN Information at 1:20,000 36
3.5.3 Plotting of Survey Data 37
3.5.4 Translation and Incorporation of Digital Information 37
3.5.5 Archaeological Potential Rating System 37
3.5.6 Variable Evaluation and Rating 38

4. RESULTS 42

4.1 INTRODUCTION 42
4.2 TRAIL INFORMATION.. 45
4.3 POTENTIAL ZONES 48
4.3.1 Archaeological sites.. 48
4.3.2 Rivers and Streams.. 49
4.3.2.1 Two line rivers.. 50
4.3.2.2 Single line rivers 51
4.3.2.3 Intermittent streams 52
4.3.3 Lakes.. 52
4.3.3.1 Around lakes larger than 1000 ha 52
4.3.3.2 Around lakes 100-1000 ha 53
4.3.3.3 Around lakes 5-100 ha.. 53
4.3.3.4 Around lakes <5 ha 54
4.3.3.5 Wetlands 54
4.3.4 TRIM Eskers 55
4.3.5 TRIM Cliffs 55
4.3.6 Intersections 55
4.3.7 Forest Cover.. 56
4.3.8 Summary of Potential Zones.. 57

5. RECOMMENDATIONS.. 58

5.1 MANAGEMENT RECOMMENDATIONS.. 58
5.2 ADDITIONAL RECOMMENDATIONS 60
5.3 INCORPORATION OF ADDITIONAL INFORMATION.. 61

6. IMPLEMENTATION GUIDE FOR THE MODEL 62

REFERENCES CITED 65

LIST OF TABLES

Table 1 Site Distribution by Potential Zone 58

APPENDICES

A. SUMMARY OF SITES CAPTURED

B. GLOSSARY OF TERMS

C. BIBLIOGRAPHY

Archaeological Overview Assessment
Northern Secwepemc Traditional Territory
FINAL REPORT

1. Introduction

The following archaeological overview assessment has been prepared at the request of the Northern Secwepemc First Nations (NSFN) and the Ministry of Forests, Cariboo Region. The provincial Archaeology Branch of the Ministry of Small Business, Tourism and Culture was involved in an advisory capacity in order to ensure that the project was consistent with Archaeology Branch guidelines for Archaeological Overview Assessments as they are presently being conducted.

The project consists of a review and compilation of archaeological and natural resources as well as relevant landscape attributes within traditional territories of the Canim Lake, Canoe Creek, Soda Creek and Williams Lake First Nations. The goal of the project is to establish strategies for the integration of these resources into area land use and resource management plans in order to facilitate their protection. To accomplish this, a model for assessing the potential for archaeological resource occurrence has been developed. This potential model provides a planning tool to reduce conflicts between archaeological resources and development. In future, information pertaining to the potential of encountering archaeological resources will be available at the planning stage of development. This will allow for the implementation of strategies for assessing possible conflicts between these development activities and cultural and heritage resources. Recommended management strategies for the zones of varying archaeological potential determined by this model are provided.

The purpose of this study is to provide written and mapped information on archaeological resource potential including information on the locations of known archaeological sites. The project produced a set of paper maps of the study area identifying known site locations as well as illustrating the mode1 of archaeological potential. Each archaeological potential polygon and site location is linked with a database record composed of a unique identifier and/or archaeological site descriptor. Both the maps and the linked database information have been digitized and provided in Arc-Info export format.

In summary, the goals of the study are to:

1) produce a report outlining the history, prehistory, ethnohistory, geographical location. known archaeological sites, previous archaeological surveys and archaeological work undertaken within the vicinity of the study area;
2) plot all known archaeological sites within the study area at 1:20,000 scale;
3) develop a predictive model and from that determine and map archaeological potential zones within the project area; and
4) recommend management strategies for each of the potential zones.

Heritage sites and objects on private and Provincial Crown land in British Columbia are protected under the Heritage Conservation Act which is administered by the Archaeology Branch of the Ministry of Small Business, Tourism and Culture. Heritage resources specifically protected by the Act include Provincial heritage sites, burial places with historical or archaeological value, aboriginal rock paintings or carvings, sites with evidence of human habitation or use before 1846 and heritage wrecks. The Lieutenant Governor in Council may also make regulations to define the extent of types of sites protected by the Act.

Archaeological and historical sites are places that indicate past human occupation or use. Archaeological sites are those which can be investigated primarily by archaeological methods such as excavation whereas historical sites can be studied not only by archaeological methods but also through the analysis of written records.

Heritage resources can be prehistoric in age (lhe time before European arrival) or they can be historic. They can be of Native Indian, European, Euro-Canadian or other ethnic affiliation. Ethnographic heritage sites are locations reported as having been used or occupied by Native Indian people in the past which may or may not contain any physical evidence for such an occupation or use. A reported ethnographic site found to contain physical evidence changes the site to an archaeological site enhanced with ethnographic information. Ethnographic sites with no corroborative physical evidence are not treated as heritage sites according to present heritage legislation. However, ethnographic sites require proper management as a responsibility of developers.

There are usually three stages to the heritage resource impact assessment and review process including overview assessment, detailed impact assessment and impact mitigation. The overview assessment is intended to identify and assess heritage resource potential or the likelihood that archaeological sites are present in a given area. The objectives of the detailed impact assessment are the identification and evaluation of heritage resources within a proposed development area and also the assessment of possible impacts by the development on these sites. Impact mitigation is any course of action that results in the reduction or the elimination of the adverse impacts of a development. Mitigation usually involves site protection, project redesign or systematic data recovery, normally involving archaeological excavation. The present study was designed to satisfy the objectives of an archaeological overview assessment.

2. Background

2.1 Environment

The study area is within the Fraser Basin physiographic subdivision, characterized by low, flat to gently rolling relief. The area has been cut by the Fraser River and its tributaries and now contains many lakes and poorly drained depressions. Glacial features such as drumlins, eskers and glacially dammed lakes are common in the region (Holland 1976). The study area falls primarily within the boundaries of the Interior Douglas Fir and Sub-Boreal Pine-Spruce biogeoclimatic zones, with portions falling within the Bunchgrass, Montane Spruce and Engelmann Spruce-Subalpine Fir biogeoclimatic zones.

The Interior Douglas Fir biogeoclimatic zone is the warm forested zone characteristic of most of the central Interior Plateau. Higher elevations are characterized by Douglas fir (*Pseudotsuga menziesii*) and stands *of* regenerated fodgepole pine (*Pinus contorta latifolia*), while Douglas fir and ponderosa pine (*Pinus ponderosa*) are more common at lower elevations. Soapberry (*Shepherdia canadensis*), kinnikinnick *(Arctostaphylos uva-ursi*), juniper (*Juniperus communis*), pinegrass and feathermoss make up the understorey and ground cover. The Sub-Boreal Pine-Spruce zone is characteristic of the colder high elevated plateau regions to the north and west, where regenerated lodgepole pine and white spruce *(Pinus glauca*) dominate the forests. Understorey and ground cover consists *of* kinnikinnick, pinegrass, lichens and feathermoss. The Bunchgrass biogeoclimatic zone lines the lowest elevated regions of the Plateau along the banks of the Fraser and Chilcotin rivers. The hot and dry climate facilitates the growth of bluebunch wheatgrass *(Agropyron* caninum) and sagebrush (*Artemisia tridentata*), while Douglas fir and ponderosa pine make up the sparse forests. At the middle elevations of the south-central Interior Plateau is the Montane Spruce biogeoclimatic zone, forested by Engelmann spruce (Picea *engelmannii),* hybrid spruce (Picea *lutzii*), subalpine fir *(Abies lasiocarpa),* trembling aspen *(Populus tremuloides),* Douglas fir and lodgepole pine. Finally, the Engelmam-Spruce Subalpine-Fir biogeoclimatic zone is situated at subalpine high elevations characterized by severe cold climate. At the highest elevations are open parkland, meadows and grassland, while whitebark pine *(Pinus albicaulis),* Engelmann spruce, subalpine fir, lodgepole pine and the occasional mountain hemlock (*Tsuga* mertensinna) make up the forested regions.

The most common large mammals in the study area include mule deer *(Odocoileus hemionus),* white-tailed deer *(Odocoileus virginianus),* elk or wapiti (*Cervus elaphus*), black bear (*Ursus americanus*), grizzly bear (*Ursus arctos*), moose (*Alces alces*), grey wolf (*Canis lupus),* cougar (*Felis concolor*) and, at higher elevations, bighorn sheep (*Ovis canadensis*), mountain goat (*Oreamnos americanus*) and caribou (*Rangifer tarandus*). Salmon (*Oncorhynchus* sp.) can be found in the many streams and rivers throughout the project area.

The environmental history of the study area has significant implications for human occupation in the region. The entire study area was overlain by glacial ice with ice retreat and stagnation producing proglacial lakes near the study area. The study area was likely ice-free and habitable by 9,500 to 10,000 years ago (Clague 1981). Following glacial retreat, continuing geological processes further modified the physical landscape of the study area. Fluvial downcutting has occurred, particularly along the higher rivers such as the Fraser and Chilcotin, forming steep canyons, river terraces and scarp slopes (Ryder 1982). Other long term processes including fluvial, alluvial and aeolian deposition and erosion have occurred.

The climate has changed throughout the post-Pleistocene period with varying effects on human populations. Between 12,000 and 10,500 years ago, conditions were cool and moist but this period probably predates human occupations. The next 3,500 years marked a warmer and dryer period known as the Hypsithermal (Hebda 1982, 1986; Mathewes 1985). At this time, grasslands were most widespread with forests confined to upper elevations. Many rivers and lakes were probably either nonexistent or too low to support fish populations undoubtedly resulting in a-lower biodiversity than later times, though a variety of land mammal species would have been available for capture. Fishing was not important during this time and settlement patterns were likely different than later times.

Between about 7,000 to 4,500 years before present (B.P.), temperatures remained warm but precipitation increased resulting in expanded grassland/parkland environments (Mathewes 1985). Though fish were likely more abundant, carbon isotope studies suggest a continued high reliance on hunting (Cbisholm 1986).

The period from about 4,500 to 3,000 years ago evidenced a cooler, moister climate than today. Ungulate and plant diversity was likely low, but fish populations showed dramatic increase in size and stability. At this time, the ethnographic pattern common in the region reflecting a reliance on fish and particularly spawning fish likely became established (Fladmark 1982). The past three thousand years has seen a stable environment (Mathewes and King 1989) likely resulting in the apparently stable Native land use patterns, broken briefly through territorial changes and ultimately European arrival.

2.2 Efhnography and Efhnohisfory

E,thnography is a description of a particular culture based on observations, participation and interviews with members of that culture. Ethnohistory describes Native life and events in early historic times and is based on written records. Archival documents are sources of both ethnohistoric and ethnographic data. All data in this report are from published and unpublished sources as opposed to original research.

Alexander (1996) presents an extensive summary of these data for lands in the traditional territories of the Shuswap, Carrier and Chilcotin.

2.2.1 Linguistic and Ethnic Affiliations

Three different groups have been known to have used areas within the general region of the project area at some time in the past. These are the Chilcotin and Carrier (specifically the subgroup called the southern Carrier) of the Athapaskan language family and the Shuswap, or Secwepemc, of the Interior Salish language family. While the Shuswap dominate the majority of the area, Chilcotin and Carrier have some territories within the west and north sections of the project area.

Shuswap, together with the Thompson and Lillooet languages, belongs to the Northern group of Interior Salish. The region throughout which Sluswap and other Interior Salish languages are spoken falls within the Plateau culture area. From most available ethnographic literature, it would appear that the majority of the study area is within Shuswap territory, but encompasses an area that was used as hunting grounds by the Chilcotin and Carrier at different periods in the past.

The use of the Indian Affairs administrative term “band” should not be confused with the anthropological use of the same term, meaning a type of social unit. Among the Shuswap, bands were not organized political units. Rather, Shuswap bands, like the neighbouring Chilcotin and Carrier, were “social communities of people living near one another and voluntarily accepting common interests”. In turn, these bands were comprised of “camp clusters” organized on the basis of kinship, friendship, geographic proximity and mutual interests in resource exploitation (Lane 198 1:407). Bands generally had central gathering places from which they took their names (Alexander 1996%).

2.2.1 .I Chilcotin

Chilcotin is one of 23 languages comprising the Northern Athapascan subdivision of the Athapaskan language family. Although the number of Chilcotin bands, their names and their territories have varied over time, the Indian bands who currently identify themselves as members of the "Chilcotin Nation" are the Alexandria Indian Band, the Anahim Indian Band, the Stone Indian Band, the Nemiah Valley Indian Band, the Toosey Indian Band and the Alexis Creek (Redstone) Indian Band (Lane 1981:407; Glavin 1992: 150).

The Chilcotin are probably fairly recent arrivals on the Chilcotin Plateau, having moved there fromfurther north However neither oral traditions nor origin stories reflect such a move (Lane 198 1:402).

Traditional Chilcotin territory including its late eastward expansion has been described as follows:

> All the Chilcotin lived until about sixty years ago or less on the headwaters of the Chilcotin River and.... Salmon [Dean] River and other streams rumring to the Coast. Their main band had headquarters near Anahim Lake.... After the decimation of the Shuswap of Fraser River by smallpox in the early sixties of the last century, most of the tribe shifted further east to the central portion of the Chilcotin Valley, and some of them settled within Shuswap territory near Fraser River. Later they monopolized some of the more western hunting grounds of the Shuswap and Lillooet west of Fraser River (Teit 1910-1913).

Similar information is provided in Teit's brief account of Chilcotin ethnography.

> Until about thirty-five or forty years ago [prior to 1909], nearly two-thirds of the whole [Chilcotin] tribe lived in the valley which skirts the eastern flanks of the Coast Range from Chilco Lake north to near the bend of Salmon [Dean] River.... The country from a little

> below Hanceville, or at least all of it east of Big or Deer Creek, was looked upon strictly as Shuswap territory (Teit 1909b:761).

On the basis of his twelve months of ethnographic fieldwork among the Chilcotin between 1948-l 95 1, Lane made the following observations about traditional Chilcotin territory and its expansion eastward.

> In the early twentieth century the Chilcotin occupied the drainage system of the Chilcotin River and the upper reaches of the Homalco, Klinaklini and Dean Rivers.... In pre-European times their territory did not extend so far eastward.... the Chilcotin probably moved from a more northerly region into the Chilcotin plateau in the not too distant past. Their own recollections carry no hint of such a move. They have no traditions of migration or of the origin of themselves as a people. Many older Chilcotins believed that other peoples once lived in parts of what is now Chilcotin territory and that the Chilcotin at that time occupied the drainage systems of the Chilcotin River above where it joins the Chilko River and perhaps the upper Nazko River.... The main valley of the Chilcotin River was the home of a semi-mythical people, the...`little Salishan(s)' who lived in pit houses and subsisted on salmon. The Chilcotin entered the valley, scared the...[`little Salishan'] away and took over the salmon fishing (Lane 1981:407).

It has been suggested, however, that at one time there had been considerable intermarriage between the Chilcotin and the Canyon Shuswap, to the extent that it was estimated the Canyon Shuswap were "nearly half Chilcotin in blood" in 1855. It was further noted that although in general the Chilcotin would seldom winter near the Chilcotin Canyon for fear of attack from the Shuswap and others to the east, sometimes a few of the Chilcotin would winter with the Canyon Shuswap. These latter people were said to be great traders, The Canyon Shuswap controlled part of the Chilcotin salmon supply, and the Chilcotin traded extensively with them (Teit 1909 a:513, 535, 570; 1909b:761-763).

2.2.1.2 Shuswap

Shuswap is part of the Interior Salish division of the Salishan language family. More specifically, Shuswap, together with the Thompson and Lillooet languages, belongs to the

Northern group of Interior Salish. The region throughout which Shuswap and other Interior Salish languages are spoken falls within the Plateau culture area.

Shuswap bands, like the Chilcotin, were social units. As mentioned above, these units were similarly comprised of "camp clusters", linked to one another by "marriage, kinship, and frequent association" (Lane 1981:407; Stryd 1994:7).

Teit wrote the most extensive ethnography of the Shuswap, and collected much of his information from several old men from the Dog Creek and Canoe Creek bands (Alexander 1996:6). Teit (1909b) describes seven "tribal divisions" of the Shuswap, three of which apply to the project area. The *SLemxu'lexamux* people made up the "Fraser River Division" of the Shuswap,

> .those inhabiting the valley of Fraser River from High Bar to Soda Creek.... All or nearly all their villages and reserves, with the exception of some near High Bar, are situated on the east side of Fraser River (Teit 1909b:453).

Bands in this division include the Soda Creek, Buckskin Creek, Sugarcane or Williams Lake, Esketemc (Alkali) Lake, Dog Creek, Canoe Creek, Empire Valley, Big Bar, High Bar and Clinton (Teit 1909b:457-460).

The *Se'tLemux* people made up the "Can[y]on Division" of the Shuswap, which Teit describes as:

> . ..a name for the district around Chilcotin River, below the can[y]on.... This division lived west of the Fraser, from about Churn Creek to beyond Riskie Creek; their main villages being situated at the foot of the can[y]on of Chilcotin River. They claimed the country back to within a short distance of Hanceville...and on the north and south hunted over part of the same grounds used by the Fraser River division (Teit 1909b:453).

This division included the Riskie Creek, North Canyon, South Canyon and Chilcotin Mouth bands. By the time of Teit's account in 1909 only a few families of this division remained.

Despite the Chilcotin "gradually encroach[ing] on these grounds", the Shuswap continued to claim this as traditional hunting territory (Teit 1909b:457-460, 462).

The *Stie'tamux*, or "interior people", made up the "Lake Division" of the Shuswap, those who inhabited the plateau between the Fraser and North Thompson River, headquartering at Canim Lake. The Lac la Hache, Canim Lake and Green Timber bands are included in this division. According to Teit, traditional hunting and fishing territory included:

> .the lakes of the plateau,. .[they] ranged very little south, east or west, because of their proximity to the grounds of other division. To the north, however, they hunted around the eastern parts of Horsefly and Quesnel Lakes, the Clearwater Lakes, and up into the Caribou Mountains opposite the Yellow Head Pass (Teit 1909b:454).

Other ethnographic accounts of the Shuswap people in this area include Dawson (1892), Morice (1895) and Ray (1939).

2.2.1.3 Carrier (Southern Carrier)

The Carrier live north of Alexandria in the east to a point midway between Ulkatcho and Anahim Lake in the west, and extend northwards. They speak a Northern Athapaskan language (Tobey 1981:413). Three geographically and linguistically distinct Carrier subgroups have been identified; the Southern Carrier is the group that shares traditional territories in and near the study area. Some Carrier migrated from Ulkatcho to Chilcotin territory at Anahim Lake from 1850 to 1949, and a Carrier reserve was officially established there in 1949.

Fourteen subtribes have been identified in various sources, each being a named and localized socioterritorial unit (Tobey 1981:413). Many researchers assume the Carrier originally lived east of the Rocky Mountains but moved many centuries ago into their present homeland in northern British Columbia (Tobey 1981:415).

Portions of the northern edge of the Williams Lake Forest District is claimed by the modem Alexandria, Nazko and Red Bluffbands (Alexander 1996:12).

2.2.2 Settlement Patterns, Ethnography and Ethnohistory

Reports pertaining to settlement patterns, ethnography and ethnohistory vary by area with some well described and others poorly recorded. The following is a discussion on Chilcotin, Shuswap and Carrier settlement patterns and other ethnographic information. The information is based on a small but well known set of published and unpublished sources.

Significant social changes in settlement patterns of all three groups can be seen after 1800, and was likely stimulated by direct or indirect contact with Euro-Canadians. One result of such contact was the arrival of smallpox. Smallpox epidemics made huge impacts on Native populations, sometimes devastating whole social groups, resulting in changes in band composition and location (Alexander 1996:11).

2.2.2.1 Chilcotin

Very little has been written about Chilcotin ethnography or ethnohistory. The following general account of Chilcotin ethnography and subsistence activities is drawn primarily from the work of Lane (1953, 1981) and from Tyhurst (1975-1976), a study based on nearly four months of fieldwork among the Stone and Nemiah bands.

In November, the Chilcotin moved into winter camps by lakes that had good supplies of fish. Like the Carrier, they usually wintered in smaller, more scattered villages than the Shuswap (Furniss 1993a:2; Lane 1981:409; Tobey 1981:414-5 in Alexander 1996:9). Traditional winter structures were rectangular above-ground houses. Rafters were laid on a central ridge pole in this house which typically would measure twenty feet long by fifteen feet wide (Lane 1981). The Chilcotin hunted and fished while these winter quarters were being prepared.

Early in December, most hunting ceased and ice fishing was undertaken, but during late December and throughout most of January, people stayed inside as much as possible, living on stored food. By March, people began leaving their winter camps to hunt for game. In

April and May, weirs and traps were prepared and fishing began in the streams where fish spawned. There was also trapping and plant food gathering at this time. Hunting intensified in May and June, and fishing continued. In late June, people in large groups moved gradually into the mountains, hunting, trapping, picking berries, and digging roots. After mid-July, when the salmon arrived, almost everyone gathered at fishing sites and numerous camps along the Chilcotin and Chilko rivers. In September, after the salmon runs, family groups dispersed in different directions to do more trapping and lake fishing. In late September and throughout October, people concentrated on hunting. By November, most were back at the lake, preparing for winter (Lane 1953:46-47, 144-146; 1981:403, 406).

Fishing activities included use of several types of fish traps. In lakes, different styles of basketry traps were used in conjunction with weirs to catch three main species including trout, whitefish, and suckers, and sometimes land-locked salmon. Weirs and traps were used in streams to catch spawning lake and stream fish, and in larger rivers for salmon, Dipnets and gaffhooks were also used to catch salmon (Lane 1953:43-44; 1981:405).

The most important game animals hunted by the Chilcotin were elk, caribou, deer, mountain goat, black bear, beaver, muskrat, groundhog and rabbits. As well, various species of ducks, geese, grouse, ptarmigan and other game birds were hunted. Deer, caribou and elk were killed with bow and arrows or with spears. Bears were speared or clubbed. The most important means of obtaining both animals and birds was by the use of snares and traps. Most traps were of the deadfall variety, with the exception of pitfalls which were used for deer. Ducks and geese were clubbed during their moulting periods; most other birds were snared (Lane 1953:44-45, 1981:405). Tyhurst (1975-1976:19-23) recorded the Chilcotin names for 34 species of mammals known to members of the Stone and Nemiah Indian bands. It has been reported that the first moose was observed in the Riske Creek area in 1914, and that elk were plentiful prior to the late 1880s (Terry [1958]:29).

It is Lane's (1953:45) view that among the Chilcotin, although plant foods were important in times of starvation, they were used mainly as condiments and to vary the diet. Berries were gathered wherever they were available. Special trips were made into the high elevation areas to obtain "Mountain carrots" and "Mountain potatoes" in considerable quantities. Tyhurst recorded information on the Chilcotin (Stone and Nemiah) names and uses of about 80 plant species including trees. Whitebark and lodgepole pine were stripped for cambium

2.2.2.2 Shuswap

Although similar to that of the Chilcotin, there are some differences in emphasis surrounding the Shuswap seasonal round.

The Shuswap moved to their winter dwellings, semi-subterranean pithouses, in about November and spent the winter months largely reliant on stored foods, particularly salmon. Winter villages were usually at or near a large main village, as opposed to the Chilcotin and Carrier who wintered in smaller, more scattered villages (Dawson 1892:4-7; Teit 1909b, 1930:261-2 in Alexander 1996:9). Stored foods were supplemented by dried roots and berries and occasionally complemented by fresh game (Dawson 1892; Teit 1909b). Winter was a time of tanning hides and probably of making clothes and weaving baskets (Teit 1909b).

In April, people began to leave their winter dwellings and split into smaller socio-economic groups. These smaller groups would exploit various animal and plant resources. This would include collecting roots dug with digging sticks. The roots would be either dried or cooked in earth ovens. Housing consisted of above-ground circular mat lodges, though bark or skins could be substituted as a covering (Teit 1909b). Cambium from a variety of trees was also collected at this time, either to be eaten raw or dried for winter use (Ray 1932). Migrating birds were taken by a variety of methods during this time.

Hunting activities were done both communally and individually using a variety of methods, including bows and arrows, spears, traps and fences.

The months of June and July were spent gathering wild onion and collecting early berries. Hunting and fishing likely supplemented this diet of roots and ripening berries. During this time, food processing, food storage and hide processing would have been major activities.

The first part of August saw the first of the salmon runs at which time the focus would become procurement and storing of fish. Fish were taken with bag-nets, weirs, spears, leisters, dipnets and trolled and dragged hooks. Salmon were eaten, smoked and dried, with roe prepared for eating and fish oil obtained by rendering. Some berry gathering was also carried out during the salmon season. Salmon was stored in cache pits at the end of this season (Teit 1909b).

The fall was spent gathering berries and roots as well as in hunting of land mammals, apparently an activity of limited importance to the Canyon Shuswap.

The relatively recent use of pithouses was discussed in a personal interview with a Soda Creek First Nation member:

> It is interesting to note that pithouses were occupied at Soda Creek until around 1930. Lucy Charley, for example (J. Gilbert's paternal grandmother: MoFaMo), was born and raised in a pithouse until 1930 at which time she moved into a log house (Walde et al. 1994:9).

Heritage North Consulting Limited also discusses the area resided in by the Soda Creek people.

> In the late 1700s, the territory of the Soda Creek people likely extended halfway to Alexandria and south past Deep Creek (Hawks Creek) to Whiskey Creek. According to Voorhis (1930), the first trading post, Fort Alexandria, was established in the area between 1800-1805 by the Northwest Company. The post was built on the site of an Indian village visited by Alexander Mackenzie in 1795. The post was abandoned in 1821 when the two trading companies amalgamated. In the same year the Hudson Bay Company reestablished another nearby post with the same name (Voorhis 1930; Morice 1978). In the 1840s missionary activity began, with the eventual establishment of the Oblate's residential school at St. Joseph's Mission in the 1860s (Walde et *al.* 1994%9).

2.2.2.3 Carrier

Traditionally, the Southern Carrier were hunters, fishers and gatherers who followed a pattern of season transhumance taking advantage of a variety of resources seasonally available at different locales throughout their territory. From spring to fall, small family groups dispersed to fish, hunt and gather plants. During this time of year. people typically lived in temporary brush shelters (Furniss 1993; Kew 1974). In the fall, people would congregate to take advantage of anadromous fish runs. Dwellings consisted of more permanent fishing houses constructed from trees and saplings, roofed with bark (Fumiss 1993). Greatest population aggregation occurred in winter when permanent villages situated in major river valleys or around lakes were occupied. Dwellings consisted of semi-subterranean circular pithouses with earth covered conical roofs (Ray 1939). Food was stored for the winter months on elevated platforms or in underground pits lined with bark.

Anadromous fish including sockeye, spring, pink and coho salmon and steelhead were very important to traditional economy as were several non-anadromous species such as Kokanee, Dolly Varden, rainbow trout and whitefish.

Hunting focused on ungulates such as caribou, moose, deer and elk. Other important species included black and grizzly bear, mountain goat, hare, beaver, muskrat, marmot, fisher, martin, porcupine, grouse, ducks and geese (Tobey 1981).

Various plant foods including a variety of edible roots cooked in underground tire pits were gathered on a seasonal basis. Lodgepole pine cambium was an important resource, particularly in the spring (Furniss 1993).

More complete information on the Southern Carrier in general is available in Harmon (1957), Morice (1895) and Jenness (1943). The specific seasonal round of the Red Bluff band has been summarized by Dewhirst (1993).

2.2.2.4 Ethnographic Data Utility for Model

Several ethnographic patterns are apparent which have archaeological relevance, particularly to habitation and subsistence activities.

All groups used winter habitations with high archaeological visibility at least over the past 4,000 years. These sites included semi-subterranean houses and storage features which have high archaeological visibility. Summer habitations have less substantial habitation features but may include storage features, Generally, summer habitations are less archaeologically visible because of their general absence of identifiable features, Winter habitation is associated with large water bodies. Summer habitation has similar although more variable patterning.

In terms of ethnographically known subsistence patterns, both fish and large mammals were important. Fish are obviously confined to water ways and presumably had a similar distribution to today. Large mammals are more dispersed and difficult to model, especially considering that even subtle changes in climate affect the distribution of all species. Plant resources (including high elevation resources) were used but for the most part are only mapped today as broad spectrum of species rather than specific plant distributions. Their distribution also varies with climate change in a generally predictable way but only in a macrotopographical sense.

2.3 Archaeology and Cultural *Traditions*

The prehistory of this region is amongst the most poorly known in the province as relatively few excavations have been undertaken. Most researchers have applied models developed largely from the Fraser River and Thompson River areas south and east of the study area (Richards and Rousseau 1987). Most of the nearby archaeological excavations have been conducted in the Williams Lake area at house pit sites FaRm 8 (Williams 1974; Whitlam 1976), FaRn 3 (Carl 1972; Whitlam 1976), FbRn 13 (Kenny 1972) and ElRu 3 (Whitlam 1976). A few other site types have been excavated in the Williams Lake area near Brunson Lake (Lawhead 1979) and at FaRm 23 (Rousseau and Muir 1991). Bussey (1983) has also excavated near Alexis Creek and Magne (1984, 1985 a, c) has excavated in the Gunn and

Yohetta valleys as part of his Taseko Lakes prehistory project. Roscoe Wilmeth (1968,1969,1978) conducted extensive excavations over a number of years at the "Potlatch Site". FcSi 2, near Anahim Lake. Recently, Dahlstrom and Wilson (1998) report on a systematic surface collection and testing program at Drewry Lake which suggests a late Middle period-Plateau Pithouse tradition occupation. As well, excavations were conducted at a lithic scatter site on Little Horsefly Lake (Wilson *et al.* 1998).

David Sanger (1963, 1966, 1969, 1970) established a five part prehistoric sequence based on his early work in the mid Fraser region, a sequence that was virtually unchallenged for more than two decades. Today, a tripartite scheme is most often used, though different divisions have been proposed (Fladmark 1982; Stryd and Rousseau 1996). This sequence has been most recently discussed by Stryd and Rousseau (1996) and Rousseau and Richards (1985). This sequence has been summarized (Wilson *et al.* 1992, 1995) and includes some new interpretations based on research near Kamloops. Very generally, regional prehistory is discussed in terms of an Early period, a Middle period, and the Plateau Pithouse tradition.

2.3.1 Early Period

As in all other areas of the province, the Early period is most poorly documented. Stryd and Rousseau (1996) base their Early period on climate and define the period from deglaciation to the end of the Hypsithermal, which they assess at 7.000 years ago. For such a poorly known time period. a disproportionately large number of "traditions" and "complexes" are hypothesized with different local and regional names. Carlson (1983) has provided a broad regional overview of early traditions in western North America.

The Fluted Point tradition is suggested from a single biface in a Shuswap Lake surface collection (Stryd and Rousseau 1996) and from another surface collected point base near Chase (Fladmark 1982). An apparently similar point to this latter specimen was also recovered from a high altitude meadow near Ashcroft (Rousseau and Gargett 1987). No dated manifestations of this tradition are known in the region.

Some researchers have suggested that the Early Stemmed Point tradition may predate fluted points. Stryd and Rousseau (1996) illustrate a number of specimens "provisionally assigned" to this tradition, all recovered in undated surface collections,

Stryd and Rousseau (1996) suggest the presence of the Plano tradition, citing a museum piece with no provenience (Sanger 1970) and Shuswap Lake surface collections (Grabert 1974). Again, there is no archaeologically documented evidence of this tradition in the region.

Sanger (1968) assigns all microblades from the Interior Plateau to his Plateau Microblade tradition. Among the earliest dated microblades in the study region are those which occur beneath Mazama ash at the Drynoch slide site in the Thompson Canyon, dated to 7,530 ± 270 years B.P. (Sanger 1967:189). More recently at the Landels site (EdRi 11), located at the eastern end of the Upper Oregon Jack Creek area in the vicinity of Ashcroft, a pre-Mazama component dating as early as 8,400 ± 90 years B.P. was recovered. Microblades were the most common tool type from this small assemblage (Rousseau et al. 1991). Microblades do continue through the regional sequence for several thousand years, however, and their undated presence does not necessarily imply great antiquity. The "Early Microblade complex" is not well-defined and should likely be deleted from discussions of cultural traditions in the area as the microblade and core industry is obviously a technological tradition rather than a cultural one.

The Old Cordilleran tradition is known largely from the Columbia Plateau and the southern and central Northwest Coast (Carlson 1983; Fladmark 1982). It has also been labelled the Protowestem tradition (Borden 1969, 1975) and the Pebble Tool tradition (Carlson 1983). Characteristic of this period are unifacial pebble tools and unstemmed leaf-shaped points, No sites attributed to the Old Cordilleran date to the Early period in the study area.

Other than the above-noted Drynoch slide microblade component and the Landels site pre-Mazama component, the only other dated site relating to the Early period is the Gore Creek burial: the redeposited human remains of a young adult likely killed in a mudslide. The remains date to 8,215 ± 115 years B.P. (Cybulski et al. 1981). Neither the Gore Creek burial. the early Landels site component nor the Drynoch slide assemblage can be assigned to any of the above named cultural traditions. The hypothesis that a number of mixed traditions were present in the study area prior to 7.000 years ago is presently entirely speculative. All that is known is that parts of the region were inhabited before the Mount Mazama eruption with the oldest materials at least 8.400 years old.

2.3.2 Middle Period

Stryd and Rousseau (1996) define the Middle period as the time spanning the commencement of the Nesikep tradition at about 7,000 years B.P. to the commencement of the Plateau Pithouse tradition at between 3,500.4,000 years ago. Two different cultural traditions have been proposed during the Middle period. These include the Nesikep tradition, spanning the years between 7,000.4,400 B.P. comprising the Early Nesikep tradition and the Lehman phase; and the Sqlelten tradition, spanning the period between 5,500 years B.P. to the Historic period. The Sqlelten tradition comprises the Lochnore phase and the Plateau Pithouse tradition (Stryd and Rousseau 1996). There is much debate regarding the presence of these two traditions (see Wilson et *al* 1992) as well as their visibility in archaeological sites. However, they are very briefly discussed as these terms are still commonly used in the archaeological literature.

Though the Nesikep tradition was originally defined by Sanger (1969), it has been redefined (Stryd and Rousseau 1996). The Early Nesikep tradition dates from 7,000 to 6,000/5,500 years ago. Traits of this Early Nesikep tradition include: well-made lanceolate, corner-notched and barbed points; a high incidence of formed unifaces; a microblade technology employing wedge-shaped microblade cores; antler wedges; ground rodent incisors; bone points and needles; small oval scrapers, some with bilateral side notches; and faunal assemblages which include deer, elk, salmon, trout: bird and freshwater mussels. Points are generally lanceolate and well made, with a variety of attributes including basal grinding and thinning (Stryd and Rousseau 1996).

The later stage of the Nesikep tradition is the Lehman phase, presently proposed as spanning the period 6,000/5,500 to 4,400 years B.C. Stryd and Rousseau (1996) list a series of distinguishing criteria for the Lehman phase which include thin pentagonal points with obliquely v-shaped comer or side notches; lanceolate knives with straight cortex-covered bases; elliptical knives with prominent basal striking platforms; thin continuous edged circular scrapers; horseshoe-shaped convex end scrapers; a high proportion of fine and medium grained basalts; and no microblades. Stryd and Rousseau assume portable shelters, a nomadic lifestyle and a predominantly land-based economy (1996).

The Sqlelten tradition is a recently defined theoretical construct which presumes a 5,500 year cultural continuum (Stryd and Rousseau 1996). The tradition is seen as a river oriented culture emerging as a result of migration of Salish people into the area to exploit the increasingly predictable salmon runs up the Fraser. The tradition is divided into the initial Lochnore phase, followed by the Plateau Pithouse tradition comprised of the Shuswap, Plateau and Kamloops horizons respectively (Richards and Rousseau 1987; Rousseau and Richards 1985).

The following traits are characteristic of the Lochnore phase: leaf-shaped to lanceolate points with wide side-notches; heavy basal grinding and pointed or convex bases (Lochnore side-notched); bipointed leaf-shaped points; oval bifaces; round to oval scrapers; concave-edged end scrapers “on silicas”; a macroblade technology; a microblade technology “at some sites”; cobble choppers; notched pebbles; edge battered cobbles; scrapers on macroblades; occasional sinuous to denticulate artifact edges; and predominant use of non-vitreous basalts. Lochnore points are described as thick, compared to thin Lehman points. Only Lochnore side-notched points, concave edge end scrapers on silicas and macroblade technology are diagnostic of the Loclmore phase according to present definitions. Evidence for hunting of deer, elk, beaver, duck, and goose(?), salmon fishing and freshwater mollusc collection is present, though intensive exploitation of salmon, the apparent hallmark of the phase, is not known.

2.3.3 Plateau Pithouse Tradition

The Plateau Pithouse tradition forms the final 3,500.4,000 years of the prehistoric record in the region and has been proposed by Rousseau and Richards (1985) and Richards and Rousseau (1987). The tradition is divided into three horizons, all characterized by the presence of semi-permanent pithouse villages and storage pits, suggesting intensive salmon exploitation.

The initial horizon in this tradition is the Shuswap horizon dating between 3,500 to 2,400 years B.P. (Rousseau and Muir 1991). The transition to the Plateau Pithouse tradition has been hypothesized to reflect adaptive responses to changing environmental conditions that occurred during the cool, moist climatic optimum at about 4,000 years B.P. (Kuijt 1989). The period is characterized by medium to large house pit depressions with storage pits within house pit floors, key-shaped formed unifaces, thumbnail scrapers, a variety of distinctive projectile points inferred as atlatl points (see Richards and Rousseau 1987), convex-edged hide scrapers, split cobble tools, high frequencies of utilized and retouched flakes. reliance on local lithics (particularly basalts), a well-developed bone and antler technology and flexed burials within house pits. A wide variety of fauna1 resources has been recovered from Shuswap horizon sites including mammals, birds, freshwater mussels, and freshwater and anadromous fish. Microblades are occasionally found and ground stone is rare.

Plateau horizon occupations are documented between 2,400 and 1,200 years B.P. The period is characterized by smaller house pit depressions which range from oval to circular and lack rims. A central hearth is usually present. Other house pit features suggest close parallels with ethnographically described houses. Projectile points are usually bilaterally barbed with either corner or basal notches falling into two size groups inferred to be atlatl points and arrow points. A variety of leaf-shaped and stemmed points are also present but usually comprise a small portion of the assemblage. Utilized and retouched flakes are common and key-shaped unifaces and bifaces increase in importance. Microblades and cores have been reported and ground stone remains are rare. An improvement in workmanship is noted perhaps related to an almost exclusive reliance on high quality lithics, notably vitreous basalt, obsidian and cryptocrystalline silicates. Some sites have native copper artifacts and an apparent increase in bone, tooth and antler artifact types occurs. Tubular beads, gaming pieces and incisor tools appear. There is an increase in the frequency and variety of coastal shells including *Olivella*. Little is known of burial practices and the most significant dietary change is the apparent intensive utilization of mid-altitude root resources (Pokotylo and Froese 1983). Salmon exploitation has become as important as in historic times (Chisholm 1986).

The Kamloops horizon evidences highly variable house pit sizes and shapes. Small side-notched points are extremely common as are a variety of other arrow points. Microblades are not present. Ground stone, bone, antler and tooth artifacts all become more common and burials are well-documented. Wealth items are occasionally associated with burials.

2.3.4 Summary

In summary, the prehistory of the region is divided into the Early period, the Middle period and the Plateau Pithouse tradition. The Early period consists of several hypothesized traditions, but evidence is still too weak to define these with any credibility. The Middle period is marked by two separate and, for a time, contemporaneous traditions: the Nesikep tradition and the Sqlelten tradition. The last period is known as the Plateau Pithouse tradition which Stryd and Rousseau (1996) include as part of their Sqlelten tradition. If the Plateau Pithouse tradition is part of the Sqlelten tradition, it should probably have a different name such as Plateau Pithouse complex. As well, the recent definition of the Lehman phase and hypotheses concerning the separation of two separate cultural traditions in the Middle period, Lochnore and Lehman, has been added. Most recently, Wilson *et* al (1992) have examined this sequence in depth and have offered some alternative ideas about past populations of the region and their archaeological identifiability.

2.3.5 Central B.C. Prehistory

Helmer (1977) proposes a three part prehistoric cultural sequence for the Carrier and other nations of central British Columbia. The Early Prehistoric period (2,500 B.C. to A.D. I) is characterized by “fish-tailed” projectile points. The Middle Prehistoric period (A.D. 1 to 1,300) is represented by differing styles of comer and side-notched points. The Late

Prehistoric period is characterized by small side-notched and triangular projectile points (Clarke 1981). Very little research has been undertaken toward establishment of a more detailed prehistoric sequence.

HISTORIC PERIOD A.D. 1700-1860

Representative Sites:	Chinlac. Natlkuz Lake, Anahim Lake, Nadsaldalia Crossing, Ulgatcho, Tezli, Punchaw Lake
Diagnostic Artifacts:	Euro-Canadian trade goods, small side-notched projectile points, polished adze blades, bone points

LATE PREHISTORIC PERIOD A.D. 1300-1700

Representative Sites:	Natalkuz Lake, Anahim Lake, Tezli Punchaw Lake
Diagnostic Artifacts:	Several varieties of small side-notched projectile points, several varieties of corner-notched points, flaked and ground stone adzes, bone points

MIDDLE PREHISTORIC PERIOD A.D. I-1300

Representative Sites:	Anahim Lake, Tezli, Punchaw Lake
Diagnostic Artifacts:	Several varieties of corner-notched points, several varieties of large side-notched points, bipolar cores, microblades (?) and microblade cores (?)

EARLY PREHISTORIC PERIOD 3000 B.C.. A.D. 1

Representative Sites:	Natalkuz Lake, Horn Lake, Southwest, Poplar Grove, Tezli, Punchaw Lake, Anahim Lake (?)
Diagnostic Artifacts:	Leaf-shaped points, corner-notched points, excurvate concave based points, stemmed leaf-shaped points, heavy unifaces, microblades and microblade cores

2.4 Archaeological Data Utility for Model

The archaeological record of a region can suggest some important trends with relevance for modeling. First, the Early period reflects subsistence patterns substantially different from those later in time with emphasis on land mammal hunting and a less sedentary lifcstylc. Changes in landforms and climate have occurred through time, often obscuring landscape features potentially attractive to early settlement. Some mapping of glacial features such as drumlins, glacial lakes, etc. has been done at 1:250,000 scale. Therefore, the information is not readily adaptable to 1:20,000 scale maps.. As a result, it is not possible to model this particular period based on available information. The Middle and Late periods are much better represented in the archaeological record and because of more sedentary settlement, sites tend to be more visible. Patterns similar to the early contact period developed during this time allowing for greater accuracy in modeling. However, caution must be taken in applying the known ethnographic settlement pattern to the distant past.

In general, it is clear that more of the landscape was used over time because of changing climate and resource use patterns and therefore zones of potential must be more frequent and broader than those merely suggested by the ethnographic record.

2.5 Previous *Archaeology*

The region has seen several intensive survey projects. The first set of projects was undertaken in the Eagle Lake-Chilko River-Potato Mountain area (Alexander 1987; Magne and Matson 1982, 1984; Matson *et al.* 1979, 1980) and the Taseko Lakes region (Magne 1984, 1985a, b, c). A second major series of studies was conducted near the confluence of the Fraser and Chilcotin rivers (Bumard-Hogarth 1983; Ham 1975; Keddie 1972; Matson and Ham 1973; Mohs 1972; Sneed 1970), while Mitchell (1964, 1968) archaeologically surveyed regions of the Chilcotin Plateau and Bella Coola Valley. Recently, several forest industry related studies have been conducted in the general region west of the Fraser River (Hewer 1996a, b; Middleton 1995; Ridington and Brand 1996; Wilson 1993a, b, 1994a, c) and a number east of the Fraser River (Arcas 1995, 1996; Hewer 1995a, b, 1996a; Howe 1994; Howe and Brand 1995; Merchant and Rousseau 1993; Merchant 1995; Spafford et *al.* 1995a, b; Twohig *et* al. 1997; Weinberger 1998; Weinberger and Wilson 1998a, b, c; Wilson 1995; Wilson and Smart 1994). From a broad landscape perspective, results from most of these surveys seem consistent in their relative low return of archaeological sites, Sites that were identified were consistent in their association with water sources, primarily lakes, creeks, rivers or marshes. Any speculation about site density and distribution remains inconclusive (Wilson and Bouchard 1993).

Archaeological overviews of the Alkali Lake area (Mason 1995; Stryd 1994), the Cariboo Forest Region (Bussey and Alexander 1992), Bald Mountain (Wilson and Bouchard 1993) and traditional use studies (Alexander 1992: Tyhurst 1992) have also focused on the general project area.

In the general region, most sites tend to be small, reflecting a highly mobile population of small group size. Larger sites tend to be associated with lakes, marshes or major rivers. Sites are commonly associated with heads and outlets of lakes. near game crossings and in the Montane Parkland ecozone within 250 m of present water bodies. The Montane Parkland is a transition zone of open forest between 1,500 to 2.100 m above sea level.

Site types commonly recorded in the study region are house pit sites. cache pit sites. combinations of house pits and cache pits and lithic scatters. The first three of these are easily recognizable; whereas lithic scatters of stone tools are more difficult to detect especially when they are wholly or partially buried.

2.6 Site Types

Site types commonly recorded in the study region are house pit/habitation sites, subsistence feature sites, lithic scatters, combinations of house pits and/or subsistence features and/or lithic scatters, culturally modified trees (CMTs), trails and historic sites. Many of these site types are easily recognizable with the exception of wholly and partially buried lithic scatters of stone tools. Sites may be made up of one or several of these components.

2.6.1 Habitation Sites

Prehistoric habitation sites are most common in locations adjacent to or in the immediate vicinity of bodies of water, most commonly large streams, lakes and rivers but also gullies, creeks and other small drainages, In the interior, this site type most typically is characterized by large, circular depressions or house pits. Pithouses were semi-subterranean winter dwellings traditionally but not exclusively used by interior peoples,

Other than fresh water. habitation site locations typically were selected based on the availability of the following criteria: trees for fuel, shelter and construction; local food resources: access to trade routes and transportation; and suitable dry, level ground for camps (Tyhurst 1992:378-381 in Alexander 1996:17). Sheltered locations with appropriate ground for digging were also factors in choosing habitation locations.

The circular semi-subtenanean pithouses typically used by the Shuswap during the winter varied in size according to the number of people being housed. Estimates range from 15-100 people per house with resulting depression sizes of between 3.7 to 21.3 m in diameter and 1.2 to 1.8 m deep (Kennedy and Bouchard 1987; Teit 1900 in Alexander 1996:17). Pithouses, depending on size, could have one central hearth or a hearth for each family. Entrance was either through a ladder leading out through the roof or sometimes a side entrance. Circular mat lodges, sometimes insulated with earth, were also sometimes used by the Shuswap.

For winter houses, the Carrier and Chilcotin more often used square dwellings made of poles and covered with bark, poles, branches or earth (Teit 1909:775-6; Lane 1953:144-6 in Alexander 1996: 18).

Habitation sites are important for the study of past lifeways and generally have high heritage significance, particularly for ethnographically documented villages. Because of their nature as habitation locales, these sites frequently have more than one functional descriptor since cache pits, CMTs, lithic scatters, human burials and rock art are often present. FcRh 4 on Little Horsefly River at Little Horsefly Lake, a multi-component habitation site with house pits, cache pits and a lithic scatter is an example of this site type.

2.6.2 Lithic Scatters

Lithic scatter sites can be classed under “resource procurement/extraction sites,” a more general site description where specialized activities such as the procurement and/or processing of food or raw materials occurred. Lithic scatters can also reflect camp sites where only transitory dwellings such as summer above ground structures were present. Therefore, the category of lithic scatter is not functional but simply a description of the physical remains at a given site.

Lithic scatter sites consist of scatters of stone tools and/or flakes, the result of lithic raw material processing and tool production and/or tool maintenance. Isolated lithic and/or artifact finds are included in this category. These sites are distinguished from habitation sites because of their lack of structural remains and often by their less diverse artifact assemblages, the result of less intensive and more specialized activities than reflected at village sites. Lithic scatters are frequently identified by surface lithics. although archaeological subsurface testing is required to establish the boundaries and depth of the scatter. FbRi 1 and 2, both located on raised terraces above a creek feeding into Starlike Lake are examples of lithic scatter sites.

2.6.3 Subsistence Features

Subsistence features here are defined as cache pits, roasting pits or fish weirs. Like habitation sites, cache pits (subterranean storage pits) and roasting pits are often found in the vicinity of a water source and are often a component of larger, multi-function sites. Fish weirs are found in association with water and fishing locales. Subsistence features, however, can by definition be found anywhere a temporary hunting or fishing camp may have been set up, often in locations away from principal habitation sites. FcRi 12 on Cariboo Island, Quesnel Lake (three cache pits), FbRi 4 on the shore of Starlike Lake (roasting pit) and FcRi 7 on Little Horsefly River (fish weir) are all examples of sites with subsistence features.

Roasting pits are most often located near water and digging grounds, and away from dwellings. Cache pits were used near villages and resource procurement sites, such as fishing locations.

2.6.4 Culturally Modified Trees

In the most general sense, culturally modified trees are any trees evidencing human modification. In a more specific and commonly used sense, CMTs are trees that have been modified by aboriginal people for traditional purposes such as for bark removal, use for traditional building material and so on. Trees evidencing “non-traditional” aboriginal modification such as commercial logging by aboriginals using chainsaws are generally excluded from this category. Many archaeologists do not consider CMTs to constitute archaeological sites unless in association with other cultural materials. However, some archaeologists record all CMTs, even isolated trees, as either archaeological sites or traditional use features. Provincial guidelines today suggest trees with evidence of aboriginal modification be recorded as archaeological sites. Throughout the province, stripped cedar trees are among the most common of CMT types, although in the interior, stripping of lodgepole pine trees and birch trees are more prevalent.

2.6.5 Rock Art Sites

Rock art sites within the Fraser Plateau region can be classified into two basic types: pictographs and petroglyphs. Pictographs are painted images and petroglyphs are pecked or ground images in rock. Pictographs are generally red ochre stained drawings often placed in highly visible locations. Images that have been recorded in the interior include human figures, faces, boats, animals, mythological figures, directional markers and abstract images. Petroglyphs, rare in the interior and mostly a coastal phenomenon, depict similar though not identical subjects to pictographs. Petroglyphs tend to be far more difficult to identify and are thought to have a greater potential time depth than pictographs because of factors of preservation. However, no studies have been undertaken to test this assumption and little is known regarding possible functional, temporal or cultural differences between pictographs and petroglyphs. EkRo 53 is near the confluence of the Fraser and Chilcotin rivers and is a pictograph site depicting a wide variety of animals important in the Native economy. EkRo 118 is a petroglyph site near the confluence of Ward Creek and the Fraser River. The design is geometric rather than anthropomorphic.

2.6.6 Petroforms

Petroforms are culturally produced rock or stone alignments, markers or structures such as cairns or fish weirs. Petroforms are frequently functional in nature, such as fish weirs, dams and canoe skids, but can be associated with human burials, such as cairns. Fish weirs, included in the subsistence feature site type, have been discussed above. FbRf 8, located on the southwest shore of McKinley Lake, includes a described “rock feature” consisting of a pile of stones or cairn.

2.6.7 Human Burials

This category includes sites which contain material remains and features associated with prehistoric mortuary practices. Interments in the historic period can be reported in association with recorded archaeological sites, although no examples are known from the study area. Information about historic cemeteries or individual or family intennents can often be acquired through documentary research and consultation with local residents.

Shuswap burials were located nearby the winter villages, with many burials in a single location. Burials could be marked with poles bearing some of the person's belongings. a pile of rocks, a hut, or some other marker (Teit 1909592 in Alexander 1996:46).

Chilcotin dead were buried where the death took place (Teit 1909:788 in Alexander 1996:46) and before missionary influence, bodies were cremated and buried. The burial was sometimes covered with a stone cairn (Lane 1953:61-2 in Alexander 1996:46). With missionary influence, cremation was abandoned and earth burial became the norm. Some graves were covered or marked and the property of the person was buried with them or placed on top of the grave (Teit 1909:788 in Alexander 1996:46).

Carrier dead were usually cremated and buried near large lakes (Morice 1906:10 in Alexander 1996:47).

Prehistoric burials are difficult to identify because of their generally unmarked nature, although cairns and other related structures can be associated with burials. Burials in the general area are usually associated with larger habitation sites, but are recorded infrequently because of their low archaeological visibility and the generally low level of archaeological testing at sites in the present study area. FaRm 9 is an historical cemetery associated with the Catholic Mission in Williams Lake whereas FaRm 10 is a prehistoric burial associated with a house pit, also found within Williams Lake.

2.6.8 Trails

Trails within the general project area represent transportation corridors frequently following well traveled game trails around and to lakes, rivers, creeks and other geographical features. Because of their ambiguous nature, trails are rarely identified as archaeological sites, but instead are noted as historic and/or traditional land use features. FdRj 2, the Cedar Creek trail, located south of Cedar Creek just east of Quesnel Lake at Likely is an example of this site type.

2.6.9 Historic Sites

Historic sites relate to human activities during the time period documented by written records. Historic sites in the general study area primarily relate to resource extraction such as logging and agriculture, as well as ranching activities and small scale hunting and fishing. Sites can range from large complex sites which represent a wide range of activities to task specific sites which evidence little diversity in activity. Thus, the scientific, historic, and ethnic significance of this site type varies greatly and should be assessed on an individual basis. Such research should take into account archaeological remains, standing structures, documentary evidence, historic significance (links to important events, individuals and developments in local, regional and national history), ethnic and economic significance. It should be noted that current legislation requires archaeological evaluation of all sites older than 1846 and allows more flexibility with more recent resources. However, post- 1846 sites may also require archaeological work and may be protected by legislation depending on the nature and significance of the deposit.

Historic sites within the general area tend to be relatively small, activity specific sites such as hunting and fishing camps and/or cabins, or resource extraction sites, such as those associated with mines or fishing operations.

3. Methodology

3. *1 Introduction*

This archaeological overview was conducted in two distinct phases

Phase 1 involved data acquisition or the compilation of all available background information pertinent to the archaeology of the region. The Following tasks were undertaken during Phase 1:

- Collection of all:
  - 1:50,000 NTS maps,
  - 1:50,000 NTS maps with plotted archaeological sites.
  - 1:20,000 TRIM maps,
  - Biogeoclimatic unit maps,
  - Forest cover/wildlife habitat maps,
  - CHIN site records,
  - Archaeological site maps; and
  - First Nations Community information regarding archaeology.
- Completion of:
  - Cross checking of site forms and maps.
  - Cross checking site locations (maps vs. forms),
  - Site form omissions check,
  - Overlays of past study locations and survey intensities,
  - Study area boundary identification; and
  - Archaeological permit and non-permit report review and bibliography.

To assist in plotting archaeological sites onto the TRIM maps, a 1:50,000 NTS map and its associated CHIN/site form booklet were acquired. The 1:20,000 key map was used to determine which TRIM maps were included on the 1:50,000 NTS maps. Sites on 1:50,000 NTS maps were examined and checked against the CHIN/site form booklet to record site dimensions, location, reliability of information, the site recorder and to identify potential problems in data.

If an axis of the site measured in excess of 100 m, the site was plotted as a polygon. If the site was smaller than 100 m, it was plotted as a point. Location was checked for problems regarding plotting on the 150,000 map, longitude and latitude, site maps and description of location. Based on this information, the reliability of plotting was evaluated. It was determined whether the location was consistent and could be correctly plotted with confidence or whether there was some doubt regarding site placement accuracy. Reliability was based on completeness of the site form and the quality of the information provided. Finally, the site form recorder was identified as either an archaeologist or a local informant. Based on this information, the site was plotted on the 1:20,000 TRIM maps and the database form was completed.

Information quality of past archaeological site records is uneven and efforts were made to standardize site data information as much as possible. Where fields such as elevation, distance to water and so on were not available from the site record, these gaps were completed by examining the locations of recorded sites on topographic map sheets and tilling in necessary fields. Any corrections made to Provincial records were provided to the Archaeology Branch so that their records could be updated.

There were some slight discrepancies between the CHIN database information and individual site forms/maps copied from the Archaeology Branch. These were noted and brought to the attention of the Archaeology Branch, but some information ultimately could not be obtained. Specifically, a number of older site forms (from the 1960s, 1970s and early 1980s) either lacked maps or had poor site maps.

Phase 2 used data collected in the first phase to design both a scientifically acceptable numerical index of archaeological potential as well as a meaningful and practical study that can be useful in future planning. The aim of the analysis was to develop a flexible model tied to specific variables so that new information can be systematically incorporated in the model to refine the parameters of the archaeological potential index. It is important to clearly define these indices and how they were derived. This is accomplished by explicit reference to variables important in site location. In all cases. indices are fully described.

Although models are useful in planning, the development of potential models is not a substitute for archaeological field investigation or consultation with the First Nation community. Some sites occur outside of predicted areas and the predictive power of models in areas which lack survey data may be weak. Model development needs to take this into account and the accuracy of predictions is addressed. The study utilized the methods described below.

Three major factors formed the focus of initial model development: 1) known site locations, 2) ethnographic information; and 3) previous land-use models. Site attributes were quantified as fully as possible from existing site records. Ethnographic data and a community information program were reviewed with a focus on identifying variables important in site placement. Finally, all previous overview studies conducted in the region were reviewed.

3.2 Informant Program/Site Record Analysis

All archaeological site records for the project area were examined for site constituent information. This information was used to develop a standardized list of known site types in the region. A First Nation infonnant program added information about additional reported sites. The goal of this step in model development was to complete a detailed and comprehensive list of site types and potential site types for the project area.

Information regarding archaeological resource locales within the study area was collected within each of the four communities. The objective of this data gathering was to compile information regarding specific locations of archaeological resources known to community members but not presently in provincial records.

Information collected was intended to be general and all encompassing in nature and collection strategies were not affected by preconceptions of archaeological potential.

First Nation informants were invited to identify all archaeological sites they were aware of regardless of type or location. Though many reported sites were in areas of clearly high archaeological potential such as major water bodies, information about other landscape areas was also gathered allowing more confidence in identification of landscape features relevant to archaeological potential.

3.3 Site Location Analysis

Site placement factors for each site type were determined. A large number of geographical, biological, historical and cultural factors can affect site placement. These factors were divided into two broad categories including physical (those factors of the physical environment conducive to site placement) and cultural (those factors of the cultural environment and landscape which influence the placement of sites). Variables included landform, slope, distance from water (broken down into type of water body and including both present and past features), vegetation and resource abundance (divided into proximity to resources known or suspected to be of importance to First Nations including faunal, floral and mineral resources). Cultural factors are more complex and less amenable to direct observation. Cultural factors include trails, travel routes and spiritual/mythological places, among others. These data were collected in the community data collection aspect of Phase 1 studies.

3.4 Model Development

Development of an archaeological potential model initially was planned to involve the integration of geographic units and archaeological types. A model was to be developed for the probability of occurrence of each major site type within each geographic unit. However, it was found that past site research was frequently ambiguous in terms of assigning site function which could lead to serious errors and therefore the model was developed to include all archaeological sites. This approach simplified model development and also has the advantage of being easier to interpret by a lay reader.

This model used clearly defined standards for the plotting of archaeological potential. The use of clearly defined empirical standards for archaeological potential modelling has several advantages:

- Assessments can be scrutinized and replicated,
- Models are easily updated with new data; and
- A model can be applied to adjacent areas with a minimum of revision.

3.5 GIS Development and Integration

35.1 Integration of First Nation Information

All First Nation data were plotted on 1:50,000 NTS maps during Phase 1. These data were organized and separated into point and polygon layers using similar criteria to **recorded** archaeological sites. Systematic descriptive fields for this information were developed. Each polygon and point includes information on the type of data, source and spatial accuracy. This information was generally considered as **reported** archaeological site location data.

Information recorded for this study was limited to that pertaining directly to archaeology. This focus on archaeological information was intended to avoid infringement on separate traditional use studies underway or recently completed within these communities. Information was collected using a contact person from I. R. Wilson Consultants Ltd. to provide guidance in what information was being sought and to provide logistical support. Within each of the communities, knowledgeable individuals elicited the information from the community. Site information was recorded and locations plotted on 1:50,000 NTS maps for the community identified archaeological resources. Once collected, the locations and site information were reexamined and assigned a level of confidence based on the information collected regarding the site and any indication made by the collector or the community member supplying the infonnation on how accurately the location could be plotted on the available maps. This varying level of confidence in location is due to numerous factors including time since the site was last visited, whether the site had been visited in person by the informant and potential difficulty relating “real-time” location to a topographic map of the location. Also at this stage a review of the site information was made to eliminate the plotting of locations considered to be traditional use sites as opposed to archaeological sites.

The community information gathered for the project was digitized and placed on separate layers, This method of using separate layers allows maps (paper or digital) to be produced with or without the community information. These community-identified archaeological sites were not buffered as this would require the buffer's inclusion in all maps generated from the model. As well, keeping the community sites as simple points or polygons allows their management to be assessed on an individual basis in consultation with the relevant First Nation. This allows for assessment of the location accuracy and discussion of management options with the assistance of community knowledge.

Information recorded for this study focused on data directly pertaining to archaeological site locations or potential locations since the mode1 is solely archaeological in nature. Information relevant to the present study but which the community considered to be of a sensitive or confidential nature was dealt with on a case by case basis. All information from the interviews is being kept in strict confidence and any identification of specific sites is made only with explicit First Nation approval.

3.5.2 Plotting of CHIN Information at 1:20,000

All recorded archaeological sites in the study area were examined and 1:50,000 NTS locations were noted. Additionally, Archaeology Branch digital site location files plotted at 1:250,000 scale were collected. Site locations were accurately plotted on 1:20,000 TRIM maps. In order to accurately plot sites at 1:20,000 scale, original site records, NTS 1:50,000 maps and Archaeology Branch digital tiles were analyzed. Some site information is based on questionable recording and a field for spatial accuracy was added. Access Database information was translated into PC Arc/Info and compared with site locations.

3.53 Plotting of Survey Data

The extent of previous survey coverage was plotted on NTS 1:50,000 maps. This information was digitized at 1:20,000. Fields relating to the intensity of survey, date of survey, methods, permit number and surveyor were incorporated. This step was necessary to provide ratings of proximity to known sites where a lack of survey would affect rankings of the variable. For example, an absence of sites may merely reflect an absence of survey and this was factored into the model

Data gaps in the literature search undoubtedly exist. Although all references in the Archaeology Branch bibliography were reviewed, the list is current only to 1995 and non-permit reports or other related documents are not systematically entered after 1988. Reports still in progress or not yet reviewed by the Archaeology Branch could not be included in the review.

3.5.4 Translation and Incorporation of Digital Information

All available digital files, TRIM maps, forest cover maps, biogeoclimatic and habitat maps were translated to PC-Arc Info format where possible. In some cases datums needed to be converted.

3.5.5 Archaeological Potential Rating System

Archaeological resource potential was assessed on the basis of known and reported site location. Five variables including proximity to known archaeological sites and a number of geographical and environmental factors were chosen based on a proven and/or perceived influence on archaeological resource potential. These variables are:

1) Proximity to known archaeological/ethnographic sites,
2) Place names/ethnographic significance,
3) Proximity to water sources,
4) Slope; and
5) Topography.

Before assigning values to each of the variables, existing site location data were analyzed with specific reference to the above variables. For example, the percentage of known archaeological sites in the study area **that** occur adjacent to or in the vicinity of bodies of water was determined. This category was analyzed by determining the association of known sites with different types of water bodies such as rivers, lakes, ponds, marshes and so on to determine the relative frequency of sites associated with different water bodies. Analysis was undertaken to determine whether different site types have different associations. Once percentages were calculated based on known archaeological site distribution, values were assigned to the rating system.

It must be noted, however, that the known archaeological record has been influenced by the apparent skewing of survey and site recording towards areas of generally moderate to high archaeological potential. This skewing occurred most notably during the 1960s, 1970s and early 1980s, when surveys were conducted primarily in areas of known archaeological resources, frequently around and in proximity to major bodies of water and drainages. This general bias towards high potential areas has led to an archaeological record in the project area that tends to be overrepresented by large complex sites.

Once a preliminary set of variables thought to be important in site location was isolated, several meetings were held with other consultants working on different geographic areas of the regional model. Discussions regarding available data-sets, general site information and important variables were held so that all factors were recognized by all consultants working on the regional model.

3.56 Variable Evaluation and Rating

1) Proximity to known archaeological/ethnographic sites

   Proximity to previously recorded archaeological sites is an important variable in rating potential. Site presence is indicative of a high potential area, whereas an absence of sites may simply be indicative of a lack of previous survey. Known sites were divided into "complex site types" (habitation, burial and multi-component sites) and "simple site types"

(CMTs, small lithic scatters! isolated cache/roasting pits, single component sites, etc.). Areas in proximity to complex sites received higher ranking than areas in proximity to simple sites. Areas in proximity to site clusters received higher ranking than areas in proximity ‘to single sites. Values based on proximity to recorded or reported archaeological sites were assigned and entered into the database to construct polygons. For example, areas 1 m - 50 m from clusters of recorded sites were assigned the highest value. Values decrease as distance from sites increases. A simple site absence will not receive the lowest value if no surveys have been conducted in the area. Lowest values were reserved for areas with intensive previous archaeological survey and an absence of sites.

2) **Place names/ethnographic significance**

Areas with place names or reported ethnographic significance were addressed in a similar manner to archaeological sites. The presence of an area with known ethnographic significance with implications for possible archaeological site presence was then assigned an appropriate value.

3) **Proximity to water sources**

Archaeological sites are frequently found in association with bodies of water or water sources. Site records were analyzed as to recorded distance from water bodies including rivers, lakes, ponds, marshes, secondary drainages and seasonal drainages. Stream and lake classifications were used to define water body type. Depending on existing data, values were assigned to areas based on incremental increases in distance from different types of water body similar to methods described for known sites.

A number of data sets pertaining to water sources were examined for the model including fish productivity (FIS) and watershed atlas data. During the initial analysis it was found the fish data had serious gaps and could not be easily modified for archaeological use. It was found that while salmon potential was a good predictor of site occurrence, site occurrence could be predicted equally well with the use of double line TRIM rivers. This data set, although simple, appears to have the same level of resolution as the fish data. The fish data were further limited by being pertinent to only present and not past fish populations. Watershed atlas data could not be immediately applied to the TRIM data and the steps required to apply it were not deemed cost effective. It appears that the potential of streams can be effectively modeled using the readily available TRIM data supplemented by slope information from the digital elevation model (DEM). This approach has the advantages of being fast, cost effective, and not reliant on complex judgemental decisions by the modeler. Additionally, many prehistoric activities took place in the project area near potential non-fish bearing water courses. These activities included temporary habitation, hunting, procurement of plant resources, travel and procurement of lithic resources.

Wildlife data were examined and found to be too focused on present day distribution to be of use in predicting past wildlife patterns.

4) Slope

Known sites were analyzed in terms of slope by plotting known sites at 1:20,000 scale and recording degree of slope. A sliding scale of potential value was then assigned to landforms with different slope depending on correlation with known sites.

Slopes were divided in 15% increments. It was found that the majority of sites (63%) occur on 0-14% slopes. Twenty percent of sites occur on 15-29% slopes, 8% on slopes less between 30-44% and 4% on slopes 45-59%. Few sites occur on steeper slopes with only 5% on slopes greater than 59%. These latter sites present a problem in that they are reported from slopes which are usually considered too steep to contain archaeological sites.

To examine this issue, the site records for the twelve sites with habitation components (features thought to be associated with gentle slopes) were examined. Many of these records were too incomplete to yield useful information. Several of these sites are recorded on small terraces near the Fraser River and often immediately adjacent to smaller drainages. For example, FaRn 24 is located on a terrace 4 m above Pablo Creek and 150 m from the Fraser. Site boundaries were also noted to extend from flat terraces to the edge of steep slopes. This could easily result in the site being plotted on the slope rather than the flat. One site (FaRn 41) notes that materials are eroding from a steep bank. Therefore, though the site was on level ground when occupied, subsequent erosion has exposed deposits in currently steep terrain.

Records of nine sites with cache pits but lacking house pits apparently situated on steep terrain were also examined. Where detailed data were available, errors in plotting were similar to the house pit sites. ElRn 19, FaRn 17 and FaRn 34 are located at terrace edges. FaRn 13 is located at the edge of a terrace above the Fraser and a secondary drainage.

Records of nine lithic scatters not associated with cache pits or house pits were also examined. These data were found to be similar to cache pit and house pit data with some exceptions. FaRn 38 is an isolated late period projectile point recorded on a steep slope and EkRf 6 is a quarry site. Both these site types can be expected to occur on any grade of slope.

In general it is thought that slope can be effectively used to model archaeological site occurrence if certain modifications are made. A number of site types can be expected to occur regardless of slope such as isolated artifacts and roasting pits while some such as rock art are often positively correlated with steep slope given that many pictographs are found on vertical rock faces.

5) **Topography**

Known sites were analyzed by identifying their association with topographic features such as terraces, knolls, gullies or other terrain features. Those features which have high correlation with known site presence received the highest ratings.

It is important to note that not all the above variables have equal weight in determining archaeological potential and the relative importance of each variable was determined by analysis of correlations with known sites. Different weights were assigned variables so that appropriate potential could be determined.

Through this analysis, it was determined that two line rivers and lakes have the strongest positive correlation both with known site locations and concurrence with the ethnographic record. It was determined that slope alone was not useful in determining potential but was useful in modifying potential and was valued accordingly.

4. Results

4. I Introduction

A great deal of data has been collected concerning the study area including community information from First Nations, historical and ethnographic information about trails, archaeological site information, biological, geological, hydrological and geographic data. However, it is apparent that important information gaps remain. Many data sets, particularly archaeological, ethnographic and ethno-historical information about areas removed from major drainages are unavailable. A variety of strategies were used to address these data gaps.

Collected data include information concerning 767 archaeological sites within the study area and approximately 400 additional sites from the study area vicinity. Detailed information on site attributes derived from site records and reports, detailed information about factors in the physical environment associated with known archaeological sites and information from both historical and ethnographical sources about site placement was collected and quantified.

A model of archaeological potential was developed from these data. Four categories of potential were employed in the final model. Zones of archaeological potential identified in the mode1 encompass 99% of the known archaeological sites within the study area. The mode1 captures 84% of the recorded archaeological sites in a narrow class 4 (high) potential buffer around key features. A wider class 3 (high-moderate) buffer captures an additional 8% of the known sites, while a comparatively wide class 2 buffer (moderate) captures an additional 2% of recorded sites. Less than 5% of known sites fall into the class 1 (low) area which encompasses the remainder of the project area and cannot be effectively modeled with current data and archaeological knowledge. It should be noted that while the majority of known sites is recorded within zones of potential, some sites do fall outside of potential zones. Sites falling outside potential zones were then re-examined to determine possible factors which may have been overlooked in the model, It is emphasized that only a small portion of the study area has been systematically surveyed and likely the majority of archaeological sites within the project area are not yet recorded.

It should be noted that the model has been balanced between including the maximum number of sites within zones of potential and creating zones of differing site density. As a result, some sites in unusual locations have been excluded. In some cases these locations may be a result of map errors on site form data. In other cases the locations may be a result of factors that cannot be addressed through this broad based model. When large-scale computer based models are applied, results are necessarily general. It is thought that this can be addressed through community information and First Nation consultation.

Most recent survey work within the project area has been heavily influenced by the forest industry The result again is an apparent skewing of survey and site recording within areas of “good” timber, frequently at forested lower elevations in proximity to water sources. However, the archaeological database should broaden as more forestry related survey is undertaken in the project area. The percentage of smaller, less complex sites such as CMTs, resource procurement and small lithic scatters that represent specialized activities will likely become better represented. For now, the general lack of survey in high elevation areas continues to represent a gap in the data used for this overview.

A series of paper maps were produced modeling archaeological potential for the study area based on 1:20,000 information. These maps allow resource managers to easily assess the archaeological potential of proposed developments. This mapped potential when combined with a program of First Nation consultation allows for effective resource planning.

Site types identified by the communities included almost all those presently represented on provincial records for the study area. Total number of point or polygon community based archaeological site points plotted are summarized below. At the time of AOA completion the Soda Creek First Nation did not wish to have their community based archaeological information included. The data is in digital format as generated by the Soda Creek First Nation.

Studies conducted with the Williams Lake First Nation identified 75 locations identified as either possible archaeological sites or trails. Of these, 48 could be accurately plotted. Studies conducted with the Canoe Creek First Nation identified 72 locations identified as either possible archaeological sites or trails. Of these, 46 could be accurately plotted. Studies conducted with the Canim Lake First Nation identified 77 locations identified as either possible archaeological sites or trails. All were plotted.

4.2 Trail *Information*

At contact. a network of Native trails crosscut the study area. These routes were an important means for travel and trade throughout the Cariboo and surrounding regions. connecting important trade and/or salmon fishing centers, villages, camps and procurement areas. As well, these trails served as significant travel/trade corridors linking the interior peoples with those who resided in the coastal regions to the west. Most of the trails described in the literature are major trails that traversed more than one band territory. The many minor trails that ran through every band territory in the study area are not described in the literature. Many of the major Native trails were later utilized by fur traders, prospectors, and ranchers, with some being expanded to accommodate wagon traffic. Eventually some of these trails became roadways (Alexander 1997: C-l).

The following is a summary of the major trails that ran through the study area (Alexander 1997).

> Tzenzaicut Lake to Fort Alexandria: In 1920, W.C. Merton (surveyor) notes: "Running down South Creek [Baker Creek] is an old Indian trail This trail follows South Creek [Baker Creek] to its headwaters; then crosses a low divide [at Lot 9166] to the headwaters of Narcosli Creek and runs on to Alexandria" (B.C. Department of Lands 1929: 132, see also page 153). In 1921, he notes: "A good trail follows Mertson Creek to Tzenzaicut Lake; thence along the northern shore of the lake and continues on to Narcosli Creek, where it joins the Fraser River Wagon-road at McComb's place (Lot 9529). This trail was followed from the east end of the lake to Alexandria..." (B.C. Department of Lands 1929: 153).
>
> Puntzi Lake to Fort Alexandria: Palmer (1863: map) included this trail as part of his route from the coast to Fort Alexandria (see also Tyhurst n.d.: 193; Fumiss 1993a:45). G. Jorgensen (1892: surveyor General Branch, 37T1) mapped a branch of this trail that Led to Quesnel. An "old Hudson Bay trail" ran from Narcosli Creek to Alexis Creek, joining the Upper Chilcotin to Alexandria (B.C. Department of Lands 1929: 119). Trails were cut between Fort Alexandria and the Chilcotin by the fur trade companies, primarily for the winter (Morton 1992: 81). Anderson's 1867 map

(Surveyor General Branch, 3 Locker I) also shows the route from Fort Chilcoten to Fort Alexandria.

Chilanko River to Soda Creek: This trail goes south from the Fraser River to Riske Creek, follows the north bank of the Chilcotin River to the Chilanko River where it crosses the river and follows the north bank of the Chilanko River (Dawson 1877: 234-37). Poudrier (1891a) extended this trail to Quesnel. G. Jorgensen (1892: Surveyor General Branch, 37T1) also provided a map of this trail.

Kanceville to Bridge River: Tyhurst (n.d.: 193) notes a series of trails in the Big Creek drainage linking the Chilcotin River to Chilko Lake and Bridge River. Lane describes some of the same trails: "One leads from Taseko Lake, to the southeast down onto the Bridge River. Another passes from the headwaters of Big Creek to the Bridge River. A third leaves the Plateau and passes down the Yalakom River, which eventually joins the Bridge River not far from the Fraser. In addition there are numerous trails joining the main north-south trails, and there are various alternate entrances to the mountains."

Fort Alexandria to Little Fort (55 miles [88.5 km] above Kamloops, on North Thompson): This trail is part of the Hudson's Bay Company Brigade Trail, and use by the fur traders began as early as 18 13. It is highly likely that this trail followed an old Native trail. Use of this trail declined after 1842 when a new fur trade trail was placed along the north side of Kamloops Lake, and then north through Deadman's Creek (Forsman 1995:1-3; Morton 1992: 137). Up to 300 horses were used by the HBC on this route. One branch ran into the north side of the North Thompson River to Eakin, Lac des Roche Bridge Lake and Horse Lake, to the Fraser (Morton 1992: 80). Patenaude (1995: xiii) mapped a branch of this trail that goes to Clinton. The trail is also recorded on Anderson 1867 map (Surveyor General Branch, 3 Locker I).

Canim Lake to the Thompson River: This trail is also known as the Old Clearwater Trail. In 1912, A.J. Campbell (surveyor) notes that this trail, "*after* following down the valley of Spanish Creek, crosses Deception [Creek] about a mile [1.6 km] south of the 52nd base-line, then runs in a south-westerly direction to Marten Creek [Hendrix Creek], crossing that about 4 miles [6.4 km] below the line. It still follows the same direction, crosses Boss Creek, and comes out on Canim Lake at the mouth of Canim Creek [Eagle Creek]. From there it follows the near shore until it joins the

Canim Lake Wagonroad. A branch from this about two miles [3.2 km] east of Marten Creek [Hendrix Creek] runs south to the east end of Canim Lake. There is also a good trail along the south side of Canim Lake" (B.C. Department of Lands 1929: 44).

Cariboo Wagon Road: This road was cut in the 1860s to service gold miners at Barkerville. It ran from Pavilion to Clinton and Lac la Hache, and then north to Soda Creek, Quesnel and Barkerville. The route has been plotted by many including G. Jorgensen (1892: Surveyor General Branch, 37T1); Harper (1974: 13); Downs (1973: map); Patenaude (1995: xii); Forsman (1995); and Poudrier (1891a). Anderson's 1867 map (Surveyor General Branch, 3 Locker I) also included a trail from Pavilion along the Fraser River to Quesnel.

Cariboo Wagon Road to the Fraser River: A series of trails ran from the wagon road to Alkali Lake, Canoe Creek and Dog Creek. These trails were plotted by G. Jorgensen (1892: Surveyor General Branch, 37T1); Patenaude (1995: xii); Anderson (Surveyor General Branch, 20T3). Trails near Williams Lake were also plotted on a map (Surveyor General Branch, 5T2). Portions of these routes may not have existed prior to contact.

Lac la Hache to Quesnel Lake: G. Jorgensen (1892 Surveyor General Branch, 37T1) provided a map of this trail. J. Tumbull (1860: Surveyor General Branch 20T3) also plotted the start of the trail. The northern section of this trail followed waterways; the southern section was overland.

Williams Lake to Quesnel Forks: This trail, which was used as an early route to the Cariboo gold fields, was mapped by G. Jorgensen (1892 Surveyor General Branch, 37T1), Harper (1974:13); Downs (1973: map), and Anderson (Surveyor General Branch, 3 Locker I). This route may not have existed prior to contact.

Quesnel Forks to Barkerville: This trail. which was used as an early route to the Cariboo gold fields, was mapped by G. Jorgensen (1892 Surveyor General Branch, 37T1), Harper (1974:13); Downs (1973: map), and Anderson (Surveyor General Branch, 3 Locker I).

Beaver Creek to Alexandria and Soda Creek: These two trails. which were used as early routes to the Cariboo gold fields, were mapped by Harper (1974: 13), and Patenaude (1995: xiv). These routes may not have existed prior to contact.

Although each trail has sections within the study area, many of the trails are not entirely within the study area. For the most part all the trails followed set waterways, with some minor overland areas, however, the trail from Beaver Creek to Alexandria was basically overland, as was the Williams Lake to Quesnel Forks. The Cariboo Wagon Road had a number of overland sections between Pavilion and Lac la Hache where the road detoured from the Fraser to avoid sections of treacherous terrain between Pavilion and Williams Lake River.

4.3 Pofenfial Zones

This section briefly describes potential zones including rationale for determination of buffers around cultural and natural features and the near analysis results for these buffers. Each important variable used in model creation is discussed individually.

4.3.1 Archaeological Sites

Problems with plotting and site records resulted in the elimination of a number of records from the regional database. A database of 767 sites in and adjacent to the study area was used in the model.

1) 250 m around sites defined as points defines the high potential buffer (subtract areas with slopes greater than 60%)
2) 250-500 m from sites defined as points defines the medium potential buffer (subtract areas with slopes greater than 45%)
3) 500 m from sites defined as polygons further defines the high potential buffer (subtract areas with slopes greater than 45%)

The high potential buffer of 250 m around recorded sites is intended to address the possibility of unrecorded resources near the recorded site. This buffer is considered appropriate since site boundaries are often not well-established, especially for sites recorded prior to the mid 1980s. Also, CMTs associated with sites were rarely recorded before 1992 and the proposed buffer is expected to include many such features.

‘The 250-500 m medium potential buffer around recorded sites addresses increased archaeological potential resulting from intensive use of an area.

A 500 m buffer is proposed around sites defined as polygons. The polygon indicates presence of a large complex site, typically a village. A village site not only has activities occurring within the village, but is expected to have activities such as resource procurement occurring nearby. Thus the potential for trails, small lithic scatters and isolated artifacts is higher near a village. The use of a different buffer for small and large sites is intended to address sites which have a higher intensity of use such as large villages and sites which may have large dispersed resource clusters such as CMTs and quarries.

Initially the model was run without subtracting slope. On examination of the check plots it was found that a number of steep areas near sites were plotted as having very high archaeological potential. As a result, a decision was made to subtract steep slopes while leaving flat and more gradual slopes within the buffer. This resulted in 16 sites plotted on slopes greater than 60% being eliminated from the 250 m buffer around known sites and nine sites eliminated from the 250-500 m buffer.

Two hundred and fifty one sites are captured within the 250 m buffer around known sites. Site density is high within the 250 m buffer and actually increases at 250 m. The 250-500 m buffer from known sites captures an additional 150 sites with a general decrease in site density over distance. Expanding the buffer to 1 km would result in an additional 124 sites being captured in decreasing numbers with distance. The majority of these sites are captured by other buffers and thus an expansion of buffers around known sites is not necessary. However, it should be noted that the presence of sites raises site potential over a wide geographic area.

4.3.2 Rivers and Streams

A decision was made to use TRIM water as opposed to mapping fish potential or stream gradient. Present fish distribution was examined and found to be difficult to use and possibly not a good predictor of past fish potential. It was thought that human activities over the past 150 years and climatic changes over the 10,000 years have substantially changed the fish potential of river systems. It was found that the TRIM data was of adequate accuracy and easily accessible. An attempt was made to assign some level of archaeological potential to all non-steep water courses. This takes into account many past hydrologic features.

4.3.2.1 Two line rivers

1) O-100 m from two line rivers defines high potential (do not subtract slope)
2) 100-500 m from two line rivers defines high potential (subtract areas with slopes greater than 45%)
3) 100-500 m from two line rivers defines moderate potential (areas with slopes between 45% and 60%)
4) 500-1000 m from two line rivers defines high-moderate potential (subtract areas with slopes greater than 45%)
5) 1000-1500 m from two line rivers defines moderate potential (subtract areas with slopes greater than 30%)

The 100 m buffer from two line rivers regardless of slope addresses resources dependent on proximity to rivers but not affected by slope such as fishing stations and rock art. This buffer includes small terraces which are not mapped on 1:20,000 maps (including partially eroded terraces). The two 100-500 m buffers from two line rivers excluding greater than 60% slope captures sites located on the first terrace along major rivers while excluding the steep slopes which often define the terrace. The 500-1000 m buffer includes sites located on second and third terraces above major river systems. Important village sites have been identified in these locations. The 1000-1500 m buffer was established to capture sites removed from but possibly still associated with large river systems. This buffer captures sites located near seasonal drainages on third terraces above major river systems.

A total of 259 sites are captured in double line river buffers. Of these, 106 sites are within the 0-100 m high potential buffer. The 100-500 m high potential buffer excluding greater than 45% slopes captures 62 sites. The 100-500 m high-moderate potential buffer (slopes between 45% and 60%) captures three additional sites. Twelve sites are from the two 100 m-500 m buffers based on slope. The 500-1000 m high-moderate potential buffer captures 44 sites and excludes eight sites based on slope greater than 45%. The 1000-1 500 m moderate potential buffer captures 44 sites and excludes six sites based on slope.

4.3.2.2 Single line rivers

1) O-100 m from single line rivers defines high potential (subtract areas with slopes greater than 60%)
2) 100-250 m from single line rivers defines high-moderate potential (subtract areas with slopes greater than 45%)
3) 250-500 m from single line rivers defines moderate potential (subtract slopes greater than 30%)

A total of 502 sites are captured in single line river buffers. double the number than for double line river buffers. This is likely due in part in the abundance of this size of river in the study area compared to double line rivers, Many of these sites are also captured in double line river buffers. The O-100 m buffer captures 262 sites with 13 sites excluded based on slope. One hundred thirty-six sites are captured in the 100-250 m buffer with *ten* sites excluded based on slope. The 250-500 m buffer captures 104 sites but excludes 28 sites based on slope.

4.3.2.3 Intermittent streams

1) O-150 m from intermittent streams defines high-moderate potential (subtract areas with slopes greater than 45%)
2) 150-300 m from intermittent streams defines moderate potential (subtract slopes greater than 30%)

The buffer around intermittent streams addresses the known archaeological potential of such features as well as the possibility that such streams may have had more substantial flows in the past. Subtraction of potential zones on the basis of steep slopes limits mapping of steep areas with occasional run-off as areas of high potential.

Two hundred seventy-nine sites are captured in buffers associated with intermittent drainages. In the high-moderate potential zone, 168 sites are captured and 20 are excluded based on slope whereas in the moderate potential zone, 111 sites are captured and 41 are excluded based on slope. Given the common occurrence of intermittent streams in the study area, it is clear that intermittent streams are of lower predictive significance than double and single line rivers. However, intermittent drainages are still important in determining archaeological potential with substantial numbers of associated sites.

4.3.3 Lakes

4.3.3.1 Around lakes larger than 1000 ha

1) O-100 m from large lakes defines high potential (do not subtract slope)
2) 100-400 m from large lakes defines high potential (subtract slopes greater than 45%)
3) 400-1000 m from large lakes defines high-moderate potential (subtract slopes greater than 45%)
4) 1000-1500 m from large lakes defines moderate potential (subtract slopes greater than 3 0%)

Large named lakes are known from ethnographic and archaeological information to have high archaeological potential. The O-100 m buffer is intended to capture sites immediately associated with the lake. The 100-400 m buffer and 400-1000 m buffer subtract slopes in a similar rationale as applied to the two-line river buffer while the 1000-15000 m buffer accounts for reduced potential but also accounts for activities removed from the expected core area of use.

A total of 140 sites were captured 'by the large lake buffers. The majority (84) of these sites were captured by the 100 m buffer. Twenty-four sites were captured in the 100-400 m buffer and one was excluded due to slope. Twenty-three sites were captured in the high-moderate buffer with one site excluded. Ten sites were captured in the moderate buffer with one excluded due to slope.

4.3.3.2 Around lakes 100-1000 ha

1) O-100 m from medium sized lakes defines high potential (do not subtract slope)
2) 100-300 m from medium sized lakes defines high potential (subtract slope greater than 45%)
3) 300-500 m from medium sized lakes defines high-moderate potential (subtract slopes greater than 45%)
4) 500-1000 m from medium sized lakes defines moderate potential (subtract slope greater than 30%)

One hundred twenty sites were captured around medium sized lakes. Given the greater number of medium sized lakes compared to large lakes, it is clear that medium sized lakes have somewhat lower importance in site prediction. Seventy-four sites are within the 100 m buffer. Nineteen sites are within the 100-300 m potential buffer. Eight sites are within the 300-500 m buffer with one site excluded due to slope. Nineteen sites are within the 500-1000 m buffer.

4.3.3.3 Around lakes 5-100 ha

1) O-50 m from small lakes defines high potential (subtract slopes greater than 60%)

2) 50-150 m from small lakes defines high-moderate potential (subtract slopes greater than 45%)
3) 150-500 m from small lakes defines moderate potential (subtract slopes greater than 30%)

Steep areas around lakes are excluded from the potential model. However, moderately sloped areas are buffered to include lakeshores, terraces and bluff tops near the lake.

In high potential areas, 25 sites are captured in the O-50 m buffer zone. In the 50-150 m high-moderate potential buffer zone, 24 sites are captured and one site is excluded based on slope. Thirty-six sites are captured in the 150-500 m moderate potential zone and five sites are excluded based on slope.

4.3.3.4 Around lakes <5 ha

1) O-150 m from very small lakes defines high-moderate potential (subtract slopes greater than 30%)
2) 150-500 m from very small lakes defines moderate potential (subtract slopes greater than 30%)

In the high-moderate potential buffer, 46 sites are captured by the model and three sites are excluded due to slope. One-hundred eighteen sites are within the moderate potential zone with 15 sites excluded on the basis of slope.

4.3.3.5 Wetlands

1) O-50 m from wetlands define high-moderate potential (do not subtract slope)
2) 50-150 m from wetlands define moderate potential (do not subtract slope)

Some thought was given to applying different buffer sizes to large and small wetlands. However, because wetlands intersect along stream systems, abnormally large wetlands would occur and would be given buffers disproportionate to their archaeological potential. As applied in the present model, buffers include the edges of marshy areas including former lakes. Because steep slopes usually indicate the presence of knolls or terraces. slope is not subtracted from wetland areas.

Wetlands include two different types including large (>5 ha) and small (<5 ha). Large wetlands captured 47 sites in the O-50 m buffer and 35 in the 50-150 m buffer. Small wetlands captured 25 in the O-50 m buffer and 40 in the 50-150 m buffer suggesting a higher predictive importance for large wetlands. Based on site distribution, areas beyond 150 m of wetlands do not have importance in terms of site prediction.

4.3.4 TRIM Eskers

1) O-100 m from TRIM eskers defines moderate potential (subtract slopes greater than 45%)

Eskers indicate changes in landform and are of moderate archaeological significance.

Only one site was captured with the TRIM esker buffer,

4.3.5 TRIM Cliffs

1) O-100 m from TRIM cliffs defines moderate potential (subtract slope greater than 60%)

Cliffs have some potential as rockshelter locations when in the vicinity of other resource classes. There is also potential for rock art sites.

Cliffs were not modeled in the near analysis. However, buffers are considered adequate.

4.3.6 Intersections

Because the combination of variables increased archaeological potential, areas of intersecting potential were changed in tenns of their final rating. For example, an area between 150-300 m from intermittent streams is considered of moderate potential. However, if the same area is also within 250-500 m of known sites. also defined as medium potential, it is then logical that potential of the specific area is raised.

Buffers around areas of intersecting potential are as follows:

1) Areas of intersecting moderate/high potential areas become high potential.
2) Areas of intersecting moderate-high/moderate potential areas become high potential.
3) Areas of intersecting moderate potential areas become high-moderate in potential.

4.3.7 Forest Cover

Use of forest cover as a predictive variable for archaeological sites has a relatively low predictive value compared with variables outlined above. However, for certain specific resource classes, particularly certain types of CMTs, use of forest cover is potentially of greater utility. However, CMT distribution in the study area is still too poorly documented to employ forest cover as a predictive variable. However, it appears that some specific forest cover data can be used to predict the potential for bark stripped cedar CMTs. Due to the limited cedar distribution in the study area, relatively few areas have potential for this resource. Lodgepole pine CMTs are more commonly present in the study area but the wider distribution of this species makes modeling of potential based on forest cover alone too broad. Whitebark pine is anecdotally associated with roasting pits. However, available data are not sufficient to test this hypothesis. Six sites have been recorded as containing roasting pits. One of these is a large ethnographic village, a second is a multi-purpose campsite and a third may represent a limited activity site although the record is too fragmentary to provide adequate data. The three remaining sites have detailed vegetation descriptions which do not mention white bark pine.

A number of theories have been developed regarding the relationship between dominant vegetation species and archaeological site placement. It is attractive to choose an easily represented variable such as vegetation type and look at its correlation with site placement. However, there are problems with this approach. For example it is apparent that a disproportionate number of archaeological sites are present in the Bunchgrass bio-geoclimatic zone. These sites are some of the largest and most archaeologically significant in the study area. However, these sites are generally located in proximity to the Fraser River and its tributaries and the focus of the sites is in large part directed to the procurement of salmon. Thus, the important variable is seen as the watercourse rather than the biogeoclimatic zone.

4.3.8 Summary of Potential Zones

When the entire model is run, of the 767 sites accurately plotted within the study area, 648 sites (84%) fall within areas of high archaeological potential, 63 sites (8%) fall within zones of high-moderate potential, 18' sites (2%) fall within areas of moderate potential and 38 sites (5%) fall within areas of low potential. When discrepancies in slope based on plotting and site recording are considered, the actual number of sites in low potential areas is closer to 3% of all known sites.

In terms of the geographical area encompassed by each potential zone, the following table illustrates site density in each potential zone and also shows the total surface area of each potential zone both as an absolute size and as a percentage of the entire area. It can be seen that site density is higher the higher the potential rating. Forty three per cent of the study area is considered of low potential. High potential is the second largest potential zone at 29% of the study area. However, site density in this zone is six times higher than the high-moderate zone and therefore it is assigned with some confidence. Eighty four per cent of known sites are in high potential zones, partially reflecting past survey coverage focussing on the most likely areas to contain sites.

Table 1: Site Distribution by Potential Zone

Potential	No. of Sites	% Sites	Size (ha)	% Area	Sites per ha	Sites per km
High	648	84	1,074,370.7	29	0.00060314	0.06031438
High-moderate	63	2	620,596.8	17	0.00010152	0.01015152
Moderate	18	5	419,018.1	11	0.00004296	0.00429576
Low	38		1,537,042.6	43	0.00002472	0.00247228
Total	767		3,651,028.2			

A summary of sites captured for each variable is presented in Appendix A.

5. Recommendations

5.1 Management Recommendations

The model produced for this overview is a model of archaeological site potential. Archaeological sites are locations on the landscape which contain physical evidence of past human activity. Such sites include a variety of resources including scatters of stone tools (lithic scatters), habitation remains (such as house depressions), and trees which have been modified through cultural processes. All archaeological sites pre-dating 1846 are protected under current heritage legislation while later sites are protected on a case by case basis. Information regarding archaeological site protection can be obtained from the Archaeology Branch of the Ministry of Tourism, Small Business and Culture.

This model is designed to solely address the physical evidence of past human activity and does not address traditional use or other concerns. Some archaeological sites may overlap with traditional use sites but these are separate resources and archaeological information and research should not be confused with traditional use studies. Similarly, traditional use studies should not be confused with archaeological studies.

These recommendations are made based on current archaeological knowledge and may be subject to revisions. Many of the areas mapped are poorly understood archaeologically and map information is based on hypothesised settlement and land-use models supplemented by small samples of site information. Much of the information on recorded sites is of poor quality and site locations and descriptions may be inaccurate. Additionally, likely only a small &action of the sites present in the project area have been recorded.

The model developed uses four classes of archaeological potential. Class 4 or *high potential* areas are those areas most likely to have archaeological sites, Class 3 or *high-moderate potential areas* are less likely to have sites, Class 2 or *moderate potential* areas are less likely *than* Class 3 *areas* to have sites, and Class 1 or *lowpotential* areas are the least likely to have archaeological sites. It must be noted that archaeological sites have been found in all areas including Class 1 areas. The following recommendations are made for the four class areas based on current archaeological knowledge.

High Potential (Class 4) **Areas:** These areas include areas with a proven heritage potential such as the Fraser River valley. Eighty-four percent of known archaeological sites occur in this potential zone. Projects conducted in this area can be expected to encounter archaeological sites. As a result, full archaeological impact assessments conducted under provincial permit and First Nation permit (if appropriate) are recommended for any project whose boundaries intersect this potential zone.

High-Moderate (Class 3) Areas: These areas are also of high archaeological potential although known site densities are considerably lower than *high potential* (Class 4) areas. Eight percent of known archaeological sites have been recorded in this potential zone. Projects in these areas are likely to encounter sites but at lower densities than in high potential (Class 4) areas. As a result, archaeological field reconnaissance conducted under provincial permit and First Nation permit (if appropriate) is recommended for any project occurring within or intersecting the boundaries of this potential zone.

Moderate Potential (Class 2) Areas: These areas are of lower archaeological potential than Class 3 and Class 4 areas although significant numbers of archaeological sites have been recorded in them. Within the project area, Class 2 areas occupy approximately three times the area of Class 3 areas and have approximately one third the number of sites. This suggests that site density in these areas may be one ninth that of Class 3 site density. However, these areas have seen relatively limited archaeological research and the range of site types recorded seems limited. Site types reported in Class 2 areas include temporary use and limited activity sites such lithic scatters and occasionally large intensively used habitation sites. One CMT site has been recorded.

It is recommended that all projects falling within *moderate potential* (Class 2) areas be reviewed through map study by a qualified archaeologist in consultation with appropriate

First Nations to determine the necessity for further archaeological work. Receipt of a provincial permit allows for subsurface testing if it is considered necessary.

Low Potential (Class 1) Areas: These areas are considered least likely to contain archaeological sites. Less than 3% of all recorded sites in the study area are reported from Class 1 areas when slope based data discrepancies are subtracted. Known sites were not included in the model as it was run. However, all known sites are plotted and potential buffers established around each site. Thus, operationally the model will capture known sites in otherwise low potential (Class 1) areas. However, very little archaeological research has been undertaken in Class 1 areas and site density may be higher than presently documented.

It is recommended that developments in low potential (Class 1) areas be reviewed by First Nation consultation. Review should focus on the possibility of atypical resources or landforms present in the development area and also seek information concerning possible use from knowledgeable First Nation consultants. It may be appropriate in some circumstances to obtain an opinion from a professional consulting archaeologist with experience in the area. Based on this examination, recommendations for further archaeological work may arise.

5.2 Additional Recommendations

There are a number of additional, more general recommendations which have emerged from this project. These recommendations address the following:

1) Continued First Nations Community information gathering and incorporation into the present data set. Each community gathered considerable archaeological information during the course of the project but clearly there is potential for significantly more data to be compiled. As well, many communities which have overlap territory with the Northern Shuswap bands will also have information pertaining to unrecorded archaeological resources within the study area. Many of the sites known to the communities and not previously recorded on provincial records are significant and

not necessarily captured in high or high-moderate zones of the model. Therefore future community information gathering would continue to enhance the AOA. In this regard, communities that did not participate in the present program should continue to be consulted regarding potential archaeological site location. Increasing the location accuracy and delineating these archaeological sites would also greatly assist in their effective management.

2) Additional ground work in the form of archaeological inventory studies would augment the present database.

It is recommended that additional information collected from future community information gathering projects, archaeological inventory studies and archaeological impact assessments be incorporated into the present AOA at a regular interval. This will allow the AOA to be refined to better aid in the management of archaeological resources as our understanding of this region grows.

5.3 Incorporation of Additional Information

As noted throughout the report, the model is based on incomplete and often relatively poor information. As more archaeological field study is undertaken and as more anthropological or cultural information resulting from TUS studies and First Nation consult&on is gathered, the model can be revised in the future.

As new archaeological sites are recorded, it is clear that buffers should be placed around these newly recorded sites as has been done with known sites in the present model.

As new sites are recorded, their locations in terms of potential zone can be compared with the model. For example, if ten new sites are added in the high potential zone associated with two line rivers and three new sites are added in the high-moderate potential zone of the same variable, then the model tends to be reinforced. However, if larger numbers of sites are found in lower potential zones, then the model needs revision. Similarly, if number of sites per hectare in individual potential zones is markedly different from that identified in the present model, it is clear that revisions are necessary.

Specific variables can be examined by comparing results in Appendix A of this report identifying sites in relation to distances from lakes, for example. Again, consistency with existing data tends to confirm the model whereas large discrepancies should be taken to suggest that revisions are necessary.

It is suggested that all sites recorded perhaps every two years should be added to the database of the present model and examined for consistency.

Cultural information can be used in much the same way as new archaeological site locations. However, these data require more careful consideration in that cultural information does not always reflect archaeological potential. For example, berry picking locales are not necessary linked with archaeological evidence and are therefore not relevant to this model. However, fishing places likely do have implications for archaeological site location and could be incorporated into the model. Ideally, these locations should be archaeologically field checked before their inclusion into model revision. Of course, these data are important in determining concerns about a specific development area.

6. Implementation Guide for the Model

The goal of the overview assessment was to provide a working model of archaeological site potential within Cariboo Tribal Council traditional territory. This guide is intended to provide specific information necessary for the implementation of the model. It should be noted that this model applies only to archaeological sites and not to traditional use sites which are a separate resource class subject to different management and possibly having a different distribution then archaeological sites.

In British Columbia, archaeological sites are managed by the Provincial Government through the Archaeology Branch (Ministry of Small Business, Tourism, and Culture).

Provincial legislation (the Heritage Conservation Act) protects specific classes of archaeological sites usually referred to as protected sites. These sites include those pre-dating 1846, Provincial heritage sites, burial places with historical or archaeological value, aboriginal rock paintings or carvings and heritage wrecks. It is an offence under the Act to alter or disturb a protected archaeological site whether previously known or not. Thus it is necessary to know the location of archaeological sites prior to the conduct of forestry activities including harvesting and road construction. Archaeological overviews have been developed to aid in this process.

To implement the model, the proposed development should be overlain on the potential map. Both digital and paper copies of the potential model have been provided. The archaeological potential can then be read directly from the map. Some developments may intersect several different potential zones particularly in the case of linear developments. Specific sections of a road may require field study while other portions could cross low potential areas. It is only necessary to cover those zones requiring field investigation, but in a practical sense, some low potential zones will be examined by gaining access to higher potential zones. This allows occasional coverage of low potential zones to confirm the model. In the case of cut-blocks, the highest potential zone within the cut block should be used as a guide to the appropriate level of field work. For example, if a small portion of a cut block is within high potential, the entire cutblock should be dealt with following recommendations for this potential zone.

Development plans should also be discussed with the appropriate First Nation(s) to incorporate First Nation information.

For high and high-moderate potential areas, work must be undertaken under provincial permit. Archaeological permits are issued by the Archaeology Branch of the Ministry of Small Business, Tourism, and Culture to professional archaeologists. A list of professional archaeologists is available from the BC Association of Professional Consulting Archaeologists. First Nation Consultation is required.

Moderate potential areas require a map study which can be done by a professional archaeologist with study area experience. These studies do not require a provincial permit but should involve First Nation consultation.

Low potential areas do not require archaeological work. However, relevant First Nation(s) should be consulted about developments.

References Cited

Alexander, Diana

1987 A preliminary inventory and assessment of archaeological resources on Bald Mountain, southwestern British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 A reconstruction of traditional land use patterns in the mid-Fraser River area based on ethnographic data. In A complex culture of the B.C. Plateau: traditional *Stl'át'imx* resource use, edited by B. Hayden, pp 98-176. UBC Press, Vancouver.

1996 A cultural heritage overview of the western half of the Williams Lake Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1997 A cultural heritage overview of the Cariboo forest region. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Arcas Consulting Archaeologists Ltd.

1995 Archaeological impact assessment, proposed logging development, Williams Lake Forest District, near Williams Lake B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Final report for archaeological impact assessments of forestry developments on the Chilcotin Plateau, 1995. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Borden, Charles E.

1969 Early population movements from Asia into western North America. Syesis 2:1-13.

1975 Origins and development of early Northwest Coast culture to about 3,000 B.C. National Museum of Man Mercury Series Paper 45. Archaeological Survey of Canada, Ottawa.

Burnard-Hogarth, L.

1983 Ethnoarchaeological investigations in the Chilcotin region of B.C. summer, 1983. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Bussey, Jean
1983 Alexis Creek archaeological investigations. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Bussey, Jean and Diana Alexander
1992 Archaeological assessment of the Caribou Forest Region Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Carl. Alan
1972 Salvage archaeology at the Stafford Ranch site (FaRn 3). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Carlson, Roy L.
1983 The far west. In Early man in the new world, edited by R. Shutler Jr. Sage Publications, Beverly Hills.

Chisholm, Brian S.
1986 Reconstruction of prehistoric diet in British Columbia using stable isotope analysis. Unpublished Ph.D. dissertation, Department of Archaeology, Simon Fraser University, Bumaby, B.C.

Clague, J.J.
1981 Late Quatemary geology and geochronology of British Columbia. Geological Survey of Canada Paper 80-35, Ottawa.

Clarke, Donald W.
1981 Prehistory of the western subarctic. Handbook of North American Indians: Subarctic 6:107-129. Smithsonian Institution, Washington, D.C.

Cybulski, J. S., D. E. Howes, J. C. Haggarty and M. Eldridge
1981 An early human skeleton from south-central British Columbia: dating and bioarchaeological inference. Canadian Journal of Archaeology 5:49-60.

Dahlstrom. Bruce and Ian R. Wilson
1998 Archaeological data recovery EkRf 12. Drewry Lake, British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Dawson, George M.
1892 Notes on the Shuswap people of British Columbia. Papers for 1891. Transactions, Royal Society of Canada, Section II, pp. 2-34. Dawson Brothers, Montreal.

Dewhirst, John
1993 An aboriginal sustenance impact assessment study of the Quesnel River gold development project, near Quesnel, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Fladmark, Knut R.
1982 An introduction to the prehistory of British Columbia. Canadian Journal of Archaeology 6:95-156.

Fumiss, Elizabeth
1993 Dakelh kevoh-the Southern Carrier in earlier times. Quesnel School District, Quesnel.

Glavin, Terry
1992 Nemiah. the unconquered country. New Star Books, Vancouver.

Grabert, Garland F.
1974 Okanagan archaeology. Syesis 7, Supplement 2.

Ham, Leonard
1975 Shuswap settlement patterns. Unpublished M.A. thesis, Department of Archaeology, Simon Fraser University, Burnaby, B.C.

Harmon, D. W.
1957 Sixteen years in the Indian country. The journal of Donald William Harmon 1800-1816, edited by W. Kaye Lamb. The MacMillan Company of Canada Ltd., Toronto.

Hebda, Richard J.
1982 Postglacial history of grasslands in southern British Columbia and adjacent regions. In Grassland ecology and classification: symposium nroceedines, edited by A.C. Nicholson, A. McLean and T.E. Baker, pp. 157-194. Ministry of Forests, Victoria.

1986 Preliminary postglacial environmental history of the Highland Valley. In Excavations at Valley Mine, Highland Valley, B.C., by Arcas Associates. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Helmer, James A.
1977 Site dispersal in the Blackwater Valley: theoretical perspectives and preliminary synthesis. In Annual Report for the year 1975, activities of the Archaeological Sites Advisory Board of B.C. and selected research reports. Queen's Printer, Victoria.

Hewer, Tony G.
1995a Archaeological inventory and impact assessment, Williams Lake M.O.F cut blocks, salvages, and silvicultures. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Hewer, Tony G. (*continued*)

1995b Archaeological inventory and impact assessment, Horsefly M.O.F. woodlots. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995c Archaeological inventory and impact assessment, forestry cut blocks, east of Fraser River, Williams Lake District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996a Archaeological inventory and impact assessment, Timber West Forest Ltd. beetle kill salvages and cut blocks. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996b Archaeological overview assessment, Chilcotin Forest District, south of Chilcotin River, east of Taseko River, final report. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Holland, S.S

1976 Landforms of British Columbia: a physiographic outline. Bulletin of the British Columbia Deoartment of Mines and Petroleum Resources 48, Ottawa.

Howe, Geordie

1994 Archaeological impact assessment, proposed logging developments, Williams Lake Forest District, near Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Howe, Geordie and Mike Brand

1995 Archaeological impact assessment, proposed logging developments, Williams Lake Forest District. near Hanceville, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Jenness, Diamond

1943 The Carrier Indians of the Bulkley River: their social and religious life. Bureau of American Ethnology Bulletin 133, Anthropological Paper 25:469-586. Smithsonian Institution, Washington, D.C.

Keddie, Grant

1972 The Chilcotin xchaeological and ecological survey report. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Kenny, Ray A.

1972 Preliminary report Deep Creek site (FbRn 13). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Kew, Michael

1974 Nazko and Kluskus: social conditions and prospects for the future. Unpublished manuscript prepared for the Nazko-Kluskus Study Committee, Nazko, B.C. On file at UBC.

Kuijt, Ian

1989 Subsistence resource variability and culture change during the middle-late prehistoric cultural transition on the Canadian Plateau. Canadian Journal of Archaeology 13:97-118.

Lane, Robert B.

1953 Cultural relations of the Chilcotin Indians of west central British Columbia. Unpublished Ph.D. dissertation, Department of Anthropology, University of Washington, Seattle.

1981 Chilcotin. Handbook of North American Indians: Subarctic 6:402-412, edited by June Helm. Smithsonian Institution, Washington D.C.

Lawhead, Stephen

1979 Salvage archaeology project, May-August 1978. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Magne, Martin

1984 Taseko Lakes prehistory project: report on a preliminary survey. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1985a Taseko Lakes prehistory project, phase II: preliminary excavations, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1985b Lithics and livelihood: stone tool technologies of central and southern interior British Columbia. National Museum of Man. Mercury Series, Archaeological Survey of Canada Paper 133, Ottawa.

1985c Taseko Lakes prehistory project: a preliminary report. The Midden XVII(3):10-12.

Magne, Martin and R.G. Matson

1982 Identification of "Salish" and "Athapascan" side-notched projectile points from the Interior Plateau of British Columbia. In Approaches to Algonquian archaeology, edited by M.G. Hanna and B. Kuyman. The Archaeology Association of the University of Calgary, Calgary.

Magne, Martin and R.G. Matson (continued)

1984 Athapaskan and early archaeology at Big Eagle Lake, British Columbia. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

Mason, Andrew R.

1995 Archaeological overview of the Esketemc First Nation land claim area. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Mathewes, R.W.

1985 Palaeobotanical evidence for climatic change in southern British Columbia during late-Glacial and Holocene time. In Climatic change in Canada 5: critical periods in the Quaternary climatic history of northern North America, edited by C.R. Harrington. Syllogens 55:344-396.

Mathewes, R.W. and M. King

1989 Holocene vegetation, climate and lake level changes in the Interior Douglas fir biogeoclimatic zone, British Columbia. Canadian Journal of Earth Sciences 26(9):1811-1825.

Matson, R.G. and Leonard C. Ham

1974 Shuswap settlement pattern project. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Matson, R.G., Martin Magne and Diane Ludowicz

1979 The Eagle Lake archaeology project: the 1979 field season. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Matson, R.G., Martin Magne, Diane Ludowicz and David L. Pokotylo

1980 The Eagle Lake archaeological project: report on the 1979 season. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Merchant, Peter S.

1995 Results of archaeological investigations conducted within the traditional territory of the Nazko Indian Band on behalf of Weldwood Canada Limited, Quesnel operations, for cutting permit 8, timber harvesting blocks 2 and 3 and cutting permit 9 timber harvesting blocks 1 and 2 within the Prince George Forest District, central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Merchant, Peter S. and Mike K. Rousseau

1993 An archaeological impact assessment of Lignum Ltd.'s proposed 1993-1994 access roads and selected timber salvage sites within CP 699 near Chimney Creek, south-central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Middleton, Hugh K.

1995 Archaeological inventory and assessment of eight timber sale license areas and associated road development in the Anahim Lake timber supply block British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Mitchell, Donald H.

1964 An archaeological survey on tbe Chilcotin Plateau and in the Bella Coola Valley: interim report and recommendations, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1968 Archaeological investigations, summer 1968. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Mohs, Gordon

1972 EkRo 48: a preliminary site report. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Morice, Father Adrien G.

1895 Notes archaeological, industrial and sociological on the Western Déné with an ethnographic sketch of same, Transactions of the Canadian Institute 4: 1-222, Toronto.

Pokotylo, David L. and Patricia Froese

1983 Archaeological evidence for prehistoric root gathering on the Southern Interior Plateau of British Columbia: a case study from the Upper Hat Creek Valley. Canadian Journal of Archaeology 7(2): 127-157

Ray, Verne F.

1932 The Sanspoil and Nespelem: Salishan peoples of northeastern Washington. Universitv of Washington Publications in Anthropology 5, Seattle.

1939 Cultural relations in the Plateau of North-western America. Publications of the Frederick Webb Hodge Anniversary Fund 3, Los Angeles.

Richards, Thomas H. and Mike K. Rousseau

1987 Late prehistoric cultural horizons on the Canadian Plateau. Simon Fraser Universitv Department of Archaeoloav Publication 16, Bumaby.

Ridington, Amber and Mike Brand

1996 Final report for archaeological impact assessments of forestry developments on the Chilcotin Plateau, 1995. Culture library, Ministry of Small Business, Culture and Tourism, Victoria.

Rousseau, Mike K. and Rob H. Gargett
1987 Prehistoric resource use on Cornwall Hills summit. Midden 19(5):6-9.

Rousseau, Mike K. and Robert J. Muir
1991 Archaeological investigations at site FaRm 23: an early Shuswap horizon deer hide preparation focus, Williams Lake, south-central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Rousseau, Mike K., R. Muir, D. Alexander. J. Breffitt, S. Woods, K. Berry and T. Van Gaalen
1991 Results of the 1989 archaeological investigations conducted in the Oregon Jack Creek locality, Thompson River region, south-central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Rousseau, Mike K. and Thomas Richards.
1985 A culture historical sequence for the South Thompson River Western Shuswap Lakes region of British Columbia: the last 4,000 years. Northwest Anthropological Research Notes 19(1): l-32.

Ryder, June M.
1982 Surficial geology of the grassland areas of British Columbia and adjacent regions. In Grassland ecology and classification symposium proceedings June 1982, pp. 63-94, edited by A.C. Nicholson, A. McLean and T.E. Baker. Ministry of Forests, Victoria.

Sanger, David
1963 Excavations at Nesikep Creek (EdRk 4) - a stratified site near Lillooet, British Columbia: preliminary report. National Museum of Canada Bulletin 193:130-161.

1966 Excavations in the Lochnore-Nesikep Creek locality, British Columbia, interim report. National Museum of Canada Anthropology Paper 12.

1967 Prehistory of the Pacific Northwest Plateau as seen from the interior of British Columbia. American Antiquity 32(2): 186-97.

1968 Prepared core and blade traditions in the Pacific Northwest. Arctic Anthropology S(1): 92-120.

1969 Cultural traditions in the interior of British Columbia. Syesis 2:189-200.

1970 The archaeology of the Lochnore Nesikep locality, British Columbia. Syesis 3, Supplement 1.

Sneed, Paul

1970 Cariboo survey - 1970. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Spafford, Jim, J. Bailey and M. Rousseau

1995a Report on several archaeological. impact assessment studies conducted for Lignum Ltd. in the Williams Lake area of south central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995b Report on several archaeological impact assessment studies for Riverside Forest Products Ltd. in the Williams Lake Forest District, south central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Stryd, Arnoud

1994 AIA of forestry operations within Quesnel Forest District by C&C Wood Products Ltd., Ministry of Forests QFD, Tolko Industries, Weldwood of Canada Ltd., Canadian Forest Products Ltd., and others. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 Archaeological overview of the central portion of the Alkali Lake Band traditional territory. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Stryd, Arnoud H. and Mike Rousseau

1996 The early prehistory of the mid Fraser-Thompson River area of British Columbia. In Early human occupations in British Columbia, edited by Roy L. Carlson and Luke Dalla Bona, pp 177-256. UBC Press, Vancouver.

Teit, James

1909a Notes on the Chilcotin Indians. In The Shuswap. Memoir of the American Museum of Natural History. Jesup North Pacific Expedition 2(7):759-789. Leiden.

1909b The Shuswap. American Museum of Natural History Memoir 5, New York.

1910 Notes to maps of the Pacific Northwest. American Philosophical Society Library, Philadelphia. Boas Collection 372, Roll 4, No. 1, Item 59.

Terry, George (compiler)

[1958] History and legends of the Chilcotin. Cariboo Press, Williams Lake.

Tobey, Margaret L.

1981 The Carrier. Handbook of North American Indians: Subarctic 6:413-432. Smithsonian Institution, Washington, D.C.

Twohig, Kevin, Dan Weinberger and Ian R. Wilson
1997 Archaeological inventory and impact assessment within the traditional territories of the Canoe Creek. Soda Creek and Williams Lake Bands. Cultural library, Ministry of Small Business, Tourism and Culture, Victoria.

Tyhurst, Robert
1975-1976 Chilcotin plant, fish and animal names, and uses. Unpublished report. Copy held by B.C. Indian Language Project, Victoria.

1992 Traditional and contemporary land use and resource use by the Ts'kw'aylaxw and Xaxli'p Bands, In A complex culture of the B.C. Plateau: traditional Stl'atl'imx resource use, edited by Brian Hayden, pp. 355-404. UBC Press, Vancouver.

Walde, K., J. Gilbert and Dick Gilbert
1994 Inventory assessment of archaeological sites adjacent to roadways within the Soda Creek Reserve #1. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Weinberger, Dan
1998 Archaeological inventory and impact assessment, Riverside Forest Products Ltd. forestry developments within the traditional territories of the Canim Lake, Soda Creek and Williams Lake Bands, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Weinberger, Dan and Ian Wilson
1998a Archaeological inventory and impact assessment, UBC Alex Fraser Research Forest forestry developments within the traditional territories of the Soda Creek and Williams Lake bands. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1998b Archaeological inventory and impact assessment, West Fraser Mills Ltd, forestry developments within the traditional territories of the Soda Creek and Williams Lake Bands. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Whitlam, Rob G.
1976 Archaeology in the Williams Lake area, British Columbia. Occasional Papers of the Archaeology Sites Advisory Board of British Columbia 1, Victoria.

Williams. Jean
1974 A preliminary report salvage archaeology at the Boitanio Park site (FaRm 8). Culture library, Ministry of Small Business. Tourism and Culture, Victoria.

Appendix A

Number of Sites by Distance from Two Line Rivers According to Slope											
	Slope (%)										
Distance from Variable (m)	0	1-14	15-29	30-44	45-59	60-74	75-89	90-100	101	Total	% Total
1-100	1	41	24	13	17	6	2	1	1	106	14
101-200	2	19	4	9	1	3		1	2	41	5
201-300	1	9	3	4	1	4				22	3
301-400		5	2	1	1	2				11	1
401-500		2	1							3	<1
501-600	2	6	3	2						13	2
601-700		6		2	1					9	1
701-800	1	6	2	1					1	11	1
801-900		2	2		2	1			1	8	1
901-1000		5	1	3	1		1			11	1
1001-1100		7	2				1			10	1
1101-1200		8	1	1		1				11	1
1201-1300	1	6	2		1		1			11	1
1301-1400	2	2	1		1					6	1
1401-1500	1	3	2			1				7	1
1501-1600	40	309	96	30	4	6	1		1	487	63
Total	**51**	**436**	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	56	19	9	4	3	1	0	1		

Buffers for Two Line Rivets (as defined in section 4.3.2.1)	Sites Captured
O-100 m High Potential	106
100-500 m High Potential (subtract areas with slopes greater than 45%)	62
100-500 m Moderate Potential (areas with slopes between 45% and 60%)	3
500-1000 m High-Moderate Potential (subtract areas with slopes greater than 45%)	44
1000-1500 m Moderate Potential (subtract areas with slopes greater than 30%)	44

Number of Sites by Distance from Single Line Rivers According to Slope

Distance from Variable (m)	Slope (%) 0	1.14	15-29	30-44	45-59	60-74	75-89	90-100	101	Total	% Total
0		1								1	<1
1-50	1	122	35	20	7	5	1		2	193	25
51-100		53	16	3	4	2	2	1		81	11
101-150	5	35	13	2		2			1	58	8
151-200	2	26	13	4	2	1				48	6
201-250	2	23	5	6	3	1				40	5
251-300	2	17	3	4	2	2		1	1	34	4
301-350	4	18	7		3		1		1	34	4
351-400	2	16	4	1	4		1			28	4
401-450	2	13	3	3	1	2				24	3
451-500	2	9	2	2						15	2
>501	29	103	45	21	4	9	1		2	214	28
Total	**51**	**436**	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	56	19	9	4	3	1	0	1		

Buffers for Single Line Rivers (as defined in section 4.3.2.2)	Sites Captured
0-100 m High Potential (subtract areas with slopes greater than 60%)	262
100-250 m High-Moderate Potential (subtract areas with slopes greater than 45%)	136
250-500 m Moderate Potential (subtract slopes greater than 30%)	'04

Number of Sites by Distance from Intermittent Streams According to Slope

Distance from Variable (m)	Slope (%) 0	1.14	15-29	30-44	45-59	60-74	75-89	90-100	101	Total	% Total
1-50	2	40	22	7	1	2	1		1	76	10
51-100		29	21	7	4	2			2	65	8
101-150		22	13	5	2	5				47	6
151-200	2	26	12	7	3	3	1			54	7
201-250	1	23	9	7	4	1	1	1	1	48	6
251-300	3	29	6	5	3	3	1			50	7
>301	43	267	63	28	13	8	2	1	2	427	56
Total	**51**	**436**	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	*56*	*19*	9	4	3	1	0	1		

Buffers for Intermittent Streams (as defined in section 4.3.2.3)	Sites Captured
O-150 m High-Moderate Potential (subtract areas with slopes greater than 45%)	1 6 8
150-300 m Moderate Potential (subtract slopes greater than 30%)	111

Number nf Sites hy Distance from Large Lakes (>1000 ha) According to Slope

Distance from Variable (m)	Slope (%) 0	1-15	16-30	31-45	46-60	61-75	76-90	91-100	101	Total	% Total
1-100	13	47	15	3	3	3				84	11
101-200		9								9	1
201-300	3	4				1				8	1
301-400	4	4								8	1
401-500	2	3		2						7	1
501-600	2	3		1						6	1
601-700	1	1								2	<1
701-800	3	1			1					5	1
801-900			1							1	<1
901-1000		1		1						2	<1
1001-1100	1	2								3	<1
1101-1200		1	2							3	<1
1201-1300		1	2							3	<1
1301-1400		1								1	<1
1401-1500				1						1	<1
>1501	22	358	126	58	26	20	6	2	6	624	81
Total	**51**	**436**	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	56	19	9	4	3	1	0	1		

Buffers for Large Lakes (as defined in section 4.3.3.1)	Sites Captured
O-100 m High Potential	84
loo-400 m High Potential (subtract areas with slopes greater than 45%)	24
400-1000 m High-Moderate Potential (subtract areas with slopes greater than 45%)	22
1000-1500 m Moderate Potential (subtract areas with slopes greater than 30%)	10

Number of Sites bv Distance from Small Lakes (5-100 ha) According to Slope

	Slope (%)										
Distance from Variable (m)	**0**	1.14	**15-29**	30-44	45-59	**60-74**	75-69	90400	101	Total	**% Total**
1-50	2	18	5							25	3
51-100	1	12	2	2	1					18	2
101-150		6		1						7	1
151-200		4	1							5	1
201-250	1	5	2		1	1				10	1
251-300	1	2								3	<1
301-350	1	4								5	1
351-400	1	3	2		1					7	1
401-450	2	2	1	2						7	1
451-500		4								4	<1
501	42	376	133	61	27	23	6	2	6	676	88
Total	**51**	**436**	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	56	19	9	4	3	1	0	1		

Buffers for Small Lakes (1-100 ha) (as defined in section 4.3.3.3)	Sites Captured
0-50 m High Potential (subtract areas with slopes greater than 60%)	25
50-I 50 m High-Moderate Potential (subtract areas with slopes greater than 45%)	24
150-500 m Moderate Potential (subtract areas with slopes greater than 30%)	36

Number of Sites by Distance from Very Small Lakes (<5 ha) According to Slope

Distance from Variable (m)	Slope (%) 0	1-14	15-29	30-44	45-59	60-74	75-89	90-100	101	Total	% Total
1-50	1	14	2	1					1	19	2
51-100	1	7	3	1						12	2
101-150	1	14	3							18	2
151-200		16	4	2		1				23	3
201-250		14	4	1						19	2
251-300		13		2	1					16	2
301-350	1	8	3	3	2					17	2
351-400		14	1	2	1					18	2
401-450		18	5	1						24	3
451-500	1	12	4	1						18	2
501	46	306	117	52	26	23	6	2	5	583	76
Total	**51**	**436**	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	56	19	9	4	3	1	0	1		

Buffers for Very Small Lakes (<5 ha) (as defined in section 4.3.3.4)	Sites Captured
0-150 m High-Moderate Potential (subtract areas with slopes greater than 30%)	46
150-500 m Moderate Potential (subtract areas with slopes greater than 30%)	118

Number of Sites by Distance from Large Wetlands (>5 ha) According to Slope

Distance from Variable (m)	Slope (%) 0	1-14	15-29	30-44	45-59	60-74	75-89	90-100	101	Total	% Total
1-50	5	35	6	1						47	6
51-100	1	17								18	2
101-150	1	11	3	1	1					17	2
>151	44	373	137	64	29	24	6	2	6	685	89
Total	**51**	**436**	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	56	19	9	4	3	1	0	1		

Buffers for Large Wetlands (as defined in section 4.3.3.5)	Sites Captured
0-50 m High-Moderate Potential	47
50-150 m Moderate Potential	35

Number of Sites by Distance from Small Wetlands (<5 ha) According to Slope

Distance from Variable(m)	Slope (%) 0	1-14	15-29	30-44	45-59	60-74	75-89	90-100	101	Total	% Total
1-50	3	17	4		1					25	3
51-100		17	5	1						23	3
101-150		13	3	1						17	2
>151	48	389	134	64	29	24	6	2	6	702	92
[redacted]otal	**51**	[redacted]	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	56	19	9	4	3	1	0	1		

Buffers for Small Wetlands (as defined in section 4.3.3.5)	Sites Captured
O-50 m High-Moderate Potential	25
50-150 m Moderate Potential	40

Number of Sites by Distance from Two Line Rivers According to Slope

Distance from Variable (m)	Slope (%) 0	1-14	15-29	30-44	45-59	60-74	75-89	90-100	101	Total	% Total
1-100	1	41	24	13	17	6	2	1	1	106	14
101-200					1	3		1	2	41	5
201-300					1	4				22	3
301-400					1	2				11	1
401-500										3	<1
501-600										13	2
601-700					1					9	1
701-800									1	11	1
801-900					2	1			1	8	1
901-1000					1		1			11	1
1001-1100							1			10	1
1101-1200				1		1				11	1
1201-1300					1		1			1 1	1
1301-1400					1					6	1
1401-1500						1				7	1
1501-1600	40	309	96	30	4	6	1		1	487	63
Total	**51**	**436**	**146**	**66**	**30**	**24**	**6**	**2**	**6**	**767**	
% Total	7	56	19	9	4	3	1	0	1		

Buffers for Two Line Rivers (as defined in section 4.3.2.1)	Key	Sites Captured
0-100 m High Potential		106
100-500 m High Potential (subtract areas with slopes greater than 45%		62
100-500 m Moderate Potential (areas with slopes between 45% and 60%)		3
500-1000 m High-Moderate Potential (subtract areas with slopes greater than 45%)		44
1000-l 500 m Moderate Potential (subtract areas with slopes greater than 30%)		44

Appendix B

Glossary of Terms

Glossary of Terms

Adze
See Celt.

Aeolian
Soil deposits transported by wind.

Alluvial
Soil deposits created or transported by water.

Anadromus
Fish and eels that return to a river to spawn.

Archaeological permit
Issued by the Archaeology Branch and allows identification, assessment and/or modification of an archaeological site.

Archaeological overview assessment
Study used to predict archaeological potential,

Archaeological significance
Importance of a resource or resource class. Archaeological or scientific importance is based on the ability of a resource to answer research questions relating to past lifeways. Several other criteria are also used to evaluate the heritage significance of an archaeological site and are detailed in Archaeology Branch Guidelines.

Archaeology Branch
Branch of the Ministry of Small Business, Tourism and Culture responsible for management and protection of archaeological sites.

Artifact
Object (often bone or stone) intentionally modified through human action: for example, a projectile point.

Atlatl
Stick used to propel a spear,

Biface
Stone tool which has been worked on two opposing faces or sides, such as a knife.

Biodiversity
Level of local biodiversity often measured as the number of species present.

Borden number
Site designation developed by C. E. Borden which divides all of Canada into a series of rectangles based on longitude and latitude.

Burial

Intentional interment of human remains in either a primary (original burial) or secondary (reburial) context.

Burial site

Used for the interment of human remains, but not used for other activities.

Cache pit

Small culturally produced depression in the ground. Cache pits were dug to store food and other resources.

Celt

Ground stone blade often made from nephrite hafted at right angles and used in woodworking.

CHIN

Canadian Heritage Information Network which includes a computerized site form database.

Chipped stone

Stone tools produced by removal of flakes or chips by impact or pressure.

Core

Piece of stone from which flakes have been removed for use as tools

Culturally modified tree (CMT)

Tree showing evidence of historical or prehistoric modification including bark stripping. blazing, plank removal. test holes or felling. Generally applies to traditional First Nation activities.

Cultural chronology

History of a region as interpreted from archaeologically visible changes in artifact types and subsistence strategies.

Dart point

Large projectile point thought to have been hafted to a dart propelled by an atlatl

Drumlin

Elongated gravelly hill deposited by glacial action. Often have one side steeper than the others.

Esker

Linear accumulation of glacial debris.

Ethnographically named place

Has a traditional First Nation name. These often include villages occupied in historic times, fishing spots or geographical features.

Ethnography

Description of living peoples usually through observations or interviews.

Excavation

Large scale controlled subsurface archaeological testing. Usually involving the hand excavation of test units in natural or arbitrary levels.

Faunal remains

Animal remains associated with human activity but not used as tools.

Fish weir

Stone or wood barrier constructed to control the movement of fish

Grave goods

Also known as burial associations, artifacts and faunal remains intentionally interred with human remains.

Ground stone

Class of stone tools produced by pecking and/or grinding,

Heritage Act

Heritage Conservation Act of 1994 is the legislation designed to protect archaeological and heritage resources. The presence of the Act ensures that most archaeological sites are protected by law.

Historic site

Dates from post-European contact.

House pit

Depression remaining from pithouse construction. Often circular or rectangular and can have a defined rim.

Hypsithermal

Post-glacial warm interval 7000-600 B.C.

Impact assessment

Archaeological work necessary to assess the impact of a proposed project to an archaeological resource or resources. Methods of investigation can involve documentary research, survey, excavation, and/or other methods. This work forms the basis for determining the need for additional mitigative work.

Inventory

Compilation of a list of archaeological resources within a given project area through archival and field procedures. This listing does not involve assessment of the significance of the resources.

Knapping

Removal of flakes through impact or pressure. Technique used in production of chipped stone tools.

Lithic

Stone tool or the debris from stone tool manufacture.

Lithic scatter
Scatter of stone tools and debris from tool manufacture

Microblade
Small linear flake often hafted for use as a cutting or incising tool

Mitigation
Archaeological work required to mitigate (make less damaging) the disturbance occurring to an archaeological resource due to a project. Can take the form of excavation. documentation, oral history, historical research. and/or laboratory analysis. Can incorporate protective measures such as avoidance or capping to avoid or reduce site damage.

Osteology
Scientific study of bones.

Overview
Study of documents and maps examining the known cultural resources and potential for cultural resources within a given area.

Pebble tool
Pebble (usually stream rounded) with flakes removed to form a tool

Petroform
Series of rocks intentionally aligned (e.g., a fish weir).

Petroglyph
Picture pecked or carved into stone.

Pictograph
Picture painted often with red ochre onto a rock surface.

Pithouse
Traditional native house type roofed and walled with a central post usually evidenced only by an excavated depression.

Projectile point
Stone or bone point used to tip a projectile (such as a spear, arrow. or dart).

Quarry
Source area for lithic materials used in the production of stone tools. Often characterized by dense concentrations of chipping debris.

Roasting pit
Depression dug for cooking often distinguished by an ashy matrix

Radiocarbon dating
Analysis of C13/C14 ratios in order to determine the absolute age of organic materials. This analysis is done at specialized laboratories outside of B.C.

Rock art sites

Images exhibited on usually non-portable lithic materials. Can be grouped into two categories: petroglyphs (pecked designs) and pictographs (painted designs). Images are often placed in highly visible locations and can date from either the prehistoric or historic periods.

Scarp

Steep slope often along the edge of a mesa.

Seasonal round

Seasonally variable subsistence strategy of a people, involving collection of different resources at different times of the year.

Site

In archaeology, a place where physical evidence of past human activity has been detected.

Site assessment

Archaeological work necessary to assess significance of a given site. Work may consist of lab and field work to determine archaeological significance. Differs from impact assessment in that the site is assessed apart from considerations of impact.

Site form

Developed by the Archaeology Branch for the systematic collection of information about an archaeological site.

Stratigraphy

Layers of several temporally and/or constituent distinct soil layers which can indicate differing activities or occupation over time.

Subsistence feature

(Such as a weir or cache pit) of cultural origin related to a particular food procurement activity.

Subsistence strategy

Food collection and storage strategy of a people.

Survey

Examination of areas for archaeological materials based primarily on surface indications.

Task specific site

Used for a single task or a narrow range of tasks such as a hunting blind or CMT cluster. Such sites have a restricted range of artifacts.

Trade goods

Artifacts which indicate exchange with Europeans including glass beads, axe heads, and gun parts. Trade goods can also be prehistoric if an artifact has a known and limited distribution far from the area in which it was found,

Traditional use area
Used by a First Nation group for a period of time, including hunting and fishing areas

Trail
Linear feature created by the movement of people often marked by CMTs and campsites

TRIM
Terrain Resource Information Management.

Ungulates
Hoofed mammal usually a grazer,

Uniface
Stone tool having modification on only one side

Village site
Used for a wide variety of activities including seasonal or permanent habitation. Such sites have a wide diversity of artifacts.

Appendix C

Bibliography

Bibliography

Alexander, Diana

1985 A preliminary ethnoarchaeological investigation of the Potato Mountain Range and the Eagle Lake area. Culture library, Ministry of Small Business Tourism and Culture, Victoria.

1957 Report on the Potato Mountajn archaeological project (1985). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1987 A preliminary inventory and assessment of archaeological resources on Bald Mountain, southwestern British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 A reconstruction of traditional land use patterns in the mid-Fraser River area based on ethnographic data. In A complex culture of the B.C. Plateau: traditional *Stl'átl'imx* resource use, edited by B. Hayden, pp 98-176. UBC Press, Vancouver.

1996 A cultural heritage overview of the western half of the Williams Lake Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 A literature review of Native land use in the northern half of the Horsefly Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1997 A cultural heritage overview of the Cariboo forest region. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Apland, Brian C.

1981 Willison to Kelly Lake 500 kV transmission line heritage resource impact assessment. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Arcas Consulting Archaeologists Ltd.

1995 Archaeological impact assessment, proposed logging development, Williams Lake Forest District, near Williams Lake B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Final report for archaeological impact assessments of forestry developments on the Chilcotin Plateau, 1995. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Bailey, Jeff

1994 Archaeological monitoring at sites FcRh 4 and FcRh 6 on the northwest shore of Little Horsefly Lake, central Interior British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 Results of an archaeological impact assessment study of B.C. Lands' proposed subdivision of Part of the Remainder of Lot 1, Plan 26673, Part of Lot A, Plan 28136, and Part of Lot 1, Plan 32202, District Lot 71, Cariboo District, in Williams Lake. Culture library, Ministry of Small Business. Tourism and Culture, Victoria.

Ball, Bruce

1996 Archaeological impact assessment for proposed silviculture projects 920.057-040, Williams Lake District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological impact assessment of timber sale license A5 1773, Williams Lake Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological impact assessment for woodlots proposed by MOF, Williams Lake Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological impact assessment for forestry operations with proposed bark beetle salvage areas, Williams Lake Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological impact assessment for proposed forestry developments associated with the Small Business Forest Enterprise Program, Williams Lake Forest District. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

1996 Archaeological impact assessment of West Fraser Mills Ltd.'s proposed forestry operations for CP 909-3, FL A20020, Williams Lake. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Bernick, Kathryn

1978 Westcoast Transmission pipeline loop survey 1978 final report. Culture library, Ministry of Small Business, Tourism and Culture: Victoria.

Blacklaws, R. W.

1978 Final report of the Nazko #2 archaeological survey. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Blacklaws. R.W. *(continued)*

1979 Mackenzie grease trail heritage inventory and assessment project: Kluskus-Ulkatcho. Culture library, Ministry of Small Business. Tourism and Culture, Victoria.

1981 Quesnel burial and impact review. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Borden, Charles E.

1969 Early population movements from Asia into western North America. Syesis 2:1-13.

1975 Origins and development of early Northwest Coast culture to about 3,000 B.C. National Museum of Man Mercury Series Paper 45. Archaeological Survey of Canada, Ottawa.

Brandon, John D. and Susan Irvine

1979 Archaeological investigations in the Quesnel area. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Brolly, Richard P.

1989 Archaeological resource assessment EhRa 9, Five Barr Industries, 1990 archaeological impact assessment proposed grave1 pit expansion on the Little Horsefly River, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 Report of the South Cariboo—Lillooet Highways impact assessment. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 The 1992 Kamloops Region Highways impact assessment. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 Archaeological overview of the central portion of Alkali Lake Band traditional territory. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Burnard-Hogarth, L.

1983 Ethnoarchaeological investigations in the Chilcotin region of B.C. summer, 1983. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Bussey, Jean

1982 Stage II heritage resource impact assessment B.C. Hydro and Power Authority Kelly Lake-Cheekye transmission line project. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Bussey, Jean *(continued)*

1983 Alexis Creek archaeological investigations. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1989 Heritage resource overview assessment Mount Polley copper/gold property, Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1991 Heritage resource inventory and impact assessment Chilcotin Marsh project. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1991 Heritage resource inventory and impact assessment Quesnel, Williams Lake and McBride highways districts. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 Archaeological assessment of the Cariboo Forest Region. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological assessment of the Cariboo Forest Region. Non-permit. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological inventory and impact assessment: Nechako, Fort George, North Cariboo, Central Cariboo Highways District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 North and Central Cariboo Districts archaeological investigations. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Bussey, Jean and Diana Alexander

1992 Archaeological assessment of the Caribou Forest Region. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Canuel, Normand

1996 Archaeological impact assessment for proposed subdivision of DL 11558 and remainder of DL 394, east end of Little Lake, Cariboo Land District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Carl, Alan

1972 Salvage archaeology at the Stafford Ranch site (FaRn 3). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Carlson, Arne K.

1993 Archaeological resource inventory and impact assessment of a proposed new bridge and road alignment, Baezaeko River, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Carlson, Roy L.
1983 The far west. In Early man in the new world, edited by R. Shutler Jr. Sage Publications, Beverly Hills.

Chisholm. Brian S.
1986 Reconstruction of prehistoric diet in British Columbia using stable isotope analysis. Unpublished Ph.D. dissertation, Department of Archaeology, Simon Fraser University, Burnaby, B.C.

Clague, J.J.
1981 Late Quaternary geology and geochronology of British Columbia. Geological Survev of Canada Paper 80-35, Ottawa.

Clarke, Donald W.
1981 Prehistory of the western subarctic. Handbook of North American Indians: Subarctic 6:107-129. Smithsonian Institution, Washington, D.C.

Curtin, A. Joanne
1986 Osteological analysis of human skeletal material from the Clinton Museum, Clinton B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1986 G. R. Baker Memorial Hospital expansion project heritage resource impact assessment. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

Cybulski, J. S., D. E. Howes, J. C. Haggarty and M. Eldridge
1981 An early human skeleton from south-central British Columbia: dating and bioarchaeological inference. Canadian Journal of Archaeology 5:49-60.

Dahlstrom, Bruce and Ian R. Wilson
1998 Archaeological data recovery EkRf 12, Drewry Lake, British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Darwent, John and C. Darwent
1995 Archaeological inventory and assessment of timber harvesting areas in the Anahim Lake Supply Block, British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Dawson, George M.
1892 Notes on the Shuswap people of British Columbia. Papers for 1891. Transactions, Royal Society of Canada, Section II, pp. 2-44. Dawson Brothers. Montreal

Dewhirst, John
1993 An aboriginal sustenance impact assessment study of the Quesnel River gold development project, near Quesnel, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Eldridge, Morley
1976 Survey sampling on the Fraser Plateau. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Fladmark, Knut R.
1982 An introduction to the prehistory of British Columbia. Canadian Journal of Archaeology 6:95-156.

Franck, Ian
1993 An archaeological impact assessment for a proposed residential subdivision on the north shore of Williams Lake B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Franck, Ian C. and D. G. Howe
1996 Final report of the archaeological impact assessment conducted in 1995 for Tolko Industries, Quest Wood Division near Quesnel. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Franck, Ian and D. Schaepe
1996 Final report for archaeological impact assessments conducted in 1995 for C&C Wood Products Ltd. near Quesnel, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Friesen, David E.
1980 Heritage resource assessment of the proposed Westcoast Transmission company Limited Vancouver Island Gas Pipeline Williams Lake to Comox and Squamish lateral. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Fumiss, Elizabeth
1993 Dakelh kevoh-the Southern Carrier in earlier times. Quesnel School District, Quesnel.

Gehr, Keith
1976 The archaeology of the Hihium Lake locality, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Germann, Carlos

1978 Report of the Cariboo regional archaeological impact survey. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Gilbert. Richard and J. Gilbert

1995 Archaeological impact assessment of University of Northern British Columbia District Lot 2616, Cariboo District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological impact assessment of Crown Land Lot 146, District Lot 913, Plan 16511, Cariboo District and Crown Land Lots A & B District Lot 745, Plan 29700, Cariboo District. Culture library, Ministry of Small Business. Tourism and Culture, Victoria.

Glavin, Terry

1994 Nemiah. the unconquered country. New Star Books, Vancouver.

Grabert, Garland F.

1974 Okanagan archaeology. Syesis 7, Supplement 2

Hall. John M.

1969 Archaeological excavations at Clearwater River Park. August 12-29, 1968. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Ham, Leonard C.

1975 Shuswap settlement patterns. Unpublished M.A. thesis, Department of Archaeology, Simon Fraser University, Burnaby, B.C.

1987 Highways projects Williams Lake B.C. (1987). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Handly, Martin J.

1996 Archaeological impact assessment of twenty-nine TSLs for the Quesnel Forest District's Small Business Forest Enterprise Program, near Nazko, central British Columbia, 1995-1996. Culture library, Ministry of Small Business, Tourism and Culture; Victoria.

Harmon, D. W.

1957 Sixteen years in the Indian country. The journal of Donald William Harmon 1800-1816, edited by W. Kaye Lamb. The MacMillan Company of Canada Ltd., Toronto.

Hebda, Richard J.

1982 Postglacial history of grasslands in southern British Columbia and adjacent regions. In Grassland ecology and classification: symposium proceedings, edited by A.C. Nicholson, A. McLean and T.E. Baker, pp. 157-194. Ministry of Forests, Victoria.

1986 Preliminary postglacial environmental history of the Highland Valley. In Excavations at Valley Mine, Highland Valley, B.C., by Arcas Associates. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Helmer, James A.

1976 Results of 1976 Nazko-Kluskus archaeological site survey. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1977 Points, people and prehistory: a preliminary synthesis of culture history in north central British Columbia. In Prehistory of the North American Sub-Arctic: the Athanaskan question, edited by J. W. Helmer, S. Van Dyke and F. J. Kense, pp 90-96. University of Calgary Archaeological Association, Calgary.

Helmer, J.W. and P.E. Wilson

1975 Settlement configurations in the Blackwater drainage. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Heritage North Consulting Ltd.

1995 Inventory assessment of archaeological sites adjacent to roadways within the Soda Creek Indian Reserve #1. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Hewer, Tony G.

1995 Archaeological inventory and impact assessment, Williams Lake M.O.F cut blocks, salvages, and silvicultures. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological inventory and impact assessment, Horsefly M.O.F. woodlots. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological inventory and impact assessment, forestry cut blocks, east of Fraser River, Williams Lake District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological inventory and impact assessment, Timber West Forest Ltd. beetle kill salvages and cut blocks. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Hewer, Tony G. (*continued*)

1996 Archaeological overview assessment, Chilcotin Forest District, south of Chilcotin River, east of Taseko River, final report. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Hewer, Tony and Ian R. Wilson

1996 Archaeological inventory and impact assessment Horsefly M.O.F. cut blocks, roads and salvages. Culture library, Ministry of Small Business. Tourism and Culture, Victoria.

Hobler, Phil and Ying-ying

1996 The 1993-94 archaeological survey of Chinese settlements in the North Cariboo District, a preliminary report Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Holland, S.S.

1976 Landforms of British Columbia: a physiographic outline. Bulletin of the British Columbia Department of Mines and Petroleum Resources 48, Ottawa.

Howe, Geordie

1980 Report of the Vancouver Island, Lower Mainland, Cariboo regional archaeological impact assessment. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 Highway 92 north-south interconnector, archaeological site inventory. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 Archaeological impact assessment, proposed logging developments, Williams Lake Forest District, near Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological impact assessment, proposed logging development, TSL A50867 (Young Creek), near Alexis Creek, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 AIA for a proposed property subdivision and firehall construction located in Cariboo District at Ten Mile Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Howe, Geordie and Mike Brand

1995 Archaeological impact assessment, proposed logging developments, Williams Lake Forest District, near Hanceville, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Jenness, Diamond

1943 The Carrier Indians of the Bulkley River: their social and religious life. Bureau of American Ethnology Bulletin 133, Anthropological Paper 25:469-586. Smithsonian Institution, Washington, D.C.

Keddie, Grant

1971 Wells Gray Provincial Park and Upper Fraser-Rocky Mountain trench surveys, 1971. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1972 The Chilcotin archaeological and ecological survey report. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Kennedy, Dorothy and Randy Bouchard

1987 Notes on Sahhaltkum ethnography and history. Appendix II. In Archaeological excavations at the Sahhaltkum bridge site (EeQw 30), Chase B.C. by Arcas Associates, pp 241-266. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Kenny, Ray

1972 Preliminary report Deep Creek site (FbRn 13). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Kew, Michael

1974 Nazko and Kluskus: social conditions and prospects for the future. Unpublished manuscript prepared for the Nazko-Kluskus Study Committee, Nazko, B.C. On file at UBC.

Klassen, Mike

1996 AIA for 199611997 forestry operations by Riverside Forest Products, Chilcotin Forest District, Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

Klassen, Mike and J. Spafford

1995 (1) An archaeological impact assessment of 104 proposed 1995 and 1996 Small Business Enterprise timber harvesting blocks and associated access roads in the Chilcotin Forest District, southcentral B.C.; (2) an archaeological impact assessment of a section of Mosley Creek Road conducted for the Ministry of Forests, Chilcotin Forest District, southcentral B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Kuijt, Ian

1989 Subsistence resource variability and culture change during the middle-late prehistoric cultural transition on the Canadian Plateau. ~~Canadian Journal of~~ Archaeology 13:97-118.

Kulle, Barbara

1994 Archaeological impact assessment Trans Mountain Pipeline Ltd., North Thompson facility CP 570. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Lane. Robert B.

1953 Cultural relations of the Cbilcotin Indians of west central British Columbia. Unpublished Ph.D. dissertation, Department of Anthropology, University of Washington, Seattle.

1981 Chilcotin. Handbook of North American Indians: Subarctic 6:402-412, edited by June Helm. Smithsonian Institution, Washington D.C.

Lawhead, Stephen

1979 Salvage archaeology project, May-August 1978. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1980 Salvage archaeology project May 15-September 30: A report on the investigations of the 1979 mobile salvage crew. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Magne, Martin

1984 Taseko Lakes prehistory project: report on a preliminary survey. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1985 Taseko Lakes prehistory project, phase II: preliminary excavations. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1985 Litbics and livelihood: stone tool technologies of central and southern interior British Columbia. National Museum of Man. Mercurv Series. Archaeological Survey of Canada Paper 133, Ottawa.

1985 Taseko Lakes prehistory project: a preliminary report. The Midden XVII(3):10-12.

Magne, Martin and R.G. Matson

1982 Identification of "Salish" and "Athapascan" side-notched projectile points from the Interior Plateau of British Columbia. In Approaches to Aleonouian archaeology, edited by M.G. Hanna and B. Kuyman. The Archaeology Association of the University of Calgary, Calgary.

Magne, Martin and R.G. Matson (*continued*)

1984 Athapaskan and early archaeology at Big Eagle Lake, British Columbia.. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Mason, Andrew R.

1995 Archaeological overview of the Esketemc First Nation land claim area Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Mathewes, R.W.

1985 Palaeobotanical evidence for climatic change in southern British Columbia during late-Glacial and Holocene time. In Climatic change in Canada 5: critical periods in the Quaternary climatic history of northern North America, edited by C.R. Hanington. Syllogens 55:344-396.

Mathewes, R.W. and M. King

1989 Holocene vegetation, climate and lake level changes in the Interior Douglas fir biogeoclimatic zone, British Columbia. Canadian Journal of Earth Sciences 26(9):1811-1825.

Matson, R.G. and Leonard C. Ham

1974 Shuswap settlement pattern project. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Matson, R.G., Martin Magne and Diane Ludowicz

1979 The Eagle Lake archaeology project: the 1979 field season. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Matson, R.G., Martin Magne, Diane Ludowicz and David L. Pokotylo

1980 The Eagle Lake archaeological project: report on the 1979 season. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Merchant, Peter S.

1995 Results of archaeological investigations conducted within the traditional territory of the Nazko Indian Band on behalf of Weldwood Canada Limited, Quesnel operations, for cutting permit 8, timber harvesting blocks 2 and 3 and cutting permit 9 timber harvesting blocks 1 and 2 within the Prince George Forest District, central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Results of 1994 archaeological investigations conducted on behalf of Timberwest Forest Limited within the Williams Lake Forest District, south-central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Merchant, Peter S. (*continued*)

1995 Results of 1994 archaeological investigations conducted on behalf of Weldwood of Canada Ltd., Williams Lake operations, for twelve proposed harvesting blocks within CP536, CP539 and CP540, near Elk and Skelton lakes and bark beetle probes sites wtihin CP2 letter permits 3, 4, 5 and 6 near McLeese Lake, central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Results of archaeological investigations conducted within the traditional territory of the Nazko Indian Band on behalf of West Fraser Mills Limited, Quesnel operations, for thirteen proposed timber harvesting blocks and their associated access roads within CP 308 (Blocks A, B, C and D), CP 340 (A, B, D and E), CP 344 (Block A), and CP 341 (Blocks A, B, C and D), and one proposed road access to CP 227, near the Blackwater River, central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 AIA for West Fraser Mills Ltd. proposed harvesting blocks and access roads in the Pelican Lake, Batnuni Lake and Blackwater River areas, Quesnel Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Merchant, Peter S. and Mike K. Rousseau

1995 An archaeological impact assessment of Lignum Ltd.'s proposed 1993-1994 access roads and selected timber salvage sites within CP 699 near Chimney Creek, south-central B.C. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

1993 Results of the 1993 archaeological impact assessment study conducted for Weldwood of Canada Ltd. timber harvesting block 447-2, within the Quesnel-Barkerville corridor near Wells. B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Results of the1993 archaeological impact assessment study conducted for the West Fraser Mills timber harvesting blocks SBV 39 and SBV 40 within the Quesnel-Barkerville corridor near Wells, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Middleton. Hugh K.

1995 Archaeological inventory and assessment of eight timber sale license areas and associated road development in the Anahim Lake timber supply block British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Middleton,Hugh K. *(continued)*

1996 Archaeological impact assessment of cut blocks and associated road developments for forest licenses located near Anahim Lake, Chilcotin Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Minni, Sheila

1996 AIA of proposed MOF forestry operations, Quesnel Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Mitchell, Donald H.

1964 An archaeological survey on the Chilcotin Plateau and in the Bella Coola Valley: interim report and recommendations. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1968 Archaeological investigations, summer 1968. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1970 Archaeological investigations on the Chilcotin plateau, Syesis 3:45-65

Mitchell, Monty

1995 Tyee Lake forestry road, letter report. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Mohs, Gordon

1972 EkRo 48: a preliminary site report. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1977 Archaeological surveys along the Soda Creek-l00 Mile House hydro transmission line route. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Montgomery, Pamela

1979 The Blackwater drainage study: a heritage inventory project in the vicinity of Quesnel, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Morice, Father Adrien G.

1895 Notes archaeological, industrial and sociological on the Western Déné with an ethnographic sketch of same. Transactions of the Canadian Institute 4: 1-222, Toronto.

Muir, Robert J.

1991 Results of the 1991 Phase I heritage resource inventory and impact assessment study conducted for Weldwood of Canada Limited timber harvesting blocks BC9, BC10a, BC10b, LCN1, LCN2, LCN3, and LCN4, within the Quesnel-Barkerville corridor near Wells, central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Muir, Robert J. and D. Alexander

1994 Archaeological overview of the central portion of Alkali Lake Band traditional territory. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

Muir, R. J. and M. K. Rousseau

1991 Results of the 1991 heritage resource inventory and impact assessment of Civic Engineering Services Limited's proposed watermain alignment right-of-way, Norlake Industrial Park, Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 Results of the 1991 *Cqwoywytem* heritage resource inventory, Dog creek locality, mid Fraser River region, south central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Oliver, Lindsey

1996 AIA east of Pentataenkut Lake, Cariboo Land District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Post-disturbance archaeological impact assessment of gravel operations at archaeological site ElRn 2, located within Section 36, Township 48, Lillooet District, west side of Fraser River, south of Sheep Creek Bridge. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological impact assessment for a proposed housing subdivision within DL's 3985, 8905 and 9505, Cariboo Land District, west side of Puntchesakut Lake. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Palamantier, Shawnee

1996 Archaeological impact assessment of proposed forestry operations within asserted Toosey traditional territory, Williams Lake Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Penner, Hans

1996 Alteration of archaeological site EjRe 19 as a result of upgrading of Bridge Lake North Rd. #314 by MOTH, South Cariboo District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Pokotylo, David L. and Patricia Froese

1983 Archaeological evidence for prehistoric root gathering on the Southern Interior Plateau of British Columbia: a case study from the Upper Hat Creek Valley. Canadian Journal of Archaeology 7(2): 127-157

Preckel, Karen

1996 AIA of proposed forestry operations in the Williams Lake Forest District, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 AIA of proposed forestry operations within the Horsefly Forest District, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 AIA for proposed forestry operations within 100 Mile House Forestry District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 AIA of proposed forestry operations within the Chilcotin Forest District Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Rafferty, Pauline

1976 Northwest Regional Survey Cariboo Skeena Region. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Ray, Verne F.

1932 The Sanspoil and Nespelem: Salishan peoples of northeastern Washington. University of Washington Publications in Anthropology 5, Seattle.

1939 Cultural relations in the Plateau of North-western America. Publications of the Frederick Webb Hodge Anniversary Fund 3, Los Angeles.

Richards, Tom H. and Mike K. Rousseau

1985 A culture historical sequence for the South Thompson River Western Shuswap Lakes region of British Columbia: the last 4,000 years, Northwest Anthropological Research Notes 19(1):1-32.

19x7 Late prehistoric cultural horizons on the Canadian Plateau. Simon Fraser University Department of Archaeology Publication 16, Bumaby.

Ridington, Amber and Mike Brand

1996 Final report for archaeological impact assessments of forestry developments on the Chilcotin Plateau, 1995. Culture library, Ministry of Small Business, Culture and Tourism, Victoria.

Rousseau, Mike

1989 An inventory, impact assessment and management plan for heritage resources associated with Pacific Energy Corporation's proposed Williams Lake power station development project area. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1989 An inventory and impact assessment for Williams Lake medium density fibreboard plant development project area. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1990 A heritage resource inventory and impact assessment for a proposed residential subdivision development on Little Horsefly Lake, south-central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1990 An inventory, impact assessment, and management plan for heritage resources associated with the proposed north end truck route right-of-way corridor, Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1991 An overview assessment of heritage resource potential for nine of West Fraser Mills Ltd.'s proposed timber harvesting blocks and related access roads within or near the Quesnel-Barkerville corridor, central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 An archaeological impact assessment for proposed access roads and creek channel diversion development projects associated with the proposed Williams Lake fibreboard plant, Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 An archaeological impact assessment of TimberWest Forest Ltd., timber harvesting blocks within Forest License A 200019; CP 502 and 507 near McLeese Lake, south-central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Report on several archaeological impact assessment studies for Riverside Forest Products Ltd. in the Williams Lake Forest District, south central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 AIA for BC Lands (Cariboo Region) residential and commercial land developments at Tatla Lake Properties; Charlotte Lake and Anahim Lake. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

Rousseau, Mike (continued

1996 AIA of proposed forestry operations by Weldwood of Canada Ltd., Quesnel Forest District, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 AIA of proposed 96/97 forestry operations by Riverside Forest Products Ltd., Chilcotin Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 AIA of forestry operations proposed by the Tsi Dei Del Forestry Company within the Chilcotin Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Rousseau, Mike K., J. Bailey and P. Merchant

1993 Results of the 1992 phase II archaeological impact assessment study conducted for Weldwood of Canada timber harvesting blocks 434-5, 434-6, 435-1, 435-3A, 435-3B, 435-4, 449-2 and 449-3 within the Quesnel-Barkerville corridor near Wells, B.C.

Rousseau, Mike K. and Rob H. Gargett

1987 Prehistoric resource use on Cornwall Hills summit, Midden 19(5):6-9

Rousseau, Mike K. and P. Merchant

1993 Results of the 1992 archaeological impact assessment study conducted for West Fraser Mills timber harvesting blocks CP575A, CP534A, DP534B, CP650A and SBV3A to SBV3D, within the Quesnel Barkerville corridor nears Wells, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Rousseau, Mike K. and Robert J. Muir

1990 Archaeological surveillance and monitoring for Cariboo Fibreboard Limited medium density fibreboard plant development project area in proximity to the northern boundary of archaeological site FaRm 9 (original Williams Lake townsite) within DL 72, Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1990 Archaeological surveillance and monitoring of initial access road construction activities associated with NW Energy Corp. and Cariboo Fibreboard Limited's development projects in proximity to archaeological sites FaRm 9 and FaRn 35, Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1990 Results of the 1990 heritage resource study of Cariboo Fibreboard Ltd. and B.C. Rail's proposed industrial rail lead right-of-way in Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Rousseau; Mike K. and Robert J. Muir (*continued*)

1990 Results of the 1990 heritage resource inventory and impact assessment conducted within District Lot 4941 and Block A, Cariboo District, near Williams Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1991 A heritage resource inventory, impact assessment and management plan for six Ministry of Transportation and Highways projects. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1991 Archaeological investigations at site FaRm 23: an early Shuswap horizon deer hide preparation focus, Williams Lake, south-central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Rousseau, Mike K., R. Muir, D. Alexander, J. Breffitt, S. Woods, K. Berry and T. Van Gaalen

1991 Results of the 1989 archaeological investigations conducted in the Oregon Jack Creek locality, Thompson River region, south-central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Rousseau, Mike K. and Thomas Richards

1985 A culture historical sequence for the South Thompson River Western Shuswap Lakes region of British Columbia: the last 4,000 years. Northwest Anthropological Research Notes 19(1):1-32.

Ryder, June M.

1982 Surficial geology of the grassland areas of British Columbia and adjacent regions. In Grassland ecology and classification symposium proceedings June 1982, pp. 63-94, edited by AC. Nicholson, A. McLean and T.E. Baker. Ministry of Forests, Victoria.

Sanger, David

1963 Excavations at Nesikep Creek (EdRk 4) - a stratified site near Lillooet, British Columbia: preliminary report. National Museum of Canada Bulletin 193:130-161.

1966 Excavations in the Lochnore-Nesikep Creek locality, British Columbia, interim report. National Museum of Canada Anthrooolow Paper 12.

1967 Prehistory of the Pacific Northwest Plateau as seen from the interior of British Columbia. American Antiquitv 32(2): 186-97.

1968 Prepared core and blade traditions in the Pacific Northwest. Arctic Anthropology 5(1): 92-120.

1969 Cultural traditions in the interior of British Columbia. Syesis 2:189-200.

Sanger, David (*continued*)
1970 The archaeology of the Lochnore Nesikep locality, British Columbia. Syesis 3, Supplement 1.

Schurmann, Sandy
1969 Report to ASAB on site survey done in the Kamloops district from June 4 to July 4, 1969. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Simonsen, Bjom 0.
1972 Final report of the system "E" archaeological resources evaluation project 1971-1972. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Sneed, Paul
1970 Cariboo survey - 1970. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Spafford, Jim, J. Bailey and M. Rousseau
1995 Report on several archaeological impact assessment studies conducted for Lignum Ltd. in the Williams Lake area of south central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria

1995 Report on several archaeological impact assessment studies for Riverside Forest Products Ltd. in the Williams Lake Forest District, south central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Spafford, Jim and M. Rousseau
1995 An archaeological impact assessment of Michel's Garden, a twenty-five hectare property near Redstone Flat in south-central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Stryd, Arnoud H.
1988 Lightguide Transmission System project Vancouver to Yellowhead, B.C. heritage resource overview. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1989 Five referrals, Williams Lake and Quesnel Highways Districts: detailed heritage resource impact assessment. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1989 Transmountain Pipeline 138 kV tap to pumping station at Darfield B.C. heritage resource impact assessment. Culture library: Ministry of Small Business, Tourism and Culture, Victoria.

Stryd, Arnoud H. (*continued*)
1989 Lightguide Transmission System Vancouver to Yellowhead, B.C. heritage resource study. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1990 Archaeological impact assessment Williston-Kelly Lake 500 kV transmission line project. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 AIA of forestry operations within Quesnel Forest District by C&C Wood Products Ltd., Ministry of Forests QFD, Tolko Industries, Weldwood of Canada Ltd., Canadian Forest Products Ltd., and others. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 Archaeological overview of the central portion of the Alkali Lake Band traditional territory. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Stryd, Amoud H. and J. Curtin
1997 Culturally modified trees of British Columbia: a handbook for the identification and recording of culturally modified trees. Province of British Columbia, Victoria.

Stryd, Arnoud H. and Mike Rousseau
1996 The early prehistory of the mid Fraser-Thompson River area of British Columbia. In Earlv human occupations in British Columbia, edited by Roy L. Carlson and Luke Dalla Bona, pp 177-256. UBC Press, Vancouver.

Tate, Kelly
1996 Removal of log stockpile from archaeological site FaSb T96-17, located near Chilanko Forks within CP 982, Block 2A, Forest License A45024, Chilcotin Forest District. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

Teit, James
1909 Notes on the Chilcotin Indians. In The Shuswap. Memoir of the American Museum of Natural Historv. Jesup North Pacific Expedition 2(7):759-789. Leiden.

1909 The Shuswap. American Museum of Natural History Memoir 5, New York.

1910 Notes to maps of the Pacific Northwest. American Philosophical Society Library, Philadelphia. Boas Collection 372, Roll 4, No. 1, Item 59.

Terry, George (compiler)
[1958] History and legends of the Chilcotin. Cariboo Press, Williams Lake.

Thomas, Lorie

1977 Archaeological salvage investigations at Dragon Lake (FfRo 4). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Tobey, Margaret L.

1981 The Carrier. Handbook of North American Indians: Subarctic 6:413-432. Smithsonian Institution, Washington, D.C.

Twohig, Kevin

1996 AIA Cariboo Land District, Little Horsefly. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological inventory and impact assessments Lot 1, Plan 9035, Except Plan PGP 39292 and Lot 1, Plan 12358, Except Plan PGP 29381 Cariboo District, McLeese Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

1997 Archaeological inventory and impact assessment forestry developments within the traditional territories of the Canoe Creek, Soda Creek and Williams Lake bands, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Twohig, Kevin and Dan Weinberger

1997 Archaeological review M.O.F. Horsefly Forest District Small Business Enterprise cut blocks and roads, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Twohig, Kevin, Dan Weinberger and Ian R. Wilson

1997 Archaeological inventory and impact assessment within the traditional territories of the Canoe Creek, Soda Creek and Williams Lake Bands. Cultural library, Ministry of Small Business, Tourism and Culture, Victoria.

Tyhurst, Robert

1975-1976 Chilcotin plant, fish and animal names, and uses. Unpublished report. Copy held by B.C. Indian Language Project, Victoria.

1992 Traditional and contemporary land use and resource use by the Ts'kw'aylaxw and Xaxli'p Bands. In A complex culture of the B.C. Plateau: traditional Stl'atl'imx resource use, edited by Brian Hayden, pp. 355-404. UBC Press, Vancouver.

1993 Fish Lake heritage resource study: report on the 1993 archaeological survey of the Fish Lake mine project and access corridor in south central British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Walde, Dale

1996 AIA of proposed 19961999 forestry operations and associated access roads by Yun Ka Whu'ten Holdings Ltd. within forest license A47409, Chilcotin Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Walde, Keary

1994 Archaeological assessment of proposed subdivision Parcel A (F9593), D.L. 587, Cariboo District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Walde, K., J. Gilbert and Dick Gilbert

1994 Inventory assessment of archaeological sites adjacent to roadways within the Soda Creek Reserve #1. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Warner, E. Jane

1980 Heritage resource inventory and impact assessment of the proposed Kelly Lake-Nicola and Nicola-Merritt-Highland transmission lines in south-central B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Weber, Charles and Brian Seymour

1976 Archaeological survey along two proposed Hydro transmission line routes in the south-central interior of B.C. 1976. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Weinberger, Dan

1996 Archaeological inventory and impact assessment lots 687, 1 1G.1, 1101, 2288 Dog Creek, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1997 Archaeological impact assessment for a proposed housing subdivision within District Lot 9511, Cariboo District, except Plan 29013, located south of Puntataenkut Lake. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1998 Archaeological inventory and impact assessment, Riverside Forest Products Ltd. forestry developments within the traditional territories of the Canim Lake, Soda Creek and Williams Lake Bands. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Weinberger, Dan and Ian Wilson
1998 Archaeological inventory and impact assessment, West Fraser Mills Ltd, forestry developments within the traditional territories of the Soda Creek and Williams Lake Bands. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1998 Archaeological inventory and impact assessment, UBC Alex Fraser Research Forest, forestry developments within the traditional territories of the Soda Creek and Williams Lake Bands. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1998 Archaeological inventory and impact assessment, Ministry of Forests, 100 Mile Division, forestry developments within the traditional territories of the Alkali Lake, Canim Lake and Williams Lake Bands. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Whitlam, Rob G.
1976 Archaeology in the Williams Lake area, British Columbia. Occasional Papers of the Archaeology Sites Advisory Board of British Columbia 1, Victoria.

Williams, Jean
1974 A preliminary report - salvage archaeology at the Boitanio Park site (FaRm 8). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilmeth, Roscoe
1968 The potlatch site (FcRi-201), British Columbia: a preliminary report. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1969 Excavations at Anahim Lake, British Columbia, second season. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1978 Anahim Lake archaeology and the early historic Chilcotin Indians. National Museum of Man. Mercury Series. Archaeological Survey of Canada Paper 82, Ottawa.

Wilson, Ian R.
1978 Archaeological survey of B.C. Hydro transmission lines in the Kootenays and the Cenral Interior Plateau. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1984 Heritage resource overview Quesnel Lake fluorspar project. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 Detailed heritage resource impact assessment southern looping 1992 construction projects. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 Detailed heritage resource impact assessment southern mainline looping 1993 construction projects. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological resource inventory and impact assessment Bald Mountain forestry area. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological resource overview Big Creek forestry program. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological impact assessment southern mainline looping proposed 1994 construction projects. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 Archaeological resource overview Cutting Permit 23X West Chum Creek. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 Archaeological resourde inventory and impact assessment CP 946, FL A45024 Gay Lake. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1994 Archaeological resource overview Mackin Creek forestry area. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Tyee Lake, Meldrum Creek beetle kill. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Heritage resource overview D14372 Except Plan RLW B 332 and A 1196, Cariboo District, Ten Mile Lake. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological overview assessment Chilcotin Training Area block 7741, Riske Creek, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological impact assessment proposed Mount Polley 69 kV electrical transmission line. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R. *(continued)*

1996 Archaeological overview of Quesnel and Williams Lake airports. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological monitoring and emergency salvage *excavation* ReRo 16, Australian Creek, Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological impact assessment Mount Polley pump station and water pipeline. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Archaeological impact assessment FcRh 6, Little Horsefly Lake. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1998 Archaeological inventory and impact assessment, Ainsworth Lumber Co. Ltd., forestry developments within the traditional territories of the Canim Lake, Canoe Creek, Esketemc (Alkali Lake), High Bar, Whispering Pines and Williams Lake Bands. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1998 Archaeological inventory and impact assessment, Weldwood of Canada Ltd. Williams Lake operations forestry developments within the traditional territories of the Canim Lake, Red Bluff, Soda Creek and Williams Lake First Nations. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R. and Randy Bouchard

1993 Archaeological resource overview Bald Mountain forestry area. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R., Susan Crockford, Bruce Dahlstrom and Kevin Twohig

1995 1994 excavations at EdQx 43 and EdQx 44 Monte Creek, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R. and Bruce Dahlstrom

1996 Last Chance traditional use study. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1997 Archaeological inventory and impact assessment proposed "Eaters of the Dead" movie facilities in Williams Lake area, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R. and Chris Engisch
1998 Archaeological inventory study Williams Lake First Nation traditional territory. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson. Ian R. and Tony Hewer
1997 Archaeological review consolidated development plan 1997-2002 Ministry of Forests, Horsefly Forest District, British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R. and Brad Smart
1994 Archaeological resource inventory and impact assessment CP 93X and 94X Willan Lake and Coyote Lake. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R., Brad Smart, Nick Heap, Jane Warner, Terry Ryals, Sue Woods and Scott Macnab
1992 Excavations at the Baker Site EdQx 43, Monte Creek. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R., Dan Weinberger and Bruce Dahlstrom
1998 Archaeological excavations at Little Horsefly Lake (FcRh 6). Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R. and Scott Macnab and Kevin Robinson
1994 Archaeological impact and inventory assessment Williams Lake Forest District 1994 program east side Fraser River. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Ian R., Dan Weinberger and Nicole Nicholls
1998 Archaeological inventory and impact assessment, Weldwood of Canada Ltd. 100 Mile House Division forestry developments within the traditional territories of the Canim Lake, Canoe Creek, Esketemc (Alkali Lake), High Bar, Whispering Pines and Williams Lake Bands. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Wilson, Pamela
1977 The Nazko-Kluskus archaeological survey 1977 field season. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Winram, Patricia and L. Thomas
1977 Northwest regional survey Cariboo Skeena region. Culture library, Ministry of Small Business, Tourism and Culture. Victoria.

Yip, Arlene

1994 An archaeological resource impact assessment of Cutting Permit 801, Churn Creek area, Williams Lake Forest District. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Yip, Arlene and Wayne Choquette

1996 An archaeological impact assessment of West Fraser Mills Limited's proposed 1995196 logging and associated development activities within Forest License A20020, cutting permits 613, 617, 618, 623, 624, 625, 626, 699, 741, 743, 7481773 and 749 near Riske Creek, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 Report on a post harvest archaeological impact assessment and archaeological impact assessment of TimberWest Forest Product Ltd.'s FL A20019, cutting permits 06H, 09X access road, 11H, 24H, 70X, 699 and gravel pits 2 and 3 in the Gaspard, West Chum Creek, Empire Valley and Mackin Creek geographic areas. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1996 A report of an archaeological impact assessment of forest licence A20018, cutting permit 803, Big Basin Forest Service Road Permit 1361 (Gravel Pit 1) in the Churn Creek area. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Zacharias. Sandra K.

1990 Archaeological inventory and impact assessment at EkRg 3 (Buffalo Creek) near 100 Mile House, British Columbia. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1990 Archaeological resource inventory and impact assessment at East Twin Creek, near McBride, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1991 Archaeological inventory and impact assessment part of DL 4187, Lillooet District, 103 Mile Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1991 Archaeological inventory and impact assessment, part of DL 149, Lillooet District, Lac La Hache, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria

1991 Archaeological inventory and school program at EkRf 6, Canim Lake Reserve No. 1 near 100 Mile House, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Zacharias, Sandra K. (*continued*)

1992 Archaeological inventory and impact assessment of part of the Remainder of District Lot 1461, Lillooet District Lac Des Roches B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1992 Archaeological inventory and impact assessment of part of District Lots 4297 and 4298, Lillooet District, Lesser Fish Lake. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological inventory and impact assessment of Block A, District Lot 4035, Lillooet District, Horse Lake B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological inventory and impact assessment of Part of District Lot 2791, Lillooet District, Lac La Hache, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological inventory and impact assessment of Part of Lot 1, District Lot 3922, Lillooet District, Eagle Creek, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological inventory and impact assessment of District Lot 3868, Lillooet District, Horse Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1993 Archaeological inventory and impact assessment of Lot A, District Lot 4278, Lillooet District, Bridge Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological inventory and impact assessment of M.O.T.H. Horsefly Bridge rehabilitation and road realignment, Horsefly, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological inventory and impact assessment of Part of District Lot 434, Lillooet District, 105 Mile Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological inventory and impact assessment of District Lot 1459, Lillooet District, Muddy Lake, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological inventory and impact assessment of Lot 1, Plan 34788, District Lot 481, Lillooet District, Lac la Hache, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

Zacharias, Sandra K. (continued)
1995 Archaeological inventory and impact assessment of District Lot 4848, Lillooet District, near 100 Mile House, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.

1995 Archaeological inventory and impact assessment of portions of District Lots 1311, 1312, and 1461, Lac Des Roches, B.C. Culture library, Ministry of Small Business, Tourism and Culture, Victoria.