

An aerial photograph showing a light-colored road or path winding through a dense, dark forest. The road starts from the bottom center and curves towards the right. The forest is thick and covers most of the landscape. The sky is visible at the top, appearing bright and slightly hazy.

DEMPSTER HIGHWAY INTERPRETIVE STRATEGY

VOLUME 1: BACKGROUND REPORT

DEMPSTER HIGHWAY CORRIDOR INTERPRETIVE STRATEGY

VOLUME 1: Background Report

for

The Department of Tourism
and the
Dempster Highway Corridor Technical Study Team

A joint venture study by:

NORTHERN BIOMES LTD.
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JACKSON AND JOHNSON HERITAGE RESEARCH AND CONSULTING LTD.

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Preface

The Dempster Highway provides an experience that is unique in North America, possibly in the world. It is the only public road to the Arctic Circle and beyond. On the way, the highway passes through a host of features: landscapes that escaped the effects of glaciation; spectacular flower meadows and rolling tundra; the winter home of one of the world's largest caribou herds; the summer nest sites of great birds of prey like gyrfalcons, peregrine falcons and golden eagles; through mountains, pingos and on to the Mackenzie River - the largest river system in Canada. The Dempster Highway passes through the ancestral lands of native peoples - lands still used today for subsistence means, along the route of the Northwest Mounted Police dogsled patrols, and crosses the Eagle River just a few kilometres from where the "Mad Trapper of Rat River" met his end. The highway lends access to the northern communities and their rich cultural heritage. At Fort McPherson, Arctic Red River, Old Crow, Aklavik, and Inuvik are opportunities for travellers to learn first-hand of lifestyles and cultures of the Gwich'in and Inuvialuit. The Dempster Highway has tremendous potential for development as a world-class destination.

The Interpretive Strategy for the Dempster Highway Corridor is a framework for interpreting the incredible natural, human and cultural heritage of this area. The objective of the Strategy is to enhance the quality of a visitor's experience on the highway while safeguarding the values that make the region so attractive and fragile. The Strategy evolved over the course of meeting with government officials, native community representatives, and other interested parties, and, consulting printed material. The project team researched and identified target audiences and their needs; synthesized a vast assemblage of research into interpretive themes and stories; evaluated a wide range of options for interpretation; and assessed potential impacts.

The Interpretive Strategy proposes a wide range of interpretive options incorporating many proven techniques such as personal interpretation, highway stops with signs, displays, videos and audio tapes, as well as innovative options which focus on involving commercial operators and community residents. The Strategy also provides a discussion of constraints and concerns and identifies priorities, order of magnitude costs, and possible phasing options. Implementation of the Interpretive Strategy for the Dempster Highway Corridor would enhance the visitor experience to one of the more spectacular areas in North America.

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This project was contracted by the Yukon Department of Tourism, Development Branch. The study team appreciated the guidance provided by the client group and the Dempster Highway Corridor Technical Study Team. The following individuals participated in the project directly, while a full list of contacts is provided in an Appendix.

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1.0 INTRODUCTION

1.1 CONTEXT FOR THE INTERPRETIVE STRATEGY

The Dempster Highway crosses a remarkable region of the Yukon and the Northwest Territories, a subarctic wild land. For much of its length there are few signs of human presence. Once near those few communities on the highway, a traveller realizes that people have lived in the area for centuries, yet left few traces on the pristine land. The highway crosses a land that is sensitive to change and slow to recover.

The 740 kilometers of this gravel road were completed only 10 years ago. Despite this young age and little direct promotion, tourist traffic on the road has increased steadily. The 1988 figures indicate 7000 tourists using the Dempster Highway. Tourism is one of the major sources of traffic on the highway in summer.

The existing services and facilities for tourist traffic are minimal. In addition to two commercial motels offering gas, shelter and food, there are two modest interpretive or information centres and a handful of campgrounds. A seasonal interpretive program is operated at one of the campgrounds. The growing numbers of inquisitive and motivated visitors have indicated a desire for more highway facilities and more information about the area.

The impetus for the Dempster Highway Interpretive Strategy is in keeping with other Yukon Government initiatives. The YUKON 2000 Economic Strategy (YTG 1988) identifies tourism as a major sector of the Yukon economy which should be expanded in future years. The Tourism Action Plan (YTG 1988), which resulted from the Yukon 2000 strategy, acknowledged that tourism development should be market driven. Yukon tourists should be provided with an experience that they want, rather than what is anticipated by planners. The primary goal of the Tourism Action Plan is to emphasize potential growth markets while servicing continuing proven markets. According to the Plan, development or expansion of new tourist attractions should be internationally competitive, offer high quality destination attractions, include community involvement, Indian participation and balance tourism growth with the potential impacts on the environment.

The Dempster Highway Corridor Technical Study Team (DHCTST) has the mandate to develop a comprehensive management plan for the highway corridor. The Dempster Highway Corridor is a zone eight kilometres wide on either side of the highway (Map 1). This management plan will integrate the concerns of land use planning, cultural heritage management, wildlife management, outdoor recreation, highway maintenance, resident interests and tourism.

As a result of discussions within the DHCTST, the Department of Tourism and the Department of Renewable Resources, it was recognized that an interpretive strategy was necessary for the development and maintenance of appropriate visitor interpretive facilities, services and programs along the highway. The Department of Tourism, Development Branch contracted Northern Biomes Ltd to coordinate and manage the development of an interpretive strategy. This strategy combined the efforts of a Core Team of consultants: Northern Biomes Ltd, J.S. Peepre & Associates, Jackson and Johnson Heritage Research and Consulting Ltd, and Bufo Incorporated.

1.2 DEFINITION OF INTERPRETATION

Interpretation is a communication process. Its primary objective is to transmit information in such a way as to reveal meanings and relationships. Ideally, interpretation is a first-hand experience. In interpretation, the transfer of information is secondary to placing this information in a context that has meaning to the participant. Interpretation differs from education in that it is characterized by an informal learning environment for a volunteer audience who have not chosen an activity specifically or solely to be informed.

An important secondary objective for interpretation is to favourably affect public attitudes. This latter objective often results in interpretation being used as a tool for management and/or recreation. Interpretation is also frequently an adjunct to tourism.

In the evolution of an interpretive strategy, one of the key tasks is to identify themes. Themes and other categories of information, such as subthemes and stories, are the actual units of information that will be transferred to visitors. This information must be organized into manageable parts to become the basis of the communication process. After the identification of themes comes the evaluation of options for interpreting them which may include the identification of appropriate sites. Interpretive options are evaluated in the context of visitor characteristics and travel patterns. Interpretation is a dynamic process that must change in response to visitor aspirations, new conditions and information. The client gave the study team clear direction to prepare a market driven interpretive strategy, one that will reflect the needs of the Dempster Highway traveller now and in the future.

1.3 STUDY OBJECTIVES

The study area includes the length of the Dempster Highway from Dawson to Inuvik. The Dempster Highway Interpretive Strategy is intended to form the basis from which further detailed planning and eventual interpretive programs may be derived. Interpreters may use the subthemes and stories immediately to help with existing interpretation programs. The final user of the information in the strategy will be the Dempster Highway traveller, called the audience in this report.

The Strategy emphasizes minimal environmental impact and the protection of the unique wilderness characteristics of the Corridor. The report emphasizes the Yukon portion of the Dempster Highway, although the strategy was prepared with the entire length of highway in mind. The study team cooperated with tourism and interpretive planners in the NWT, and met with representatives of communities. An Interpretive Plan for the NWT portion of the Dempster Highway has been prepared by consultants in Inuvik (Hill 1988).

This Interpretive Strategy reflects the views of the many different agencies, groups, communities, and individuals contacted during the study. Communities, private enterprise, and native organizations may have their own interpretive plans and while the study team has attempted to address these initiatives and concerns, no assumptions are made regarding the acceptance of this Strategy. The Strategy is, however, a framework from which many interpretive plans and programs could be implemented by different interests. A summary of views representing the groups and individuals contacted is provided in the Appendices.

The project objectives were:

- 1) to assess the interpretive potential of natural, historical and cultural features of the Dempster Highway Corridor;
- 2) to assess the present and future characteristics and travel patterns of Dempster Highway travellers and incorporate this information into the interpretive strategy;
- 3) to describe the means for dissemination of information, interpretation and education about the interpretive features and their conservation and management;
- 4) to provide information to guide future planning, development, management and maintenance of the interpretation of the Corridor's interpretive features;
- 5) to provide options for interpretive media for the selected themes and stories relating to the Corridor's interpretive features and;
- 6) to protect the unique wilderness character of the Dempster Highway Corridor while acknowledging the special opportunities for tourism, recreation and interpretation.

The project involves development of a strategy and so does not provide detailed plans or site designs. The recommendations for the strategy suggest a number of ways to interpret the features of the highway area while addressing audience needs and protection of wilderness values.

The interpretive strategy preceded the development of a management plan for the corridor. The development of the interpretive strategy, however, could not be isolated from general management concerns such as wildlife, land use and land claims. The study team did not focus on these issues except where they were related to the interpretive strategy. This strategy should be integrated into any future Dempster Highway management plan.

1.4 APPROACH

An important aspect of the project design was to integrate the audience characteristics and travel patterns with interpretation opportunities provided by the cultural and natural history features along the Dempster Highway. The approach to the project was to combine a Core Team with the expertise of Resource Specialists. The planning work was completed on a cooperative basis by all Core Team members, while each was responsible also for specific topics. The Core Team members and responsibilities are outlined below.

Northern Biomes Ltd

- project management
- natural resources assessment
- storyline preparation
- interpretation planning

J.S. Peepre & Associates

- project co-management
- tourism profile
- implementation constraints & costs
- interpretation planning

Jackson and Johnson Heritage Research and Consulting Ltd

- human and cultural assessment
- storyline preparation
- interpretation planning

Bufo Incorporated

- interpretative theme development
- interpretive media evaluation
- interpretive site evaluation
- interpretation planning

The Resource Specialists included the following individuals:

Ruth Gotthardt
Karen McKenna
Gladys Netro

- archaeology, paleontology
- abiotic natural resources
- native culture and heritage, band liaison

Hector MacKenzie
Dick North

- wilderness tourism, adventure travel
- Euro-Canadian history of highway area, personal research files

Nancy MacPherson
Lazarus Charlie, Elder

- land use and conservation issues
- detailed knowledge of area based on first hand experience and passes on through oral traditions

1.5 REPORT ORGANIZATION

The interpretive strategy is presented in two volumes. Volume 1, Background Report, is a detailed reference document describing research results, the themes and stories, and a complete list of proposed interpretive activities and sites. Volume 1 is a reference document for technical use.

Volume 2, Summary Report, is a synopsis of Volume 1. Volume 2 is intended for general readership, highlighting the development of the strategy and its recommendations.

The interpretive strategy was developed through a series of progressive steps. The report is arranged in this same progression. A brief overview of the report organisation is provided to assist the reader with finding information in the report.

Section 2: Audience Profile:

The characteristics and travel patterns of the present and future travellers on the highway were identified and evaluated. This analysis guided the study team in the evaluation of appropriate interpretive services, programs and facilities.

Section 3: Interpretive Inventory:

An interpretive inventory of the natural and human/cultural features of the area was compiled, through extensive interviews with informed individuals as well as a literature review. It was recognized that extensive documentation of the cultural history of the Dempster Highway area was lacking, consequently this project placed a strong emphasis on collecting and compiling information to further the documentation. The summary inventory of the interpretive features serves as the foundation for the development of the themes and stories of the strategy.

Section 4: Interpretive Themes, Options and Strategy:

The inventory information was organized and woven into an assemblage of themes, subthemes and stories. The subthemes and stories depict the unique features of the Dempster Highway and are the basis of information to be conveyed to the highway traveller in a number of different interpretive media.

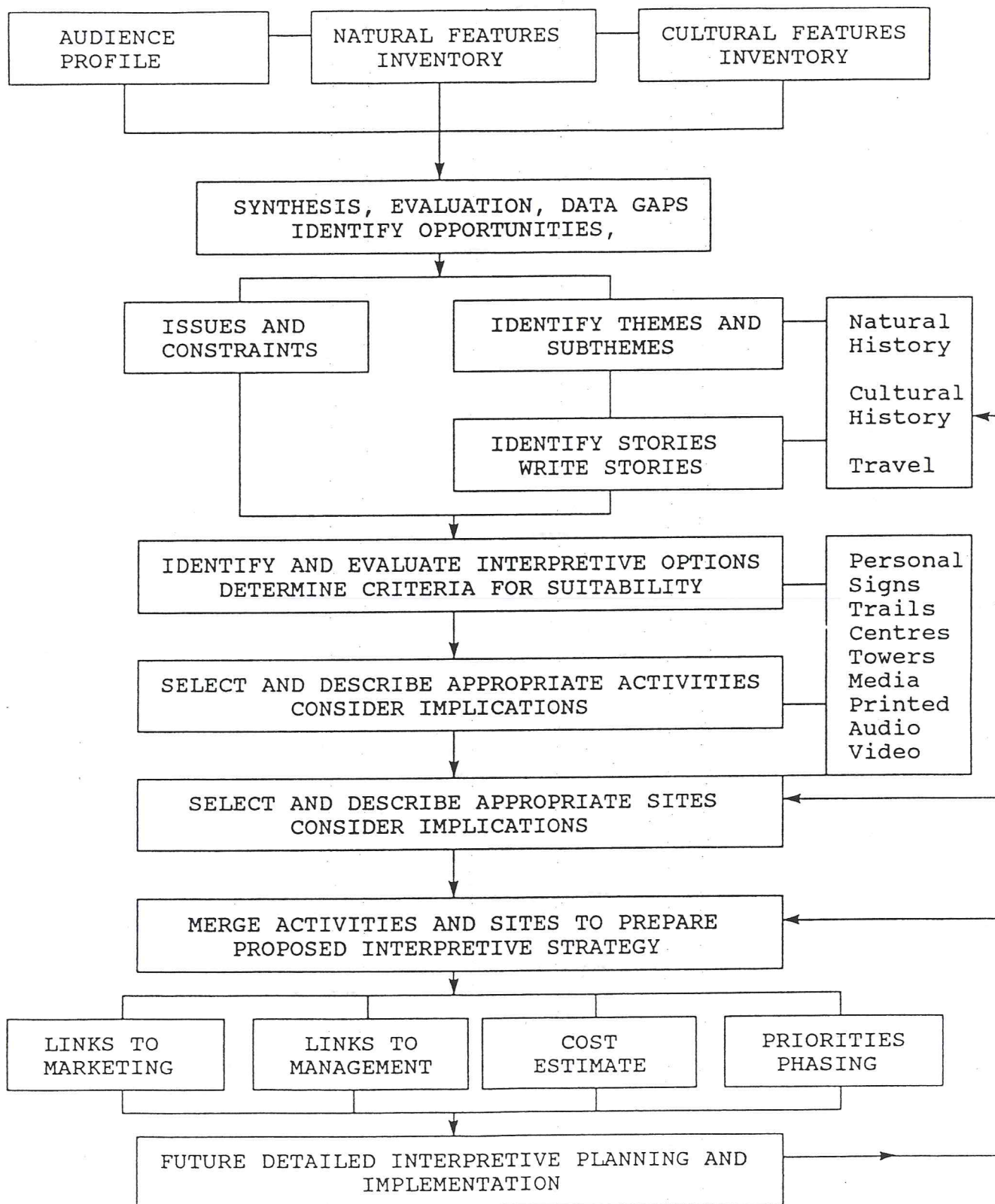
Several interpretive options are discussed in the context of the Dempster Highway setting and the characteristics of visitors. Implementation constraints such as environmental, land use, or maintenance concerns are outlined with possible actions suggested.

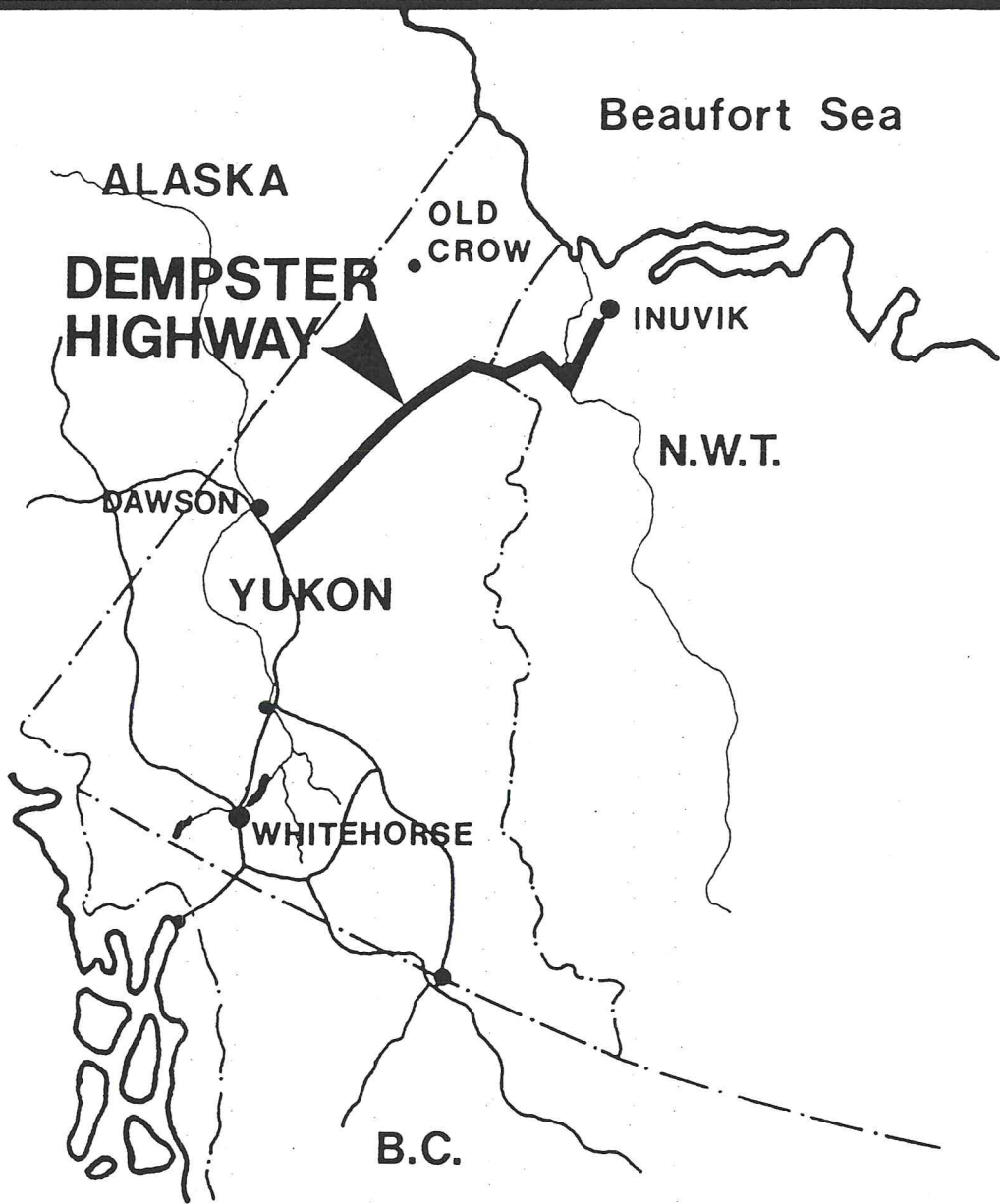
The interpretive strategy itself is presented as a series of proposed activities and sites. Recommendations are made for activities including personal interpretation, audiotapes, video and printed materials. A number of stops along the highway are recommended as the best places to convey certain stories of the various themes. The interpretive strategy concludes with a summary of order of magnitude costs, phasing and priorities.

Appendices

The Appendices contain detailed information on audience characteristics, results of interviews, an archaeological background, species lists, and most importantly, all of the interpretive stories. A bibliography and detailed maps of the interpretive features and sites are also found in the Appendices.

TABLE 1. INTERPRETIVE STRATEGY PLANNING PROCESS





ALASKA

Beaufort Sea

**DEMPSTER
HIGHWAY**

OLD
CROW

INUVIK

N.W.T.

DAWSON

YUKON

WHITEHORSE

B.C.

STUDY AREA MAP

2.0 AUDIENCE EVALUATION

The Dempster Highway winds through a striking and varied landscape with unusual geology, flora, fauna and cultural history. The long gravel road journey is alive with the northern wilderness mystique, creating a distinctive travel experience for tourists and residents alike. These special conditions appeal to the present target audience, while the highway management strategy and interpretive plans will help attract the traveller of the future. The balance between the needs of the target audience and the protection of the environment is one of the main visitor management issues.

Dempster Highway travellers as a group have many common motivations to drive the highway, yet the visitors consist of a diverse range of individuals representing distinct tourist market segments.

2.1 BACKGROUND

2.1.1 Objectives

The objectives of the target audience evaluation were to:

- allow for the preparation of a market driven interpretive strategy,
- assess the characteristics of visitors to the Dempster Highway area,
- assess current visitor traffic volumes and patterns and examine future potential trends,
- assess the demands of visitors for interpretation, information and related outdoor recreation activities and facilities along the Dempster Highway,
- develop a visitor profile to aid preparation of the interpretive strategy,
- provide a market summary and assess future trends,
- evaluate Dempster Highway destination relative to other similar destinations,
- to review potential environmental, social, and economic impacts of increased visitor numbers, interpretation facilities and activities in the Dempster Highway area.

The target audience analysis provides background information on tourist and resident travel motivations, demographic characteristics, mode of travel, perceptions about the Dempster Highway and the level of visitor satisfaction. These aspects have been studied frequently to the point where there are sufficient common data trends to clearly distinguish Dempster Highway visitors from the average Yukon traveller and provide guidance in determining an appropriate interpretive strategy. The study focuses on the Yukon but the strong connection to the Mackenzie Delta, Inuvik, the North Slope and Herschel Island is recognized. Note that the audience profile is divided into two parts, with Section 2 written as a summary and analysis and Appendix 5.1 providing a literature review and detailed outline of the information supporting the Section 2 statements.

Definitions include:

- Tourist;** A visitor to the Dempster Highway who may be either a Yukon resident or non-resident. The report distinguishes between visitors and residents of the highway corridor, and further compares resident and non-resident tourists. Classical definitions of tourist include anyone who has travelled more than 80 kilometres from home to a destination,
- Market;** A specific segment of a population defined by origin and socio-economic variables that is inclined to purchase a product,
- Product;** A specific service, object, or opportunity available at a unit price to potential customers. In the Dempster Highway context, the landscape and its relationship to the viewer could be defined as a product,
- Package;** A series of products assembled in a logical, integrated fashion at a unit price,
- Outdoor Recreation;**
- Outdoor recreation includes any outdoor leisure activity engaged in by residents and non-residents, and hence tourists and local highway inhabitants.

2.1.2 Methods

The Dempster Highway target audience evaluation combined results of visitor questionnaires, opinions of government staff, non-government groups and commercial agencies, reviews of promotional literature, and interviews with key individuals knowledgeable about the route. The Visitor Exit Survey (YTG 1987) provided recent data and a separate computer analysis of Dempster Highway area visitors was completed. The computer analysis yielded interesting trends but the numbers should be treated with caution since the Dempster Highway area sample size was small. Information from a wide variety of studies is used throughout the analysis. These are listed in Appendix 5.1 and where warranted are referenced the text.

The reliability of information from all sources varied according to the type of study and the statistical validity of sample design and sizes. Analytical problems with some previous studies included the omission of certain visitor activities such as culture appreciation or interpretation during the survey process. The overlapping and sometimes confusing questions and categories of information in the various surveys was not conducive to statistical comparison of results.

A further shortcoming of available data is the lack of information on Yukon residents who compose 14% of Dempster Highway travellers. In spite of the variable data, the audience evaluation for this study has merit since it draws on a wide range of previous work in combination with an analysis of new trends.

A literature review and summary of interviews is included in the Appendices to supplement the description of target audience characteristics in Section 2.0. For example, the literature review contains an outline of surveys completed at the Dempster Interpretive Centre during 1986-1988.

2.1.3 Traffic Volumes and Seasonal Use on the Dempster Highway

The Dempster Highway was opened only ten years ago and major construction has taken place during several summers since the initial opening. Tourist use of the highway has increased steadily since the first hardy visitors drove to Inuvik. It is now a widely known tourist destination and route to the Western Arctic, as well as a conduit for goods and services.

The Visitor Exit Survey (VES 1987) indicated that approximately 7,130 visitors stopped in the Dempster Highway area, comprising about 4% of total Yukon visitation. Approximately 75% of this total number of visitors on the Dempster Highway stopped in Inuvik. In comparison, 57,377 travellers stopped in Dawson City comprising about 30% of the total.

According to traffic counts at the Peel River crossing in the N.W.T., there was a 62% increase in traffic from 1986 to 1987, with 2,050 vehicles counted between June 6 and September 30 of 1987. Assuming a party size of 2.8 per vehicle as used in the study, 5,740 visitors crossed the Peel River in the summer of 1987. As noted above, the VES (1987) indicates a total of more than 7,000 in the Dempster Highway area during the same period. The discrepancy may be due to the fact that a large number of travellers only went as far as Tombstone, Engineer Creek, Eagle Plains, or the Arctic Circle. Traffic statistics for 1988 on the Yukon portion of the highway were not available at the time of writing.

The summer traffic volumes for the purposes of this study are assumed to be in the order of 7,000 - 8,000 individuals, while shoulder and off-season use is negligible by comparison. A second small peak of use occurs with fall hunting, but can be measured in the hundreds. Industrial and local traffic is assumed to be relatively constant except for the summer construction season. As described in the section on market growth, some studies suggest that summer traffic volumes may increase by 30% per year over the short term easing to 15% per year in the long term.

Earlier studies found that 45-50 vehicles per day passed Eagle Plains Hotel (Crombie 1982). The Dempster Interpretive Centre reports indicate 30-35 visitors per day, with peak days at more than 40 visitors. Visitation to the centre nearly doubled from 1986 to 1987, then remaining at about 2,500 in 1988, while Dempster Highway traffic volumes have undulated but increased over recent years (McEwen and Staniforth, 1986, McEwen and Majiski, 1987, PRP, 1988).

2.2 DEMOGRAPHIC CHARACTERISTICS

2.2.1 Origin

The VES (1987), the Dempster Exit Survey (DES 1986) and the Peel River Crossing Survey (GNWT 1987), found the following origins for people stopping in the Dempster Highway area:

(See also Figure #1)

Origins of Dempster Highway Visitors

Origin	'87 Visitor Exit Survey	'86 Dempster Exit Survey	'87 Peel River Crossing Survey
Canada	63%	58%	58.7%
U.S.A.	29%	38%	40.1%
Other	8%	4%	1.2%

These figures contrast dramatically with visitor origins to Dawson, where 30% were of Canadian origin and 61% were American (VES 1987).

In the Dempster Exit Survey (DES 1986), the majority of Canadian visitors were from Alberta, British Columbia, Ontario and the Yukon. The most significant U.S. origin was Alaska, followed by California (See Figure #2).

The 1987 Peel River Crossing vehicle count found similar patterns yet only 1.2% were from overseas (GNWT 1987). The overseas count can be discounted as a true representation of overseas travellers since many of these tourists rent vehicles bearing Canadian or American license plates. A review of the various exit surveys during the last three years, indicated the number of Canadian visitors has decreased slightly and the U.S.A. and overseas visitors have increased slightly (VES 1982 and 1987, DES 1986, GNWT 1987) The increase in European travellers on the Dempster Highway was corroborated by interviews with Visitor Reception Centre staff and hoteliers.

In the Peel River study, the majority of Canadians were from British Columbia, Yukon, and Alberta. Travellers from Ontario, the Prairies and Quebec accounted for most of the Canadian balance. Of the American vehicles, most were from California, or Alaska, with fewer from Washington, Michigan, or Florida.

Talarico's (in preparation) study of the 1988 Dempster Interpretive Centre visitors indicates a decline of Canadian visitors from 48% in 1986 to 43% in 1988, with an increase in the numbers of American, German and Swiss travellers. European and other overseas visitors accounted for 14% of the surveyed group. This trend was also suggested by the DES (1986).

Figure #1

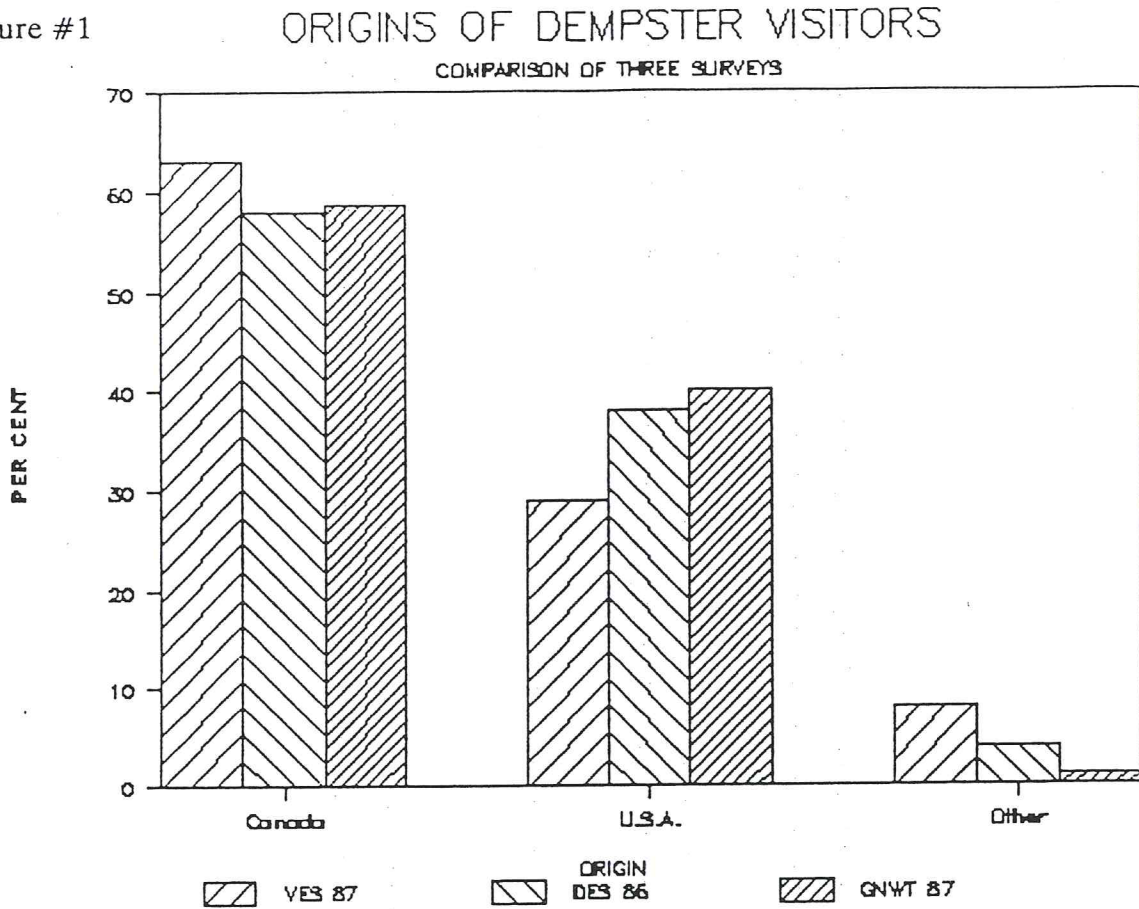
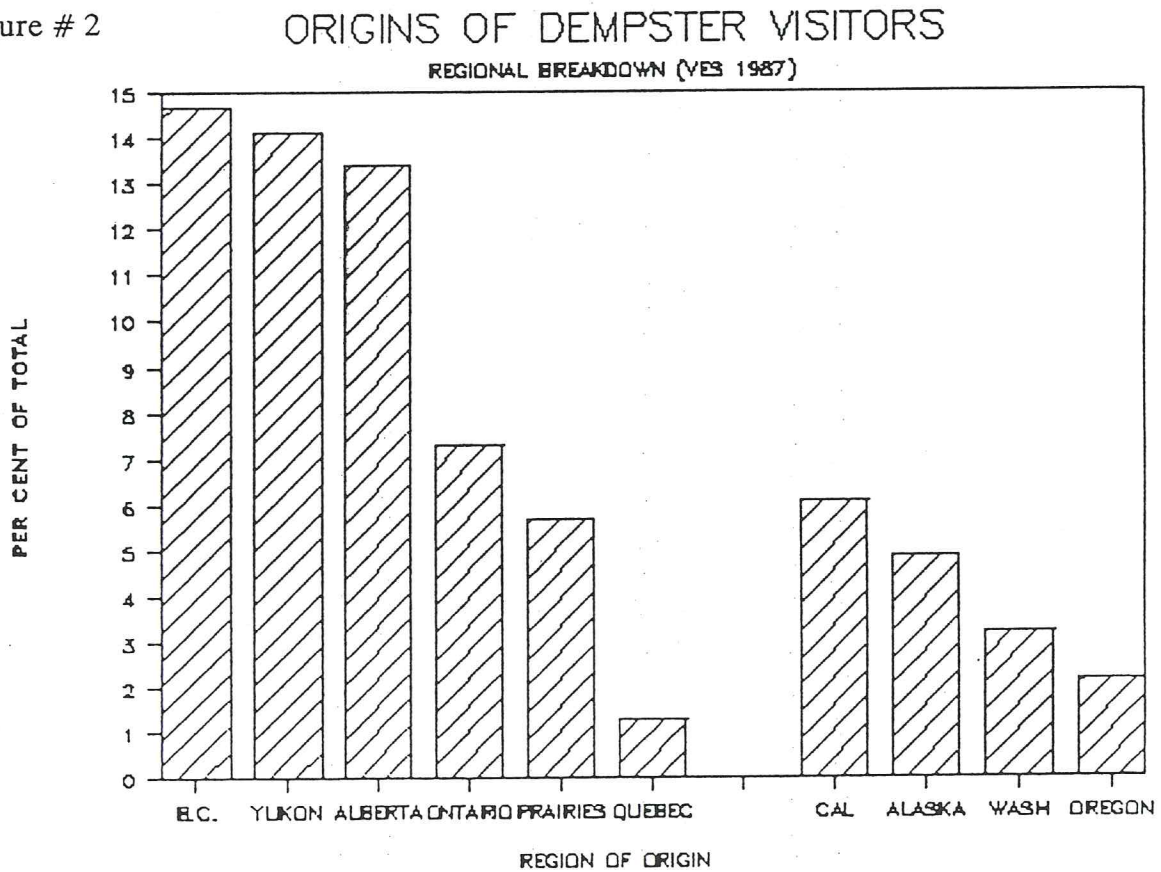


Figure # 2

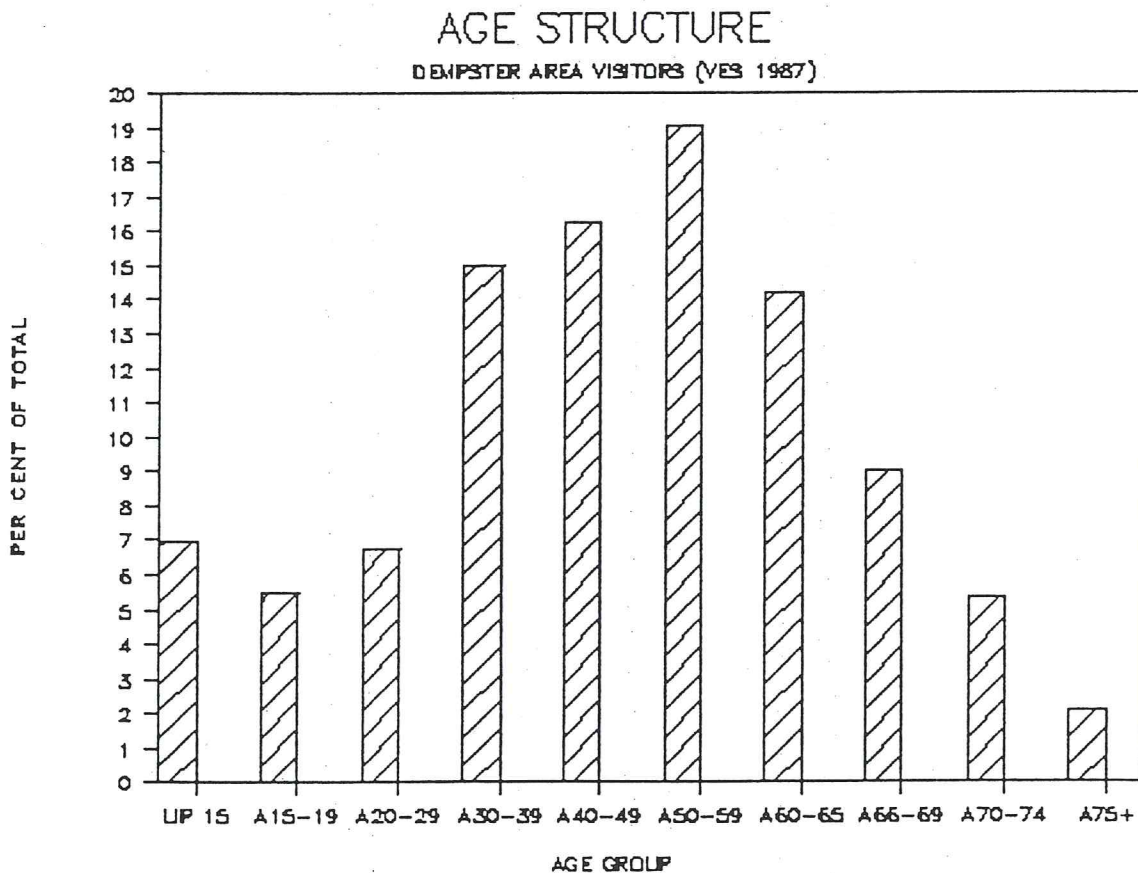


2.2.2 Age and Sex

The average age of visitors is in the 35-40 years old group, while there are a large number of retired visitors over 55 years (VES 1987).

The Dempster Highway visitors are older than the general resident population, but younger than the age profile of the average Yukon tourist. Almost 37% were over 60 years of age, while 35% were between 40 and 60. The fact that 21.5% were between 26 and 40 years old suggests a significant market segment consisting of young people. There were slightly more males than females.

Figure #3



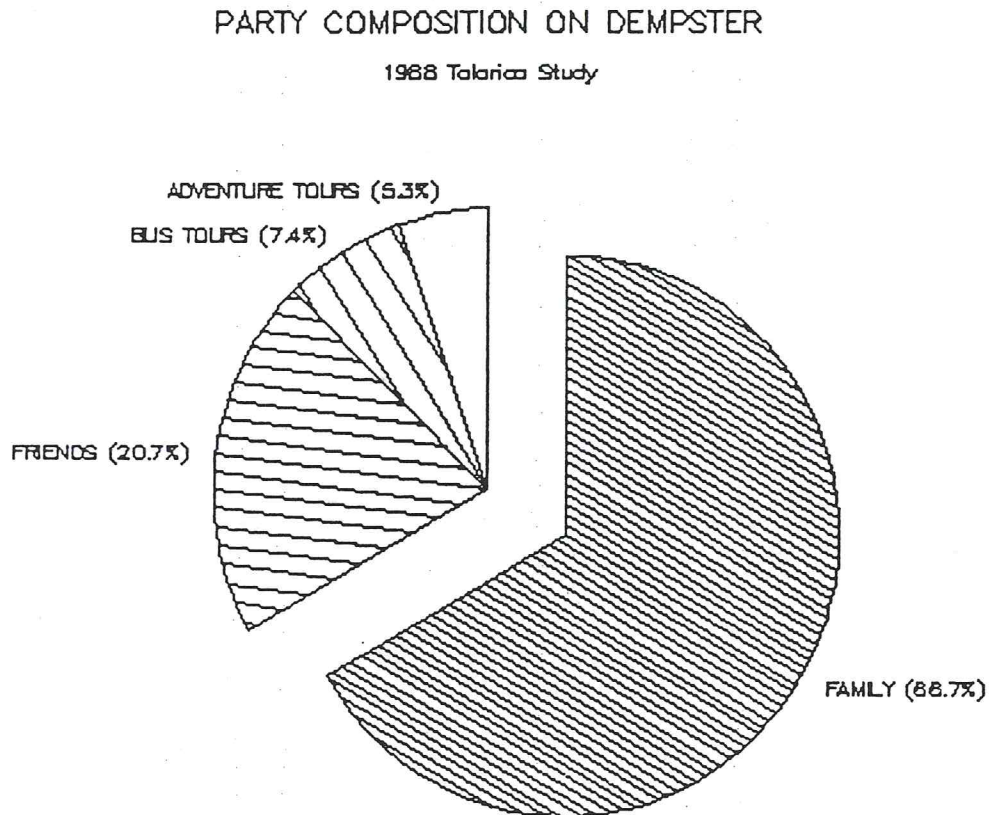
2.2.3 Party Size and Composition

The party size on the Dempster Highway was found to be 2.2 people in 1987, slightly less than the 2.8 indicated by the 1986 Dempster Exit Survey. This figure can be significant when estimating facility requirements or other programs. According to the 1987 Visitor

Exit Survey, different paths travelled by tourists are characterized by varying numbers of visitors per vehicle. (See Section 2.4.3)

According to Talarico (in preparation), the large majority of visitors travel with a family group, while the next biggest group travel with friends. Bus and adventure tours account for the remainder of the parties.

Figure #4



2.2.4 Education and Occupation

The large majority of visitors on the Dempster Highway are professional, skilled workers or retired, with small numbers in managerial occupations. As is confirmed by all visitor studies used in this report, the majority of bus passengers are retired, whereas those travelling by car, camper or truck, are employed. More of the American visitors are retired than Canadians. This suggests that many Canadians may be on fixed holiday schedules of shorter duration than Americans.

Dempster Highway visitors are well educated, with 49% indicating more than a high school education (VES 1987).

2.3 ACTIVITIES AND ATTITUDES

The most important reasons for deciding to visit the Yukon are to see wildlife in their natural habitat and experience the wilderness. The notions of "always having wanted to visit the Yukon" and "visiting the Yukon en route to Alaska" are also important, depending on which travel pathway, as defined in the VES (1987), is taken. Learning about cultural heritage was not cited as a strong motivator in the 1987 Exit Survey, either because of a lack of available information or a perceived lack of interesting heritage. The Klondike was mentioned in a specific category, but was not as strong a reason as wilderness or wildlife. These reasons are cited for the entire Yukon, but are particularly relevant to the Dempster Highway since the attractions of the route can be put in perspective relative to overall travel motivations.

In 1988, most people who visited the interpretive centre came to have an Arctic wilderness adventure as a first choice, while many came to drive across the Arctic Circle (Talarico, in preparation). A little less than 20% came mainly to see the flora or scenery, although this category may overlap with the wilderness adventure aspect. More than 7% of those who visited the centre wished to view wildlife as their first choice, yet the majority indicated wildlife as one of the top priorities.

The activity categories with the highest levels of satisfaction by tourists in the Yukon are guided fishing, boating, hiking day trips, backpacking, wilderness sightseeing, visiting museums and historic sites, highway touring and guided hikes and tours (Various studies, 1982-1988). Wildlife viewing is only moderately satisfactory, a fact reflected by every study done in the Yukon or along the Dempster Highway.

Of visitors to the Yukon, and of planning relevance to the Dempster Highway, studies reviewed show that:

- 10% or less participate in hiking or trail riding,
- 10-15% of travellers on all pathways participate in **guided hikes and tours**. For example, all Dempster Highway bound tour passengers of Horizon Tours fly in to or out of Tuktoyaktuk on a package tour. Hiking, although participated in by less than 10% of all visitors, is sometimes a component of guided tours,
- car, truck, camper/trailer travellers and bikers have a high participation rate in day hiking. R.V. and bus passengers do not participate very often,
- Canadians are more likely to participate in day hiking than Americans, but Europeans indicated even higher levels of participation. This is notable since the majority of Dempster Highway travellers are Canadian; it could affect the types of recreation and interpretive opportunities sought,
- Dempster Highway travellers are far more interested in day hiking than the average tourist, although there are conflicting data on this aspect,
- 50% of two way travellers participate in wildlife watching and wilderness sightseeing, while 37% of one way travellers do so. This may reflect tight bus tour schedules,
- wildlife watching and wilderness sightseeing is participated in by 38-50% of travellers using all modes of travel, and a similar pattern is recorded for visiting museums and historic sites,

- 10-15% of travellers on all pathways participate in native cultural events,
- visiting historic sites has not been a high profile activity on the Dempster Highway to date, yet interviews with tourist hosts suggest that significant numbers of visitors enquire about human heritage and present day occupants of the area,
- 35-45% of travellers on all pathways visit museums and historic sites,
- more than 80% of Interpretive Centre visitors participate in photography, with up to 40% participating in bird-watching,

These general trends can assist in further market evaluations for the Dempster Highway to determine the cost effectiveness of programs and facilities relative to the numbers of visitors likely to use them.

2.4 MODE OF TRAVEL

2.4.1 Travel Planning and Information

Advance Planning

The large majority of Dempster Highway travellers obtain information on the area prior to leaving home, but as many as 20% decide after obtaining information in the Yukon (VES 1987). Most people obtain information from the Yukon Government or a travel agent. Word of mouth is an important source of information and is further relevant since repeat visitors may bring friends or family on the second trip to the area. In addition to other traditional sources of information, the survey indicated that The Milepost and travel books were commonly used. (See Figure #5)

Information During Travel

Most visitors obtained travel information during their Dempster Highway trip, with the large majority using government reception centres. Word of mouth was frequently cited, while maps, brochures, museums, and tour drivers and guides were also mentioned.

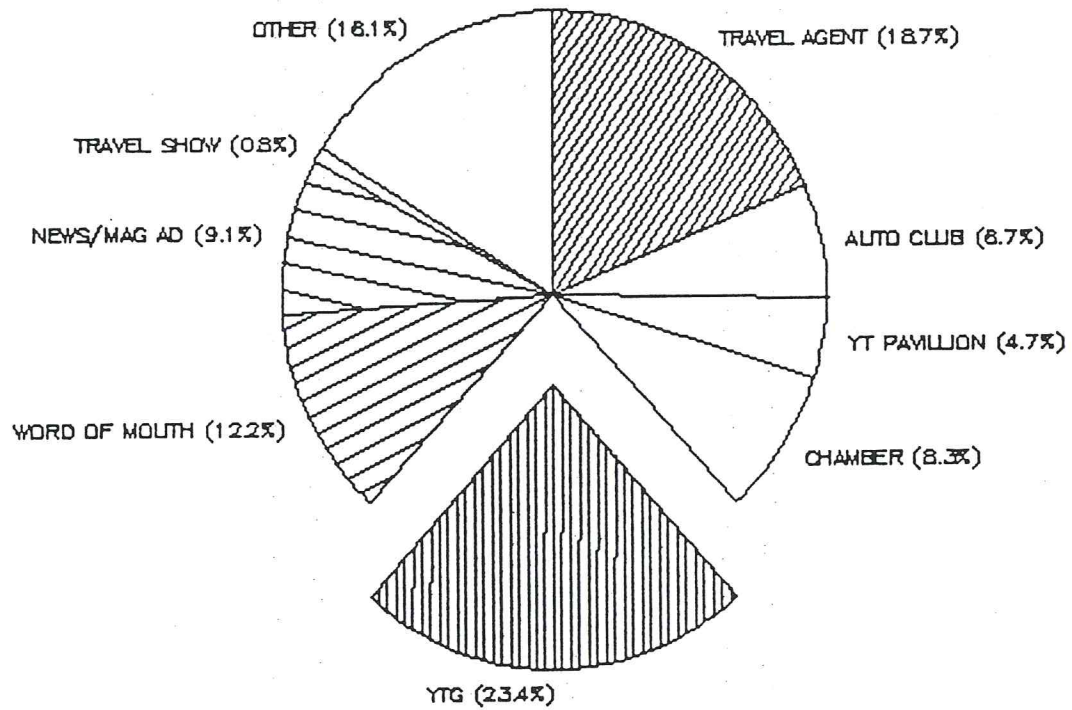
2.4.2 Mode of transportation

The most popular mode of travel on the Dempster Highway in 1987 was by car or truck combination, followed closely by camperized or trailing vehicles. A very small proportion of visitors used R.V.'s on the Dempster Highway, while significant numbers were on bus tours. (See Figure #6). The visitors to Dawson favoured bus travel and R.V. modes more, although 26-27% used cars, trucks, and camperized vehicles.

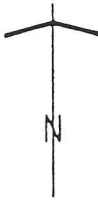
In 1988, 18% of visitors to the Dempster Highway Interpretation Centre at Tombstone Campground were from tour groups, an increase of 5% from 1986. The number of visitors using commercial services in the Dempster Highway area is increasing, particularly in the adventure travel sector. Highway touring companies provide services by bus and smaller vans, usually with air access or departure from Whitehorse or Inuvik. Boat tours, fixed wing and helicopter tours, as well as backcountry raft or canoe trips are provided by various companies in the Dempster Highway area. The commercial sector is described fully in Section 2.3.5

Figure #5

DEMPSTER TRAVEL PLANNING
INFORMATION SOURCES (YES, 1987)



YUKON N.W.T.



INUUVIK



ARCTIC RED RIVER

FT McPHERSON



Mountains

EAGLE PLAINS HOTEL



Peel R

Ogilvie R

Blackstone R

Ogilvie

Mountains

DAWSON



KLONDIKE RIVER LODGE

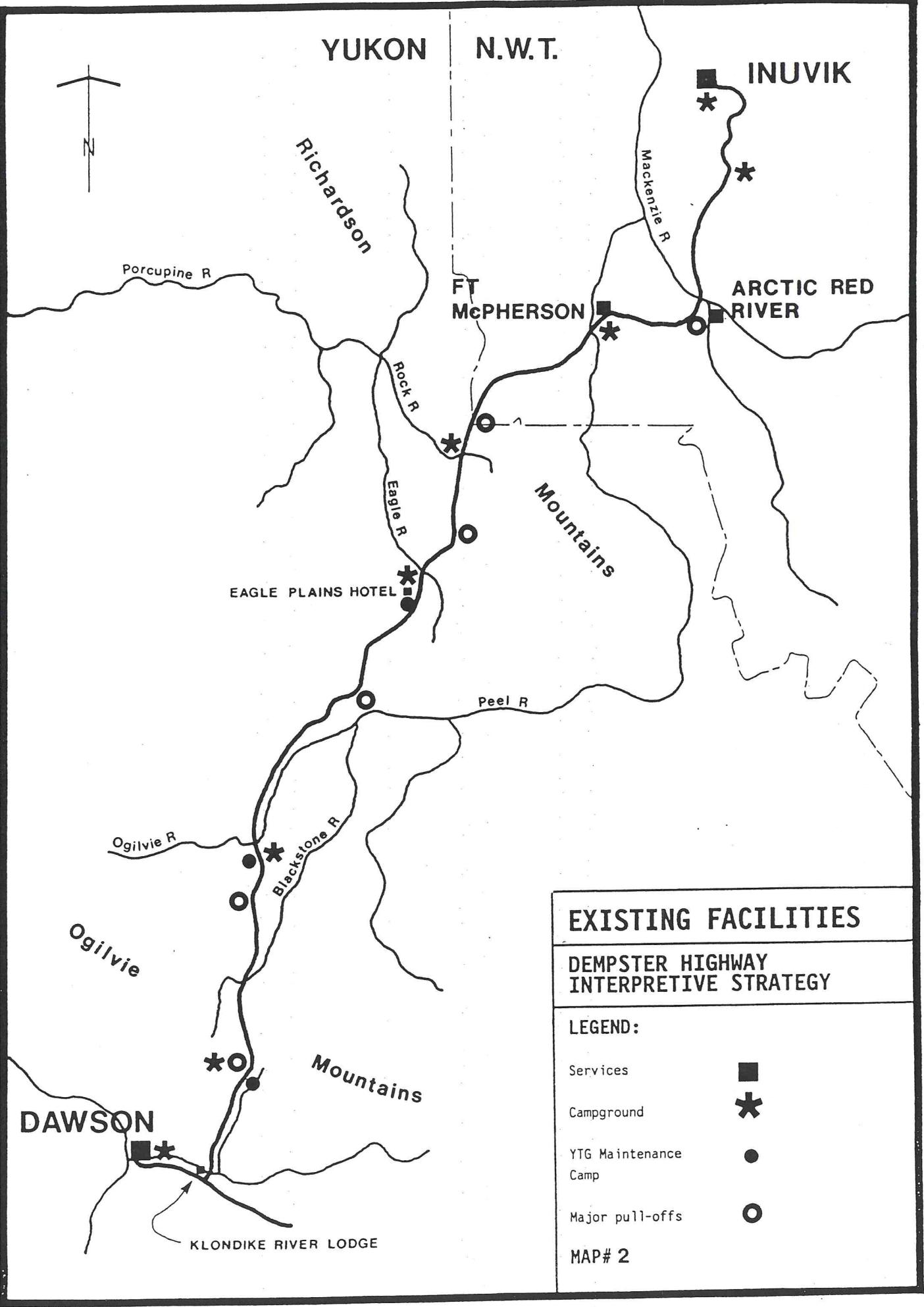
EXISTING FACILITIES

DEMPSTER HIGHWAY INTERPRETIVE STRATEGY

LEGEND:

- Services ■
- Campground ★
- YTG Maintenance Camp ●
- Major pull-offs ○

MAP# 2



2.4.3 Length of Stay, Destination and Pathways

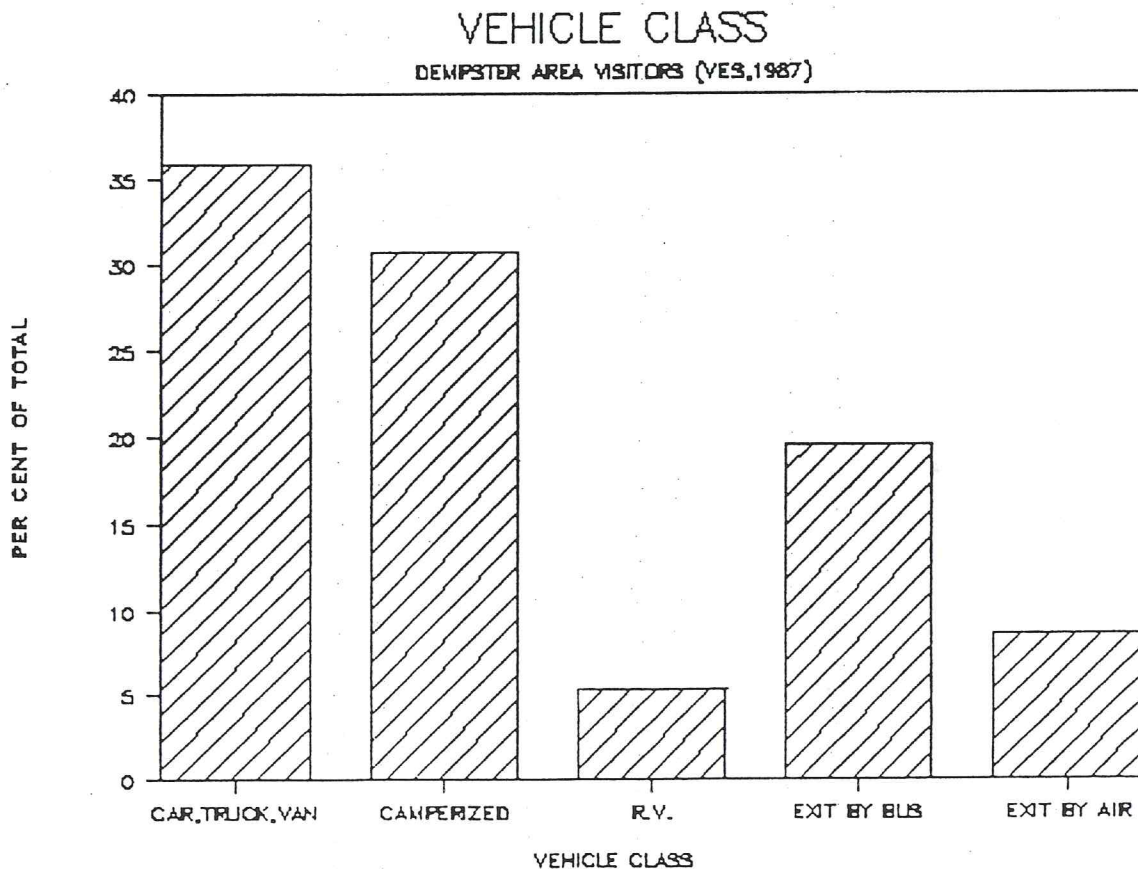
A 70 % majority of Dempster Highway visitors indicate Inuvik as their final destination. This figure is confirmed by all studies that were reviewed. Visitors typically take 3-4 days to travel up the Dempster Highway to Inuvik and back. A significant number travel as far north as Engineer Creek or Eagle Plains before returning, taking a total of 1-3 days. Bus tour passengers, travelling one way, generally spend 2 days on the Dempster Highway and one or two days in Inuvik.

Many visitors to the Yukon perceive the Dempster Highway area as a primary destination linked to the Arctic Circle and the Mackenzie Delta. As the 1987 Visitor Exit Survey shows, many Americans travelled the Dempster Highway as a side trip, while Canadians were more likely to perceive it as one of their main destinations.

Bus passengers on the Dempster Highway travel one way either north or south, arriving and exiting by boat from Skagway or air depending on direction of travel. Obviously, all private vehicle traffic travels both ways on the highway. Most Dempster Highway visitors are on two-way paths through the Yukon.

A small number of visitors, in the order of 100- 150 people, travel down wilderness rivers of the Peel drainage, exiting either north or south on the Dempster Highway. Some arrive by air and participate in adventure tours which include one way travel on the Dempster Highway before or after the 'adventure'.

Figure #6



A computer analysis of the VES (1987), done by the Bureau of Statistics, illustrated the travel pathways of Dempster Highway visitors:
(Refer to Map #2 and Figure #7)

Two-way travellers

Path 2

More than 3,300 visitors, with 50% from the U.S.A. and 49% from Canada used this path with the Yukon as a primary destination. Most travellers used private vehicles to drive the Klondike loop through Whitehorse, Dawson and Tok, with a side trip up and down the Dempster Highway. About 7.5 nights were spent in the Yukon.

Path 3

More than 1,300 visitors from Canadian origins used this path through Watson Lake, Whitehorse and Dawson, returning the same way. The Dempster Highway was a side trip for many of these visitors, but the Yukon was the primary destination. Private vehicles were used by this group.

Path 4

About 225 visitors to the Dempster Highway were on this path consisting of a variety of routes and modes of travel. The majority were Americans, with Canadians accounting for 9% and overseas visitors for 16%. The path is a loop typically entering through Haines, travelling to Dawson and exiting through Skagway, with the Dempster Highway visited as a side trip. Party size was 3, somewhat larger than the average of 2 indicated for other paths.

Path 5

About 115 visitors on this path entered from Tok and travelled the Klondike loop with a side trip to the Dempster Highway. Parties stayed an average of 10 nights in the Yukon, somewhat longer than other groups.

One way travellers

Path 6

This path accounts for the more than 1,200 bus tour passengers travelling from Inuvik to Whitehorse or in the opposite direction. Visitors are primarily Canadians on a pleasure trip with the Dempster Highway chosen as a primary destination.

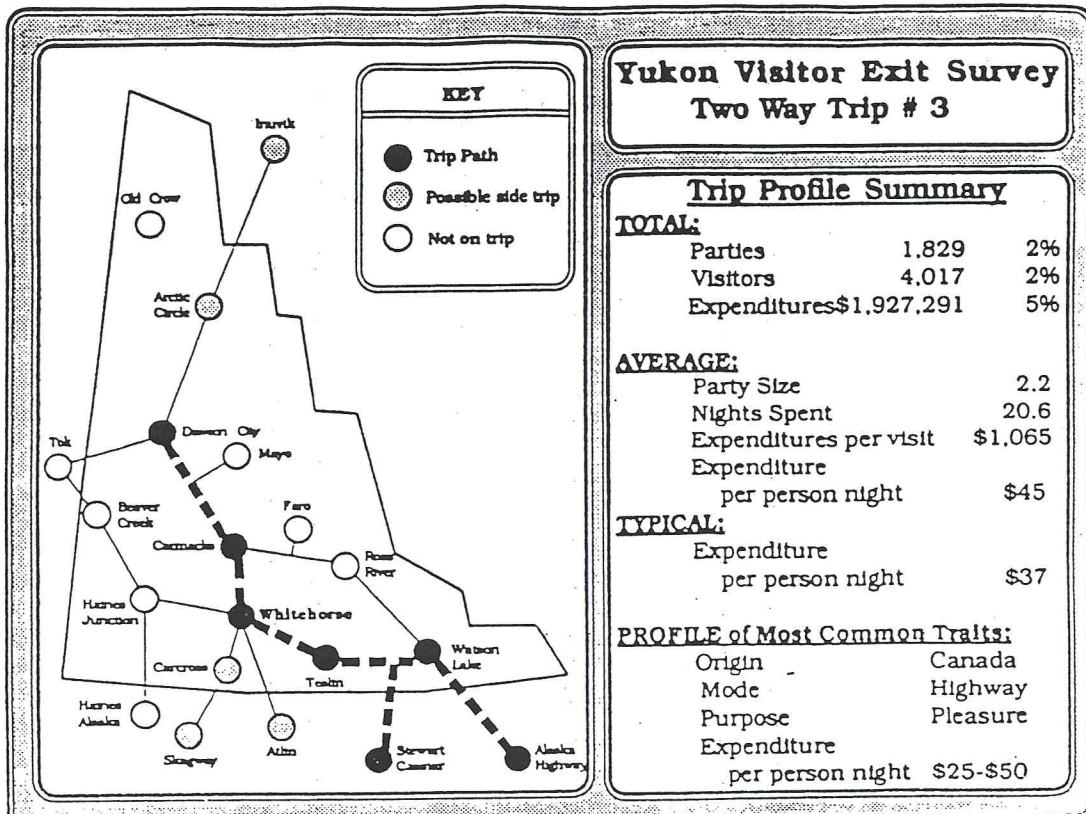
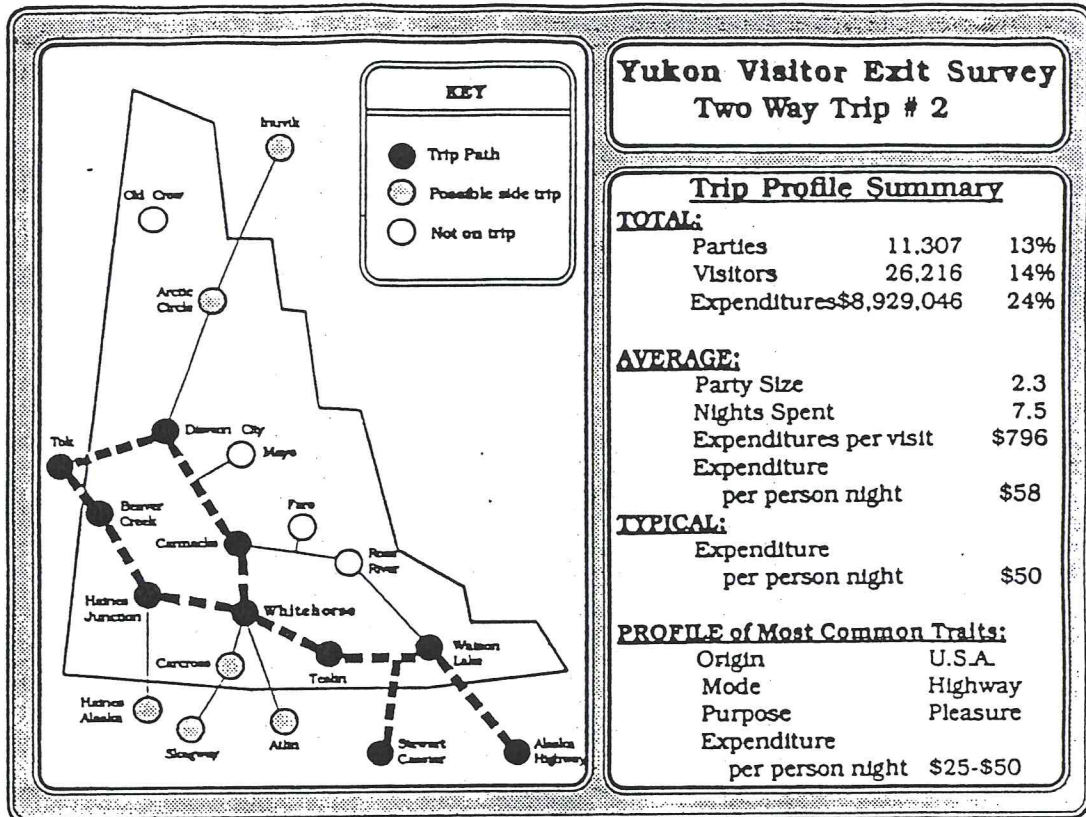
Border Visits and Air Departures

More than 500 visitors travelled at least a portion of the Dempster Highway as part of a border visit, defined as individuals who cross the Yukon border and who then return to the same point of entry. These visitors were mainly Canadians flying to Whitehorse, then taking side trips by private vehicle.

Air departures accounted for approximately 80 visitors, with this path defined as a mixture of modes and purposes by individuals who travel within the Yukon and then return to place

of origin by air. The majority of these visitors were Canadians or Americans, although more than 20% were from other countries.

Figure 7. Yukon Travel Pathways (VES 1987).



2.4.4 Return Visits

Almost half of all Dempster Highway visitors are likely to take another similar trip in the next one or two years. This high number is reflected in several studies, although turning positive intentions into an actual trip is a different question. Car, truck, and camper/trailer travellers are more likely to want to undertake a similar trip, than are those exiting by air. Survey results confirm that the actual number of repeat visitors is small, although interviews with hosts and hoteliers suggest that the number may be increasing.

2.4.5 Accommodation

Camping is the most popular form of accommodation for Dempster Highway travellers, either because little choice of accommodation is available or because the type of visitor in the region prefers camping. The 1986 report of the Dempster Highway Interpretive Program suggested that the Tombstone campground was 50% full on most nights, whereas the 1988 study suggested 75% occupancy on most nights with maximum capacity a few times during the summer.

The campground at Rock Creek is reported to be moderately used. The VES (1987) indicates that more than 1,300 visitors use roadsides for camping or overnight parking of vehicles.

Eagle Plains Hotel is used by virtually all commercial tours, and a significant number of private travellers for overnight accommodation. Eagle Plains Hotel was filled to 75% capacity during the peak summer months in the last two seasons, with a second peak during the October - November hunting season (Stan McNiven pers. comm.) Many Dempster Highway visitors use Dawson campgrounds and hotels before and after their trip. A computer analysis of the VES (1987) provided data on use of campgrounds and hotels by Dempster Highway travellers.

Current accommodation capacity on the Yukon portion of the Dempster Highway is:

Klondike River Lodge	10 rooms
Eagle Plains Hotel	32 rooms
Tombstone campground	21 sites
Engineer Creek campground	23 sites
Eagle Plains campground	25 sites
Rock Creek campground	20 sites

2.5 SPECIFIC INTEREST GROUPS

2.5.1 Commercial Tours, Guide-outfitting, Adventure Travel

2.5.1.1 Highway Based Commercial Tours

Horizon Tours based out of Toronto usually plans to run 16 round trips per season on the Dempster Highway, with travel paths from Skagway to Dawson and Inuvik followed by a second group travelling southbound. In 1988, 12 round trips were completed for a total passenger load of 444. Horizon Tours take up to 600 tourists per year on the Dempster Highway and are the only commercial company offering regular coach tours of this magnitude. Demand appears to have been relatively stable during the last several years, but competition from cheaper overseas fare packages creates strong competition for prospective travellers interested in the Dempster Highway (D. Littlejohn, pers. comm.).

The Horizon passengers are primarily English speaking Canadians, although the company indicates a growth in the British market travelling in Western Canada, from 4% a few years ago to 20% recently. According to company managers, passengers are slightly younger than the profile of the average Yukon tourist, but most are retired (D. Littlejohn pers. comm.). Clients tend to be adventurous, enthusiastic and interested in information about the people and environment of the north. There is a relatively high percentage of repeat customers and the great majority are very satisfied with their trip.

Rainbow Tours operating out of Whitehorse schedule 24 one and two way Dempster Highway trips from June to September. The actual number of trips completed varies with bookings received. The trips originate in either Whitehorse or Inuvik and are sold as a wholesale product to other tour operators. Travellers spend 6 days and 5 nights on the trips with a stop at Eagle Plains Hotel or government campgrounds. Vans are used for these trips with an emphasis on personal contact with visitors.

The route is marketed as the "Dempster Highway-Across the Arctic Circle". An "Arctic to Pacific Tour" of 15 days duration is also advertised and includes travel southbound on the Dempster Highway. This marketing approach reflects the lure of the Arctic Circle to travellers.

Other companies run less regular tours on the Dempster Highway in response to demand. Companies catering to foreign tourists have begun to use the Dempster Highway, with German, Swiss and Japanese interests indicated. Swiftsure Tours operates an excursion catering to birders, Canadian Nature Tours, Pathway Tours and Goway Tours have also used the route. A Dawson bus tour company plans to offer Arctic Circle excursions in the 1989 season.

Atlas Tours does not operate excursions on the Dempster Highway, although the company provides bus and driver services to Horizon tours. Atlas Tours are significant to the potential Dempster Highway market since the cruise ship and air combinations they offer with links to the Whitehorse-Dawson-Alaska circuit have some potential for providing side trips to the Tombstone Mountain area.

2.5.1.2 Sightseeing and Interpretation by Air or Water

One of the fastest growing commercial services is the provision of sight-seeing and wildlife observation side trips in the Dempster Highway and Mackenzie area. The recent growth in this sector has been centered in Inuvik with several companies offering tours to Tuktoyaktuk, Aklavik, Herschel Island and other locations. Airplanes, helicopters or river boats are used for these tours. Individually operated tours are also offered from Ft. McPherson where a boat trip on the Peel River is provided on request.

The early success of the Inuvik operations has prompted interest in similar side trips originating from Eagle Plains Hotel. These air excursions could use the Peel River area. The further possibility of tours to Old Crow would provide a commercial link to interpretive opportunities in the mid-portion of the Dempster Highway region.

Most of the commercial side tours have an interpretive component, although the knowledge and skill of each operator determines the quality of the learning experience. There are presently no guidelines for wildlife viewing from the air, nor are operators likely to be fully aware of sensitive habitat sites.

2.5.1.3 Guide-outfitting and wilderness travel

Guide-outfitting and wilderness travel companies in the Dempster Highway area could provide an important service to the growing adventure tourism market. These operations are typically run by small local firms or individuals, while there are a few larger southern companies offering periodic canoe or rafting trips in the region. Commercial adventure travel companies play a role in nature interpretation with some firms catering exclusively to nature enthusiasts. Swiftsure Tours, noted above, is one such company. Many firms use naturalists and scientists on their excursions, ensuring a high quality interpretive experience.

Big game guide-outfitters throughout western and northern Canada have tried to extend their season by offering a variety of summer wilderness adventures. The excursions are frequently by horseback, and provide wildlife viewing and photographic opportunities. Two local firms have tried commercial horseback trips in the Dempster Highway area with limited success, but both feel there is a good future for this type of service in the area (Lowe, pers. comm.). Another firm has organized hiking trips in the North Fork and Tombstone Mtn. area.

Ecosummer Expeditions of Vancouver organized one tour combining interpretation and photography along the Dempster Highway. This company used the Firth River as an adventure travel destination as well. Tour guides indicated the difficulty of stopping and camping in suitable locations on the highway, and the need for information on flora and fauna for the discerning traveller.

Local and out of territory companies offer periodic trips on several routes in the Peel River drainage. These groups usually access the rivers by air from Mayo, then exit on the Peel River at Fort McPherson. The Ogilvie River access is directly from the Dempster Highway. Approximately 100-150 travellers use the Peel drainage annually with a significant proportion of these on guided trips. Canoeists and rafters using these wilderness routes often fit a visitor profile characterized by interest in the natural and cultural heritage of the region.

2.5.2 Yukon Residents

Although most Yukon residents become tourists when they visit the Dempster Highway, there are distinctions in the type of activities pursued. These may be summarized as :

Local residents from Dawson Area

- day or overnight trips to Tombstone or beyond
- hunting, fishing, skiing
- variety of recreation pursuits

Local Residents from Whitehorse Area

- 3-5 day trips in Tombstones
- hunting, fishing, skiing
- variety of recreation pursuits
- canoeing and rafting on northern rivers
- sight-seeing to Inuvik

Truckers

- brief stops
- interpretive activities

Maintenance Crews

- short hikes
- fishing, hunting
- interpretive activities

2.5.3 Interest Group and Tourist Views Summary

A summary of interest group and tourist views reveals perceptions about the Dempster Highway and its users not available in the statistics. Complete interview outlines are provided in Appendix 5.1 (VES 1987, Talarico 1988, in preparation). The comments illustrate perceptions about government and private services, litter, information and many other aspects relevant to a Dempster Interpretive Strategy. Most visitor comments about the Dempster Highway and the Yukon experience in general are positive. The selected comments are typical of the concerns expressed within an overall positive response; taken alone these comments may lead to the wrong conclusion that only negative remarks were made.

Some of the highlights relevant to the interpretive strategy are:

- "we were unprepared for overwhelming Yukon wilderness and the lack of access to it. We became very aggravated when we discovered it is next to impossible to venture off the highways for hiking or photography. We are only advocating a system of simple trails. We couldn't really explore the land once we got there."
- "At Dawson we tried to get good maps and information about the Dempster Highway, but there wasn't any. They didn't have any topographic maps, and only one poor brochure on the route. We were told we could only get information in Whitehorse."
- "once the Dempster is advertised, the flood of visitors will be beyond the capacity of the environment. Already permanent scars on the land from development. No large wildlife to be seen."
- "the lack of information at Tombstone and along the Dempster was a fundamental failure. It is a mistake not to open the Tombstone campground until 11.00AM. The only pamphlet came from the NWT."
- "if development eliminates the wilderness experience I will not return."
- "the map issued by YTG was inaccurate and lacked any detail that would have been helpful. A general lack of information on Gov't campgrounds."
- "roads, hard to make stops in narrow stretches, many pull-outs not suitable for large vehicles, rest areas very infrequent, generally poor condition."
- "more info on where to spot wildlife would be nice, some more signs explaining which mountain is where, and some signs explaining vegetation would help."
- "please pave the Dempster, and I will come back to drive it."

- "it was the slide show in Whitehorse that made us take the Dempster. Information centres are excellent."
- "not particularly interesting, but there may be things to do and places to see I was not made aware of."
- "found too much garbage in the Dempster area."

2.6 VISITOR PROFILE AND MARKET SUMMARY

This summary evaluates the visitors to the Dempster Highway and provides a picture of the existing and future market. The market analysis will support the implementation of the interpretive strategy by outlining user characteristics. It will assist with decisions on capital or operating budgets and the feasibility of possible commercial ventures such as the production of audio-tapes or identification of markets for interpretive or other tours.

The interpretive strategy is market driven and the recommendations outlined later in the report reflect the travel patterns and desires of the Dempster Highway traveller.

2.6.1 Visitor Profile

The visitors to the Dempster Highway are diverse as indicated by the market segment outline provided in Section 2. Since the Dempster Highway travellers are slightly different from the 'average' Yukon tourist, it is worthwhile to highlight a few of the distinguishing features. There are exceptions to every profile and this list should only be interpreted as a composite picture of the main target audience. In effect there is no such thing as the 'average' Dempster Highway tourist.

The typical or most frequent Dempster Highway visitor is likely to:

Origins and Planning

- be a Canadian from the west, or less often an American from the Pacific Northwest; if European, then a German or Swiss,
- have made the decision to come to the Dempster Highway area before leaving home, probably within the last year; 20% will make decision in Whitehorse or Dawson,
- have found out about the Dempster Highway by reading about it in a magazine or other source; many will have heard about it through friends and may travel with them; less than 10% will have heard about it through direct advertising,
- be travelling in a car, truck, or camperized vehicle, in contrast to their fellow travellers in Dawson who will be using buses and R.V.'s,
- be travelling in a party of 2.2- 2.8, in other words with family or friends, motivated 'to see and do',

Age and Occupation

- be younger than the average tourist in the Yukon, but a large percentage will be retired,
- be employed more often than retired in comparison to other tourists in the Yukon,
- be a professional, or skilled worker, if employed,
- have a higher than average income, and be well educated,

Destination

- be travelling on one of 5 distinct one-way or two-way paths with the Dempster Highway as a side trip on a circle tour, or as a feature of a north or southbound tour,
- be travelling all the way to Inuvik, although 20-25% won't,
- have about 3-4 days of travel on the Dempster Highway,
- camp as a first choice; if in a bus will stay at Eagle Plains Hotel,
- will visit Dawson at beginning and end of Dempster Highway trip,

Activities and Interests

- come to see wildlife and experience the wilderness, with an interest in flora and fauna,
- be disappointed in the wildlife viewing opportunities,
- have a stronger interest in natural history than the average tourist,
- go fishing as an incidental activity,
- drive past the interpretive centre unless they see the sign or read about it, it may be closed when many pass by,
- not hike unless they are part of the 10 % minority; more likely to hike if short 15 min.- 25 min. loop trails provided,
- take lots of photographs,
- appreciate the wildflowers,
- ask questions about native life; did anyone live here, who were they?,
- want more information and interpretation on landscape, people, flora and fauna,
- look forward to crossing the Arctic Circle,
- want personal contact with staff or interpreters,
- be generally satisfied with the trip and consider coming back to see and do more, or at least recommend trip to others.

2.6.2 Market Segments

The numerous studies and interviews suggest the Dempster Highway target audience is composed of several categories. These categories are distinct, yet there is overlap between the various groups, since visitors often seek more than one type of experience. The breakdown of residents and non-residents is part of the market segment table outlined below. The proportions represented by each market segment vary by area and season. Percentage figures are a rough indication only based on a total visitation of 7,000-9,000. The table shows that any interpretive program or facility on the Dempster Highway will be used by a variety of tourists and residents with specific motivations

TABLE 2. MARKET SEGMENTS

MARKET SEGMENT	PARTY TYPE	ACTIVITIES	SYNOPSIS
RUBBER TIRE (75-85%)			
Car, Camper, Truck	family, younger	photography, fishing, day hikes	want things to do and see, growing segment with young children, dominant group on Dempster
R.V.	retired couple, older	fishing, read interpretive signs	small percentage unless road is improved, long term change with aging population
Buses, vans	retired & younger couples	tour groups, adventure groups	slow growth, or stable in near term
ADVENTURE TRAVELLER (5-10%)			
Bicyclist	individuals, friends, younger	hiking, nature appreciation	limited growth
Adventure Travel Tour	friends, individuals, families, younger	wildlife viewing, flightseeing, rafting	rapid growth in near term
Canoeists	friends, younger	canoeing, wildlife, wilderness appreciation	steady growth in long term
Hikers	friends, younger	backpacking	stable percentage, some long term growth
Birders	friends, families, individuals, older	bird-watching	rapid growth in near term, probable saturation level

MARKET SEGMENT	PARTY TYPE	ACTIVITIES	SYNOPSIS
CULTURE ENTHUSIASTS (5%)	friends, families, older	visiting heritage sites, going to cultural events	potential for growth if attractions become known
HUNTERS, ANGLERS (10-15%)	residents, individuals, friends seasonal use	hunting, fishing, camping	stable or declining, hunting, fishing stable or slow growth
EMPLOYED PERSONNEL (2-3%)			
Truckers	individuals	little activity	stable, growth with economic development
Maintenance Staff Researchers Outfitters Hotel/ Lodge Staff	friends, couples, families	local activity of all kinds	stable numbers
Business Travellers	individuals	use pull-outs read signs	stable, growth with economic development
LOCAL YT RESIDENTS (10-15%)			
Community groups School groups Families Individuals Employees		local activity of all kinds	stable numbers

2.6.3 Market Size and Future Trends

2.6.3.1 The Difficulties of Projections

The future demand for access to interpretive and related recreation facilities and programs will be a combination of trends in outdoor activities as well as shifts in the composition of visitors. The data available for visitors is superior to that for residents, yet any projection is still not more than an educated guess. Future resource development in the Dempster Highway region, political changes, economic shifts, changes in methods of travel, the price of fuel, marketing efforts, the emergence of 'fashionable destinations', and many other factors work against accurate forecasts. Nevertheless, the likely visitor demand for interpretation and outdoor recreation facilities is clear enough to help prepare a strategy.

2.6.3.2 Growth in Market

Summer is the season of choice for most tourists, but superb fall colours, wildlife, less crowded conditions and bug free periods in shoulder seasons could attract higher visitation in the future. Winter travel to Tombstone and the Ogilvie Mountains may increase as ski touring possibilities are explored. Driving the distance to Inuvik will likely always be limited by frequent severe weather. Spring travel volumes could increase if measures are taken to attract visitors.

The Western Arctic Tourism Development Strategy predicts that the "rubber tire" market will grow at 30% per annum for the next 3 years, then expand at 15% per annum in the 1990's (McLaren Plansearch 1988). According to these projected figures, there would be about 15,000 travellers on the Dempster Highway during the 1991 summer season. There is insufficient data on traffic volume increases since the Dempster Highway has only recently been fully completed. It is conceivable that with increased marketing efforts, these traffic projections could be realized.

The report suggests that adventure travel packages are growing at an annual rate of 15-20% in Canada (a figure quoted in several sources). This figure may be somewhat optimistic for the Yukon since much of the growth has occurred in the south in specific industries such as rafting. Adventure tourism has received much publicity recently, but more careful evaluation of opportunities in the Dempster Corridor are warranted before suggesting that similar growth rates might be seen.

The 1988 Adventure Travel Market study in B.C. suggests that about 35 million North Americans are in the market for adventure trips and that 35% of Canadians want vacations involving adventure, outdoor activity and excitement (Outdoor Recreation Council 1988). Nature tours will be increasingly popular with the 35-55 age group. The greatest future growth was felt to be in the area of "soft adventure", with creative programming to suit the aging "baby boomers". Soft adventure means activities that provide new experiences, yet are not physically demanding.

The Yukon attracts visitors from the same regions as British Columbia does, namely, the Pacific Northwest, Alberta, and Ontario. Useful parallels may be made with the adventure travel market segments in these regions. The Dempster region attracts a significant number of adventure travellers. These tourists will seek excursions in the Dempster region as the main component of their trip.

A 1988 study by the B.C. Outdoor Recreation Council found three categories:

- Casual Adventurers
 - day and weekend trips
 - experiment with outdoor activities
 - age of less than 25 or more than 45
 - may take backcountry tour

- Committed Adventurers
 - affluent, age 30 -60
 - desire to learn
 - will take extended backcountry tours

- Expert Adventurers
 - serious commitment to particular activity
 - will take backcountry tours
 - subscribe to magazines and belong to clubs

A wildlife viewing study in British Columbia found that the sizeable primary market for wildlife viewing is in the order of 10.7 million visitor days with growth potential to 14 million visitor days (B.C Tourism 1988). Secondary market growth, defined as visitors viewing wildlife incidentally as part of other outdoor activities was estimated at 2.1 visitor days potentially growing to 4 million days.

These projections are relevant to the Dempster Highway since wildlife viewing is cited as a major travel motivation by most travellers on the highway. The British Columbia tourist market is similar to the Yukon in that the province attracts visitors from many of the same regions and for the same reasons as the Yukon. The potential volumes for the Yukon market will obviously be less, but in proportion to the local population and viewing opportunities, will be of parallel significance. The wildlife viewing opportunities in the Yukon are under study. Future market growth will influence Dempster Highway use and consequently affect the interpretive program. The visibility of wildlife and potential environmental concerns will shape the ability to deliver the wildlife viewing product to Yukon tourists.

2.6.3.3 Changing Travel Patterns

The Kluane Region Tourism Development Plan stated in 1982 that there would be a continuing trend toward travel by mass modes, such as bus, well into the next decade. This prediction is now realized in the Kluane and Dawson area. The report also suggested that as destination areas in the Yukon become developed and better known, the traditional 'pass-through' traveller segment would decline in importance and be replaced in part by vacationers with private vehicles, or those on package tours with the Yukon as a destination. This means that more roadside opportunities for recreation and interpretation will be demanded in the future. The authors felt, however, that Alaska will continue to exert a strong influence on the composition and motivation of tourists. The Alaska-bound component of the Dempster Highway traffic is sizeable.

2.6.3.4 Changing Activity Preferences

The other major trend identified is the increasing segmentation of the travel market. Thorne, Stevenson and Kellog, (1982) indicated there is a trend toward self-awareness with an increase in demand for educational, interpretive, and experiential travel. This means that visitors of the future will often be sophisticated and seek high quality information about the natural and cultural landscape they are passing through. This trend means emphasis should be placed on ensuring that facilities are easily found, information readily interpreted and a variety of programs offered satisfy an increasingly segmented and

specialized travelling public. Senior citizens may seek nature interpretation, while families with young children may seek short duration walks; all will be looking for opportunities that meet their particular demand.

The studies reviewed for this report were consistent in revealing that sight-seeing, wildlife interpretation, and interpretation of cultural and heritage sites will likely remain strong interests. This means that roadside stops, signs, and information will be an integral part of any plan.

The 1987 Tuak Environmental Services report on non-consumptive use of wildlife suggested there is a large number of visitors wanting to view and interpret wildlife in Yukon. This conclusion is based on worldwide trends, such as the proliferation of commercial services offering wildlife viewing as a prime attraction. Bird-watching has been noted as the fastest growing recreation activity in Canada. Visitors will take advantage of interpretive opportunities in the Yukon, where these facilities are available.

The recent wildlife viewing study in British Columbia, cited above, also concluded that wildlife viewing is rapidly increasing in popularity. In British Columbia up to 20% of the population take trips for observing wildlife, while 10% participate in hunting (B.C. Tourism 1988). The study found a high willingness to pay for wildlife viewing and that the private sector plays an important role in popularizing wildlife viewing.

Hiking and fishing will likely remain important. The provision of short duration hiking or interpretive loops may change the activities of visitors quite dramatically, since many people express the desire for this type of opportunity while en route.

2.6.3.5 Market Position

How attractive is the Dempster Highway and region to North American and global tourists? What does it offer in relation to similar destinations? What role will cultural features in the Mackenzie Delta play in drawing visitors to the Dempster Highway? These questions are important considerations in determining the future tourist use of the highway and the subsequent development of interpretive programs and facilities.

Accessible wild landscapes are a dwindling resource in Canada and worldwide. A significant proportion of the world's remaining wilderness is in northern Canada (McCloskey and Spalding 1988). Wilderness will likely be perceived as increasingly valuable in both economic and biological terms. The State of Alaska has reserves of wilderness comprising 38% of the land mass and special wildlife areas have been well advertised (B.C. Tourism, 1988). The wilderness image is transmitted effectively to the population of the lower 48 states. In time, the wild landscape of the Dempster Highway area, if managed well, could be prominent on a global scale as a tourist and outdoor recreation destination area. This future possibility is part of the management challenge of which an interpretive strategy is a key element.

With the future establishment and increased recognition of Territorial and National parks in the Dempster area and Northern Yukon, the use of the Dempster Highway will increase and demand for interpretive or outdoor recreation facilities will probably grow. The dramatic growth in use of the Nahanni River and increased travel to the Fort Simpson staging area since the establishment of a national park is a good recent northern example of the potential effects of park establishment (Bob Lewis, Canadian Parks Service, pers. comm.).

On a more practical and immediate level, the features of the Dempster Highway may be compared to other destinations. In North America, there are no other public roads crossing the Arctic Circle, and few with a landscape perceived as dramatic and unusual by visitors. These two facts, in combination with a wilderness setting, suggest a destination of international appeal. The cultural resources of the Dempster region have not been a major part of the tourists' image, yet there is growing worldwide interest in experiencing different cultures. The Mackenzie Delta already attracts some people with a primary interest in native culture and studies indicate the interest level of the majority of tourists is high. A synopsis of northern routes and destinations indicates the attractions and market position of the Dempster Highway:

- | | |
|-----------------------------|---|
| Dalton Highway | <ul style="list-style-type: none"> - <i>formerly North Slope Haul Road to Prudoe Bay in Alaska</i> - <i>high scenic and wildlife values</i> - <i>remote highway with limited services but only open to public part of the way</i> - <i>highway may be opened to public in near future; if opened to public, could be seen as alternative to Dempster Highway by many Americans</i> - <i>pipeline and industrial traffic may reduce wilderness appeal</i> |
| Alaska Highway | <ul style="list-style-type: none"> - <i>travel route with strong appeal to Americans, Dempster a side trip to people wishing to drive the Alaska</i> - <i>not comparable to Dempster as a route, although portions offer very scenic landscapes; Alaska Highway is the 'road to the wilderness of Alaska'</i> |
| Denali National Park | <ul style="list-style-type: none"> - <i>Dempster has been compared to experiences found in Denali; it may be attraction of similar stature but is not really comparable: one is a destination park, the other perceived as a wilderness route or region, both are destinations but with different characteristics. Denali is not a 740 km. journey from the main highways</i> - <i>wildlife viewing in Denali is superior to Dempster</i> |
| Mackenzie Highway | <ul style="list-style-type: none"> - <i>road to Yellowknife has interesting points, but lacks scenic quality and diversity</i> - <i>road does not approach Arctic Circle</i> - <i>several communities en route add cultural interest</i> - <i>if road is extended to Inuvik, route will increase in prominence and become part of northern circle tour including the Dempster</i> |
| Banff-Jasper | <ul style="list-style-type: none"> - <i>internationally known route providing Highway access to the scenery of the two national parks</i> |

- *not an alternative to the Dempster, but Dempster scenic quality, while different, is of equal stature*
- Cassiar Highway**
- *scenic route with landscapes similar to Dempster; lacks Arctic appeal, and is viewed as access road to the Yukon or to wilderness parks in northern B.C.*
- Canol Road**
- *remote wilderness highway, high scenic values, but lacks arctic or cultural appeal*
 - *regional significance*
 - *can be linked to Campbell Hwy. circle tour*
 - *no services en route*
- Top of the World Highway**
- *a connector route with high scenic values*
 - *regional significance*
- The Silver Trail**
- *a regionally significant route and side trip with a short circle tour*
 - *heritage interpretation opportunities*
 - *access to wilderness, but route not wild landscape comparable to Dempster*
 - *moderate scenic values*

On a global scale the Dempster Highway and the Canadian Arctic appeal to Europeans and North Americans for the lure of the north, scenic and wild open spaces and wildlife. Other destinations in South America or Asia offer remote roads in beautiful settings, but the appeal to western audiences focuses on culture and local inhabitants in combination with scenic landscapes. As the cultural features of the Dempster Highway and Mackenzie Delta become better known, the image of the route will be strengthened and may attract a wider audience.

In a global context the Dempster Highway market position is unique and will have increasing appeal in the future if environmental and road conditions remain similar. The Dempster Highway will never likely draw a mass audience, but it could retain and attract an increased share of the adventure travel and nature oriented touring market. The tourism market position may change as the north itself changes, if the highway is improved, if pipelines are built, or if parks or other reserves are established. The Dempster Highway is new and in transition; for this reason the long term synopsis for tourism and adventure travel depends in large measure on the management strategy adopted for the region as a whole.

3.0 INTERPRETIVE INVENTORY

An interpretive feature is any point of interest to the Dempster Highway audience. It may be a specific feature, an event in time or a special aspect of the northern environment. Interpretive features were classified as abiotic natural history, biotic natural history, and human heritage and cultural history. The criteria for what makes a feature worthy of interpretation is not rigidly fixed. The abiotic features and vegetation were subjectively assessed as to which features were most likely new and different to a southern traveller. For wildlife features, the relative importance for interpretation on the Dempster Highway was assessed through evaluation criteria. The evaluation was intended to introduce a measure of objectivity to the ranking of the relative importance of the different wildlife species.

The human heritage and cultural features were treated differently from the natural history features. A substantial amount of project research effort was directed at the identification of the human heritage and cultural significance of the area and this information was not reduced through an evaluation process. Assessment of the best features was made through a selection process based on chronological research, oral history and subjective considerations. An objective evaluation process is inappropriate for these subjects for a number of reasons: there are large data gaps and other on-going cultural studies; a high emphasis was placed on cultural heritage in this study; and there is a wide range of features relating to different groups, varying time periods, changing land use patterns - all of which do not lend themselves to simple comparisons.

The inventory is not intended as an exhaustive natural resource or human resource inventory. The purpose is to highlight the significant interpretive features. Detailed accounts or descriptions of the features appear as stories in the Appendix 5.3. These stories will be referred to in more detail in Section 4.0 Interpretive Strategy.

The research information of the inventory was used to develop the interpretive themes for the Strategy. This material forms the basis of the information to be conveyed through the interpretive strategy. Those features which are site specific will influence the locations of interpretive roadside stops to be recommended in the Strategy. Much of the interpretive material gathered does not need to be conveyed at a roadside stop. This information may be best interpreted in a road guide, brochure, video, tape, guided hike, personal interpreter or campground program. Some features are worthy of interpretation but are not suitable for on-site interpretation. For example, many archaeological sites cannot withstand repeated visitations and some wildlife sites are sensitive to excessive visitation.

The inventory features were researched through personal communications with residents of the Dempster area, government representatives, researchers, band councillors and band elders. Archival research, field reconnaissance and literature review were also conducted. The human cultural research involved a large component of original research (i.e. personal interviews to acquire information not previously documented) whereas the natural history research drew largely upon publications and government reports.

Much of the inventory material is mapped. The reader is directed to the Appendix for Maps 6 - 11 which present the geographic location for many of the interpretive features, where applicable.

3.1 ABIOTIC NATURAL HISTORY FEATURES

The abiotic environment includes the terrain, the rivers and lakes, and the climate. From an interpretive viewpoint, unglaciated areas, permafrost, rivers, glaciation, climate and bedrock geology were deemed to represent the abiotic environment of the Dempster Highway Corridor due to their geographic significance, human interest and economic importance.

The large amount of information on unglaciated areas, permafrost, rivers and glaciation includes many interpretive features. Much less is available on the bedrock geology. Specific climate data is lacking for most of the highway area, especially the higher mountain areas.

3.1.1 Unglaciated Areas

The unglaciated areas of the Dempster Highway Corridor are especially important for interpretation because these are some of the only areas in Canada which were not glaciated. Most of North America was glaciated at least twice. The northern and central Yukon and parts of Alaska escaped the blanket of ice. The Dempster Highway offers a unique and spectacular opportunity to travel through this unglaciated part of Canada.

Except for the southern Ogilvie Mountains, the entire length of the highway corridor in Yukon is unglaciated. In NWT, the road travels through country glaciated by the continental ice sheet. The rounded mountains and V-shaped valleys cut by streams of the central Ogilvie Mountains are evidence that the area has escaped erosion by glaciers. The rugged tors or castellations, erosional remnants on ridge crests in the central and northern Ogilvie Mountains, long gradual slopes called pediments, thick colluvium and few rock outcrops, all show that this area has undergone, unlike most of Canada, an extremely long period of weathering without the intervention of glacial ice.

The unglaciated areas were especially important as a refugium during the glacial period for both flora and fauna. Because these areas were not scoured by ice, there is a long undisturbed sedimentary record which has allowed scientists to reconstruct the geological past.

3.1.2 Permafrost

Permafrost or permanently frozen ground is quintessentially a northern phenomenon. Understanding of the northern environment requires understanding of how permafrost shapes the landscape. Though permafrost occurs throughout northern Canada, few roads interrupt its vast domain and most Canadians have little knowledge of permafrost landscapes.

The Dempster Highway lies in a zone of continuous permafrost except under major rivers and steep south-facing slopes at its southern end. Permafrost features are especially prominent in the landscape of the southern Ogilvie Mountains and the tundra of the Richardson Mountains. Abundant landslide scars occur in the Ogilvie Mountains. Thermokarst lakes dot the area around Chapman Lake and in the Peel Plateau, a few pingos can be seen up the Blackstone River and seasonal frost mounds occur in the Blackstone valley. Stunted trees on Eagle Plains attest to poor growing conditions influenced by permafrost.

Permafrost imposes major constraints on the construction of both roads and buildings. Construction of the Dempster Highway involved creative methods of coping with

permafrost. Traditional road building techniques caused thawing of the permafrost and some sections of the original road right of way had to be abandoned.

Permafrost influences must be considered with building construction. In Delta communities, such as Inuvik, the buildings are connected by utilidors which house water and waste water pipes. This prevents disturbance of the permafrost. Buildings are built on pilons and/or on thick gravel pads above the frozen ground to prevent thawing of the permafrost. Alteration of the temperature regime results in instability. Construction on permafrost must be in response to the permafrost environment.

The readily available examples of permafrost controlled landscape along the highway produce a unique education opportunity for tourists, one they are unlikely to encounter elsewhere.

3.1.3 Rivers

Rivers are important instruments for shaping the landscape. The Dempster Highway Corridor includes several large rivers. The MacKenzie River is the largest drainage in Canada and among the ten longest rivers in the world. By its size and subsequent influence on the landscape, the river system represents a major migration route for waterfowl. The MacKenzie Delta, among the largest in Canada, supports a diversity of life: fish, terrestrial and marine mammals, nesting birds and human settlement.

Much of the Dempster Highway follows close to the divide between the Yukon River system which flows west to the Pacific Ocean and the Mackenzie River system which drains northward to the Arctic Ocean. The highway route crosses the Continental Divide three times.

Rivers of the highway corridor, especially the Mackenzie and its tributaries were major exploration and transport routes for the northern territories. Today, these river continue to provide a transportation route for the Delta communities. The rivers are also used by recreationists seeking travel adventure.

Rivers are also barriers to, and impose constraints on, road construction. Large rivers, especially the MacKenzie and Peel are major barriers. During freeze-up and spring break-up, travel across the rivers is suspended. Even small rivers pose major problems to road construction due to extreme fluctuation in river flow. Road culverts must be large enough to accommodate flash floods and winter icings, yet in other times of the year the river may look almost dry.

A number of unusual hydrological features in the corridor offer interesting interpretation. In the central Ogilvie Mountains, a warm springs percolates up through permafrost and reaches the ground at 4 degrees Celsius. Iron rich sulfur springs discolour the waters of Engineer Creek. Mineralization of this river creates a licking area used by sheep. A warm springs feeding into the Ogilvie River provides overwintering habitat for Arctic Grayling and the odd mallard.

3.1.4 Glaciation

Glaciation has shaped the landscape along the Dempster Highway Corridor. The southern Ogilvie Mountains, molded by at least three distinct mountain glacial events, contrast sharply with the unglaciated terrain of the central and northern Ogilvie Mountains, Eagle Plains and the western Richardson Mountains. North of the Northwest Territories border,

the Peel and Mackenzie River valleys were also glaciated, occupied by the westernmost extension of the ice sheet which covered most of North America.

Because the Dempster Highway dissects an area of discontinuous mountain glaciation in the Ogilvie Mountains beyond the limits of the main continental ice sheet, the traveller is able to see evidence of older glaciations which have been obliterated under the huge ice sheet which occupied most of Canada. Rounded valleys carved by valley glaciers contrast with mountain tops which remained above the sculpting powers of the ice. The most recent glacial advance ending approximately 12,000 years ago was the least extensive, confined to the mountains in the North Fork Pass area. Glacial features are prominent. Visible from the highway are the sharply defined U-shaped valleys, hummocky moraines, cirque valleys and intervening sharp horns and aretes, all reflecting their geologically recent formation. More subdued features are a result of older glaciations.

Further north high terraces along the Eagle and Rock River valleys represent major spillways which drained the massive ice sheet to the east. The numerous lakes of the MacKenzie Lowlands also attest to the presence of this ice sheet.

3.1.5 Climate

The northern climate is a vital component of the Dempster Highway Corridor landscape. It must be included in any discussion of the area because it has profound effects on both the biotic and abiotic environment.

Permafrost is a result of the low mean annual temperatures. Low temperatures, extreme winds, and days to weeks of darkness, which characterize the severe climate, require special adaptations by plants and animals. High winds, drifting snow, snow avalanches and extremely low temperatures make road travel and maintenance difficult. In contrast, twenty-four hour summer sunlight north of the Arctic Circle is largely responsible for the remarkably mild temperatures and the spectacular burst of growth during that season.

3.1.6 Bedrock Geology

Rocks control the basic form of the landscape. Geology tells us how the rocks in the Dempster Highway Corridor got to be where they are and why the landscape looks the way it does.

The different characters of the mountains and valleys of the highway corridor are largely a result of different rock types and geological processes. The Southern Ogilvie Mountains contain the highest peaks within the corridor. These mountains are the result of igneous intrusion, thrust faulting, regional uplift, glacial erosion and downcutting by streams. The sedimentary rocks to the north, mainly limestones, shales and sandstones, were deposited on the continental shelf and inland seas from the coastal mountain building. These rocks were later thrust faulted. Fossils can be found in some of the limestones in the Eagle Plains and Richardson Mountains. The mountain shapes reflect the different rates of weathering of different rocks. The rounded shale mountains in the central Ogilvie mountains contrast with the spectacular limestone tors and castellations in the northern part.

Rocks along the Dempster Highway have economic value. Some rocks are host to oil and gas reserves, others contain minerals. Gas reserves appear to have high economic potential in the area. Grid lines in the Eagle Plains still obvious after more than twenty years, are evidence of seismic testing for oil and gas.

3.2 BIOTIC NATURAL HISTORY FEATURES

The biotic natural history includes discussion of the ecological regions of the Corridor, the vegetation, wildlife, fish and invertebrates.

Wildlife and fish in the Corridor are substantial. There are numerous species, all of which are important to the area in some aspect. Not all species lend well to inclusion in a Dempster Interpretive Strategy. Some species are more important to the Strategy than others. To evaluate this importance and attain some degree of objectivity, features were ranked according to their respective standing within four criteria: biogeography, vulnerability, human interest and socio-economic importance. Features which were ranked "high" merit a high profile within the interpretive strategy; conversely, a "low" ranked feature would not be ignored but would not receive a high profile in the strategy. For example, red fox may not rank high enough to deserve a story within the organization of themes and stories in the interpretive strategy, yet if one were seen on a guided hike, the interpreter would surely not ignore the animal but take full interpretive advantage.

An individual feature was evaluated by both its relative rank within each criterion and the number of criteria to which it applied. The higher up the list (in a given criterion) or the more often a feature appeared, the higher priority the feature had for interpretation.

A. Bio-Geographical Criteria:

- 1) occurs primarily in the area
- 2) occurs over a large area but is particularly well represented or visible in the area
- 3) represents an indicator or example species for a biotic region

B. Vulnerability Criteria:

- 1) vulnerable to human activities
- 2) is rare, threatened or endangered in Canada

... continued

Interpretive Features Criteria continued:

C. Human Interest Criteria:

- 1) potentially dangerous
- 2) easily visible as a result of being: i) large, ii) common, iii) close to access/hwy,
iv) accustomed to human activity
- 3) other - attractive, such as wildflowers;
special interest group appeal

D. Socio-Economic Criteria:

- 1) economically valuable
- 2) affects other activities of high economic value
- 3) economically valuable to certain groups

TABLE 3. EVALUATION OF INTERPRETIVE FISH & WILDLIFE FEATURES OF DEMPSTER HIGHWAY CORRIDOR*

BIOTIC FEATURE	BIOGEOGRAPHY			VULNERABILITY		HUMAN INTEREST			SOCIO-ECONOMIC			RANK
	1	2	3	1	2	1	2	3	1	2	3	
Dall Sheep		X		X			X				X	high
Wood. Caribou			X				X				X	med
Barr. Caribou	X							X	X			high
Moose			X				X		X			high
Grizzly Bear			X	X		X					X	high
Black Bear			X			X						med
Wolverine			X	X					X			high
Wolf			X	X							X	high
Lynx			X	X					X			high
Pika			X					X				med
Marmot			X					X				med
Grd. Squirrel		X					X					med
Lemmings			X					X				med
Peregrine Falcon		X		X	(X)		X				X	high
Gyrfalcon		X		X			X				X	high
Golden Eagle		X		X			X					high
Bald Eagle		X					X					med
Waterbirds			X				X		X			med
Ptarmigan			X				X					med
Songbirds/others		X					X				X	med
Arctic Grayling		X						X	X			high
B. Whitefish			X					X	X			high
Inconnu			X					X	X			high
Chinook Salmon			X									med
Arctic Charr			X					X	X			high

* see text for criteria of evaluation; also see text for treatment of ecological regions, vegetation and invertebrates

3.2.1 Ecological Regions

One of the most striking features of the Corridor to the traveller is the continually changing landscapes. These landscapes differ as a function of the different physical processes effecting their respective formation and the resultant vegetation and wildlife habitat supported. Considering the collective abiotic and biotic components, the landscapes are ecological regions.

The highway travels through six regions. A journey from one end to the other, takes the traveller through the northern limit of boreal (spruce) forest in Yukon to areas beyond treeline, yet descending in the northern most reaches of the highway again into the aspen and spruce forests in the Mackenzie Lowlands. Many species of forest dwelling flora and fauna find their northern limit in the southern range of the boreal forest along the Dempster Highway.

The treeless tundra of the Southern Ogilvie and Richardson Mountains and Peel Plateau is the result of the influence of permafrost, elevation and climate. Wildlife is conspicuous, flowering plants or fall colours can vividly colour the landscape and the vistas are unending.

The plateau of Eagle Plains offers vistas of the surrounding mountain ranges. Permafrost restricts the growth of trees. These spindly trees may approach 100 years of growth although they look like saplings of 10 years growth by southern standards. The region is not biologically diversified. There are few different kinds of habitat: open ridges and sparse spruce forest.

3.2.2 Vegetation

The Dempster journey offers first hand experience with the tundra. Roadside viewing of the cottongrass tussocks in seed or the blooms of shrubby cinquefoil or labrador tea can attract the attention of many travellers. A closer look at the tundra reveals a multitude of flowering plants enduring a cold and windy environment. Some plants may be familiar to the traveller from the south but their subarctic life form may be curiously different. Many plants are new to the traveller because their range is restricted to the north. The diversity of the tundra flowers is often enough to attract many amateur botanists beyond the confines of their vehicle.

Lichens are an important component of the vegetation of the area. These are an important winter food source for caribou. Dense mats of lichens dominate the understory of the black spruce forest of Eagle Plains. The variety of lichens in the corridor, their curious shapes and their life history make them a valuable interpretive feature.

Many flowering plant species are endemic to areas of the corridor. Mountainous areas in the southern Ogilvie Mountains which served as isolated refugium and the unglaciated Northern Ogilvie mountains and Richardson Mountains now support several species which are not found elsewhere. Some of these species include their unique regionality in their scientific name, such as *Claytonia ogilviensis* and *Draba ogilviensis*. Rare flowering plants found in the Dempster Highway Corridor are listed in the Appendix 5.2.1.

The variety of plant life in the corridor is well expressed during autumn by the colours of late August and early September. The shades of the homogeneous summer green vanish and the bright fall colours reveal differences in the plants which otherwise were not obvious or striking to highway travel.

3.2.3 Large Mammals

Dall sheep

Dall Sheep range over an extensive area of northwestern Canada and Alaska. There are a number of sheep ranges in the Dempster Highway Corridor, some of which offer potential for sheep viewing from the roadside. In the southern Ogilvie Mountains, a nursery area is within view of the road. Greatest use of this area is in June and again in August. In the central Ogilvie Mountains, the presence of a roadside lick offers the best potential roadside viewing of sheep. The Dall sheep of the Dempster Highway Corridor have economic value to Big Game Outfitters and social value to indigenous peoples and to a small extent, resident sport hunters. Dall Sheep ranked "high" in the evaluation of wildlife interpretive features (Table 3).

Woodland Caribou

The range of woodland caribou extends through much of Canada yet they tend to exist in small discrete pockets and as a race are not familiar to many people. The Hart River Herd is a resident herd of the southern Ogilvie Mountains and adjacent areas. Bulls are occasionally visible in small numbers (less than 30) from the roadside in June but more often sighted on ridgetops and up side valleys removed from the immediate roadway. As with most "big game", caribou are economically important to the big game outfitters of the area, and are important to a small number of local sport hunters. Woodland caribou ranked "medium" in the scheme of evaluation of interpretive features.

Barrenground Caribou

The Dempster Highway Corridor cuts through the winter range and migration routes of the Porcupine Caribou Herd. Numbering at least 170,000 animals, this barrenground caribou herd ranks among one of the largest in the World. The herd does not occur in the corridor area in summer. Trails are evident on some slopes visible from the highway. On a local level, the herd has immense socio-economic importance to the Gwich'in. Barrenground caribou ranked "high" in the evaluation.

Moose

Moose are an indicative species of the northern boreal forest. They range throughout the Dempster area. One place of most reliable viewing is Moose Lake in the Blackstone Uplands of the southern Ogilvie Mountains, a site known locally for its frequent use by moose during summer. Opportunities for roadside viewing of moose are also good in the Peel Plateau and Mackenzie Lowlands of NWT. Hunting has apparently reduced population numbers in some areas of the Corridor, reducing chances of observing moose. As a large ungulate, moose represent an important subsistence food source and their trophy antlers are sought by sport hunters. Moose ranked "high" in the evaluation.

Grizzly Bear

To many people, these species represents wilderness and while not abundant, inhabits the entire Dempster Highway Corridor area. Internationally, the grizzly bear is a threatened species. Grizzlies can be seen from the roadway but not with any predictability. Habitat use varies seasonally and annually. Considered a potentially dangerous animal, human/bear encounters are not encouraged. This species ranked "high" in the evaluation.

Black Bear

Unlike grizzly bears, black bears can tolerate a great deal of human encroachment. This species is ubiquitous in its range throughout North America and cannot be considered a Dempster specialty, although sighting of any kind of bear to the traveller would probably attract attention. As this species pales in comparison to Grizzly Bear, it was ranked "medium" in the evaluation.

Wolf

This species represents wilderness, having been extirpated from much of its former range. In the Dempster Highway Corridor, the wolf ranges throughout the area. The Peel Plateau may offer the best chances of viewing a wolf. There are no documented den sites within the Yukon region. Evidence of the animal in the form of tracks is a more common sighting. Wolf howls can be an exciting interpretive activity. Wolf ranked "high" in the evaluation.

Wolverine

The wolverine is another species which signifies wilderness. The animal requires large tracts of unadulterated land. Viewing opportunities for this animal along the Dempster are rare. Similar to the grizzly bear and wolf, the rarity of this animal heightens the experience of seeing one. As a commercially trapped furbearer, the species has high economic value. Wolverine ranked "high" on the evaluation.

Lynx

Lynx are threatened in many areas of their range, although in Yukon they are locally abundant. Their population size and distribution varies annually with the cycling of the hare, their predominant food source. During years of abundance, lynx may be more commonly seen although sightings are still limited. Lynx are a valuable furbearer for trappers. Their pelts are often the most highly priced fur in Yukon. In years of low lynx abundance, demand exceeds supply and prices have gone beyond \$1000 for a pelt. Lynx ranked "high" in the evaluation.

3.2.4 Small Mammals

Hoary Marmot

A resident of the subalpine, the marmot has adapted to the short growing season of the high mountains by hibernating for at least eight months of the year. Marmots can not be seen from the roadside. Hikers in the corridor may see them basking in the sun or hear their shrill whistle, alerting other marmots in the area to the intruders. They are a common sighting in the southern Ogilvie Mountains. Marmots ranked "medium" in the evaluation.

Collared Pika

Pika are common in mountainous areas, but the collared pika evolved in isolation of its southern cousin and represents a species of the glacial refugium of the area. People are often surprised to consider the pika in the same family as rabbits. Their life history of making hay mounds of collected summer grasses for feed during the winter period can be a first hand interpretive experience when a hay mound is found. Pika are closest to the

Dempster roadside in the mountain slopes of Windy Pass. Pika ranked "medium" in the evaluation.

Arctic Ground Squirrel

Similar to the pika, the arctic ground squirrel was likely a refugium species which developed in isolation of the southern ground squirrels. Ground squirrels may be the most commonly seen wildlife in the corridor, although many travellers prefer to consider only the larger mammals as worthy of memorable wildlife sighting experience. It is an important species as a prey source for birds of prey and larger mammals and has an interesting life history story by virtue of its hibernation and colonial habits. This species ranked "medium" in the evaluation.

Lemmings

Lemmings are a northern specialty. They are not an obvious wildlife feature by virtue of their mouse-size, but their range includes the tundra and bog areas of the corridor. If they are seen, their short tails are distinctive. Lemmings play an important role as a primary food source for birds of prey, arctic fox and wolf. Lemmings ranked "medium" in the evaluation.

Other Small Mammals

This category represents all other small mammal species not already discussed - red fox, porcupine, varying hare, river otter, pine marten, mink, weasel, chipmunk, shrews, voles, mice, muskrat and beaver. Each of these species/groups ranked low. They may not be prominent or easily observed or they may be visible in the corridor but not be Dempster or northern specialties. As expressed previously, a low ranking does not mean they should be ignored but that their relative value as an interpretive feature is not priority to the strategy.

3.2.5 Birds

Peregrine Falcon & Gyrfalcon

The Peregrine Falcon is considered endangered in North America. The Gyrfalcon is slightly less severe. It is considered vulnerable. Both of these species nest within the Dempster corridor. A number of nest sites offer tremendous roadside viewing opportunities.

Peregrine Falcons and Gyrfalcons are sensitive to disturbance from human activities, particularly during the breeding season and pose a challenging management problem for interpretation. Both species are socio-economically important to the sport of falconry, but beyond this, each holds a psychological significance to the general public. Both species were ranked "high".

Golden Eagle

The Golden Eagle is a species representative of expansive, open areas and is a nester in the subalpine areas of the Dempster Highway Corridor. The Ogilvie Mountains boast one of the denser nesting populations of Golden Eagles in North America. Largest among North American eagles, it is sensitive to human activities at the nest site, as well as to habitat destruction or prey abundance reductions. A number of nest sites are situated within the highway corridor with some sites offering excellent roadside viewing opportunities, while keeping a safe (undisturbing) distance from the birds. Although the

same nest sites are used repeatedly, it is not possible to predict the occupancy status of specific sites from one year to the next. The Golden Eagle was ranked "high" in the evaluation.

Bald Eagle

Bald Eagles are represented in the corridor by at least two known nest sites, of which both are visible from the road while maintaining a safe distance between the nesting birds and observers. This species is vulnerable to human activities yet tends to be more commonly seen than the falcons or Golden Eagle. The Bald Eagle ranked "medium" in the evaluation.

Waterbirds

Waterbirds are loons, grebes and waterfowl, a group of birds which collectively are common throughout North America. On a specific level, some species of this group would represent example species of the subarctic area, such as: Pacific Loon, Red-throated Loon, Oldsquaw, Harlequin Duck and possibly Tundra Swan. The lakes and ponds of the Blackstone Uplands are adjacent or within easy view of the road, offering excellent viewing opportunities to the traveller. The lakes of the Peel Plateau and Mackenzie Lowlands offer the richest diversity and abundance of waterbirds. Waterbirds arrive in the area by late May and depart for the south by August and September. Waterfowl have a significant socio-economic value. This group was ranked "medium".

Ptarmigan

Ptarmigan are the grouse of the north. All three North American species occur in the corridor. Ptarmigan are highly visible in the area and can easily be seen from the roadside, if not on the road. Their ground habits, summer family groups and plumage are distinctive features. In the shoulder season of tourist travel the birds are quite obvious when on breeding territory in early spring or in large flocks of fall aggregations. Ptarmigan ranked "medium".

Songbirds/Others

A listing of bird species recorded from the Dempster area is presented in Appendix 5.2.2. The group includes many "Dempster Specials" - birds which otherwise occur much further north in the subarctic or birds which can be seen on their displaying on breeding territory which are common to the traveller on from their wintering grounds. The small and varied sizes of birds often leaves them to the interests only of birders. But a number of species are large enough and common enough to interest even the uninitiated traveller. The rise in interest in birdwatching and the growth of commercial birdwatching or natural history tours renders an indirect socio-economic value to the presence of the birdlife on the Dempster.

3.2.6 Fish

Arctic Grayling

In Yukon, Arctic Grayling is common in most river systems, including those of the Dempster Highway Corridor. A favoured sport fish in Yukon, grayling represent an important socio-economic value to the sport fishing industry and to tourism in general. Historically, arctic grayling in the Blackstone River was an important food source to the Gwich'in, the human residents of the area. Grayling were trapped in the river by stick traps. Arctic Grayling ranked "high" in the evaluation.

Broad Whitefish

Another northern fish by definition of its range, Broad Whitefish occurs in the drainages of the Yukon and Mackenzie Rivers. They are abundant in the Peel and Eagle Rivers. The annual spawning run in these rivers occurs throughout the summer and fall. The Gwich'in continue to fish this species, as they have for decades. Fishing camps with drying racks of fish are common along the Peel River. This species ranked "high".

Inconnu

Within the Dempster corridor, Inconnu occur in the Mackenzie and Yukon drainages with a marked abundance in the Peel River. The post spawning run in the river is more distinct than the spawning run and occurs prior to freeze-up. The fishing of Inconnu is important to the Gwich'in as a food source and for the social aspect of the fish camps. Inconnu was ranked "high".

Chinook Salmon

Historically, Chinook Salmon of the Klondike River was once an important food resource of the Han, residents of the Yukon and Klondike River area. Current counts on the North Klondike River record about 100 fish annually during the spawning run in July/August. The feature of chinook salmon is a minor one on the Dempster but ties in with hydro-electric developments on the North Fork Klondike River and traditional use of the area by the Han. This species was ranked "medium" in the evaluation.

Arctic Charr

A species of the arctic, Arctic Charr occur in the Mackenzie drainage. Charr are also in the upper Blackstone River where a few trout sized charr have been caught, but the majority are juveniles or non-migratory charr. The relevance of charr to the Dempster Corridor is most pronounced in Inuvik, where they are a common and desirable food in the Delta communities. This species ranked "high".

3.2.7 Invertebrates

Invertebrates (insects, mites, spiders, worms) represent a broad category of species. Most do not lend well to an interpretive program because they are too small for the traveller to see easily. The prominence of mosquitoes in the area makes them a valuable interpretive feature. Insects and worms which survived the glacial advances in the refugium of the area also offer unique interpretive material. Several species of moths are only found in the Dempster area in their Canadian distribution. A number of moth species were first found in the Dempster corridor and only within the last 10 years.

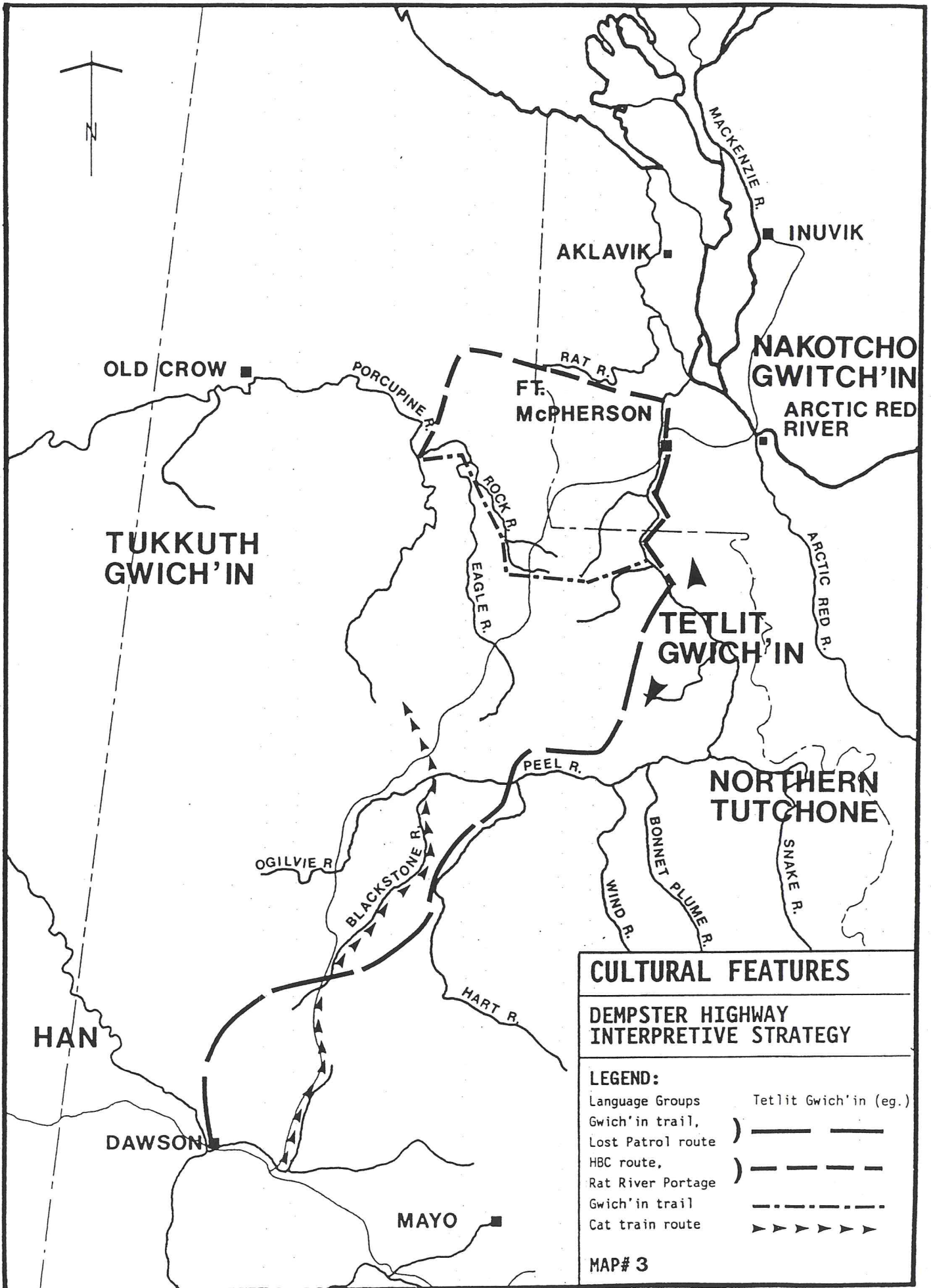
3.3 HUMAN HERITAGE AND CULTURAL FEATURES

The history of human activity in the Dempster corridor offers many interesting themes for an interpretive strategy. There are, however, few documented physical landmarks such as settlements, building remains, visible trails, markers, grave sites, or other human constructions to which these themes can be tied for interpretive purposes. Since there are so few specific "heritage sites", the research detailed in the thematic inventory below was developed to provide the background for more specialized story lines, and to identify appropriate locations along the highway where these stories could be told most effectively. Indigenous peoples have used the area for a much longer period, and more intensively, than more recent Euro-Canadian arrivals, and there are more stories pertaining to them. The post contact period is presented as a blend of native and Euro-Canadian activities to illustrate the interaction between cultures, the sharing of knowledge and technologies, and the development of the present day social, economic, and political structure of the area.

The land traversed by the Dempster Highway has a long history of use by several Indian groups. In late pre-historic times the area was extensively used by the Tukkuth Gwich'in, from the upper Porcupine River area; the Tetlit Gwich'in, who fished along the Peel River and hunted caribou in the Wind and Hart river area; the Han, from their fish camps along the Yukon River; and the Northern Tutchone, from the Ethel Lake and Fraser Falls area (Map 3). On occasion, the Nakotcho, who had fish camps along Arctic Red River, also travelled into the area. Archaeological evidence indicates that the area was used, possibly by the ancestors of today's inhabitants, at least as long as 7-8,000 years ago. These same groups continue today to use the corridor area.

Euro-Canadian history in the Yukon began in this region with early Arctic explorers followed by fur traders, surveyors, missionaries and prospectors. During the Klondike gold rush some stampedeers passed through the area en route to Dawson. Later, more trappers, traders, prospectors, and Mounties used the area. In the recent past, the area has been explored for oil, gas, and other mineral resources. It has been the focus of national defence concerns, and several pipeline proposals, as well as land claims negotiations. The construction of the Dempster Highway was a major event in itself, of profound significance to the human and other inhabitants of the region. Over time many different people have utilized the Dempster region for a wide variety of activities. Some left signs of their presence, most left hardly a trace, but many have left their stories.

Some of the human history and culture of the Dempster Highway Corridor has been documented prior to this study, but it was necessary to include considerable oral history research to fill in some of the gaps. Lazarus Charlie, an elder from Old Crow, who grew up in the Whitestone-Johnson Creek-Eagle Plains area, provided valuable information during the project field trip. Interviews with a number of Band members, especially elders, provided information. Even so, considerable research remains to be done that is beyond the scope of this study. Blackstone Village, a site of considerable significance to the corridor, had been overlooked in previous archaeological surveys, though noted by one researcher as a historic site. As well, the traditional use of the southern portion of the corridor by the Han requires additional documentation. Further oral research on the early use of cat trains in the area should be done. All of these topics should be considered with some urgency due to the advancing age of many informants who have first hand knowledge.



3.3.1. Creation Myths

It is not by accident that this section of the report on human heritage follows the natural history features section. Natural history and culture are parts of an integrated story. The existence of early humans in the area was dependent upon certain animals and on the maintenance of an environment that would support those animals. One might begin to tell the human story from this scientific viewpoint, however, there is another concept of human origins in the Yukon, based on legend. Both viewpoints offer valuable insights into the human heritage of this area.

Crow Creation Legends

The creation mythology of many northern Indian people, includes a story of how Crow brought order to the world, by making it habitable for animals and people. These Crow Stories depict the world in its original dark and watery state, and tell how Crow created the land, and then carved the human form from a poplar tree. The story exemplifies how Yukon Athapaskan people feel about their origins. Like the poplar tree they feel their roots in the land are extensive.

Humans, as Part of Nature

Many Yukon legends tell of people with superhuman abilities who could transform into an animal form at will and journey into the animal's spirit world to learn important lessons from it. Some stories tell of humans and other creatures who became part of the landscape when they died. The Gwich'in legend of "Beaver House Mountain", relates to a landform on the Dempster Highway by the Ogilvie River and is a good example of a legend being used to account for a specific physical feature.

Inuvialuit Creation Legends

Unlike the Crow creation legends of the Athapaskans, Inuvialuit creation stories describe the arrival of their ancestors in the Arctic regions from elsewhere. Upon their arrival by water, they met up with a timid group of original occupants who fled from sight and were never seen again.

Scientific Interpretation of Human Migration Theories

Scientists and others support the evidence of early human migration into Alaska and the Yukon by way of a land-bridge across the Bering Strait. During the last period of glaciation sea levels were lowered and parts of the continental shelf were exposed. This ice-free refugium was thought to have attracted many animals and in turn, the humans who depended on them. Several different migrations are thought to have occurred over time. The earliest brought the ancestors of many North American Indian people to this continent, in a later migration came the ancestors of the Inuvialuit.

3.3.2. Pre-contact Cultures and Technologies

Ancestral Indian Cultures

The potential for finding archaeological evidence of early cultures is considered to be high in the Dempster Highway Corridor, which is located in a large unglaciated area. The Bluefish Cave Site, southwest of Old Crow, shows evidence of human occupation in that area as early as years 24,000 years B.P.(Before Present). Sites located in closer proximity to

the corridor date from early as 7-8,000 B.P. Based on previous archaeological work, eighty-seven sites were identified along the highway route. These sites were concentrated at the North Fork Pass, the headwaters of the North Klondike River, and in the Rock River area.

Paleo-Eskimo Cultures

Archaeological evidence suggests that the arrival of the ancestors of the Inuvialuit on the North Slope and coastal regions of the Yukon occurred between 3,000 and 4,000 years B.P. Evidence of this Paleo-Eskimo culture has been found as far south as the Trout Lake area of the northern Richardson Mountains and artifacts of the later paleo-eskimo period have been found at the headwaters of Rock River. Paleo-eskimo technology is characterized by small, exquisitely retouched, stone tools.

Aboriginal Trade

Preliminary investigation suggests that an extensive trade network did exist in the corridor area. As hunting was the prime activity, trade was likely informal and unpredictable. Groups such as the Northern Tutchone (Ethel Lake), the Nakotcho (Arctic Red River), and the Tetlit Gwich'in (Peel River area), sometimes gathered at the mouth of the Snake, Bonnet Plume, Hart, and Wind rivers, and exchanged trade items such as red ochre, moose and caribou skins. Tetlit Gwich'in traded red ochre for whitefish at the Tukkuth encampment at Whitefish Lake. They also travelled south to Han fish camps along the Yukon River to trade red ochre for salmon. The source for some of this red ochre was at the headwaters of Rock River. Copper from Copper River was traded to Gwich'in by Inuvialuit and obsidian, probably from Alaska and southern Yukon was also brought in through trade. In 1839, John Bell observed a gathering of Tetlit and Tukkuth Gwich'in engaged in trading in the Rat River pass.

3.3.2.4. The Caribou

The predictable arrival of the migrating Porcupine Caribou herd and the year-round presence of the Woodland herds made this area particularly important for caribou hunting. For many Gwich'in groups the caribou was so much a part of their lives that it formed the very basis of their culture. Not only did the animal provide an immediate protein source and cherished delicacies, but when dried and stored well, it provided a continuous year-round source of meat. As well the skins were used in the construction of shelters. Tanned caribou skin clothing provided excellent protection from insects, and with the fur left on, it was the most suitable winter clothing. Caribou bone and antlers were made into tools and utensils. The intestines and organ casings made excellent cooking and storage containers. In every sense of the phrase, it is true that "nothing was wasted". An animal of such great importance is particularly revered in many Gwich'in legends, and it is part of the legends of other groups as well.

Landmarks and Travel Routes

The traditional place names, particularly of the Gwich'in, are still used in the Ogilvie and Richardson mountain ranges. Many of these names suggest the physical characteristics of the area, well known events, or they relate to legends associated with the feature. These features became important landmarks for travellers. Another type of landmark used along the Peel River were lobstersticks. These were made of standing trees with just the top branches left to form a marker.

The entire length of the Dempster Highway either crosses traditional travel routes, runs parallel to them, or follows an old trail. The route used by the Northwest Mounted Police was a Gwich'in trail linking Fort McPherson and the Dawson area. As well an extensive trail network linked many small Indian encampments. Some trails were suitable for foot and dog pack travel and were used only in summer. Others were winter routes and could be used by dog teams. Water travel was limited, however mooseskin boats were used to take people down the Peel River from the point of navigation at the mouth of the Wind River. Boats were used on Arctic Red River by the Nakotcho (Arctic Red River) to travel to the mouth of the Snake and Bonnet Plume.

3.3.3. Early Contact

Early Explorers and Surveyors

In 1789 Alexander Mackenzie of the Northwest Company was the first Euro-Canadian to descend the Mackenzie River in hopes of finding a river from the northern interior to the Pacific. Native people in the area told him of a river across the mountains to the southwest, which emptied into the Pacific. Mackenzie was unable to persuade any of these people to accompany him there, and he was unable to pursue the search further. In 1826, John Franklin ascended what he thought was a branch of the Mackenzie River and later realized it was a tributary. He called it the Peel's River, after Sir Robert Peel, British Home Secretary and later Prime Minister.

Robert Kennicott, an American naturalist, was the first English-speaking scientist to undertake natural history research in the Yukon. The Smithsonian Institution and the Audubon Society provided financial backing for the expedition, and the Hudson's Bay Company offered transportation and accommodation. Kennicott arrived at Fort McPherson in 1860 to begin his travels to Lapierre House and Fort Yukon. He spent the winter and part of the summer of 1861 collecting specimens and left the following winter.

The first government survey of the area was done in 1888 by R.G. McConnell, a Dominion Land Surveyor. McConnell, was part of the Yukon Expedition along with William Ogilvie and George Dawson. He arrived at Fort McPherson in July to begin his survey of the Richardson Mountain passes and the Porcupine River.

In 1893 Comte de Sainville, a gentleman explorer from France, travelled and mapped the Peel River to the mouth of the Bonnet Plume. His map was used later by George Mitchell, a prospector who wintered at Wind City while attempting to reach the Klondike.

The Fur Trade

As a result of favourable reports on the abundance of fur along the Peel River in John Franklin's reports, the Hudson's Bay Company sent John Bell to the Mackenzie district to begin exploration of the Peel River country in 1839. Bell ascended the river as far as the mouth of the Snake and then mistakenly continued on to its headwaters. That same summer he explored the Rat River as far as the portage, where he met a group of Tukkuth Gwich'in (whom he called Mountain Indians) engaged in trading with the Tetlit Gwich'in. This route became the lifeline of the fur trade in the Yukon for over twenty years. Orders were soon dispatched to construct a post on the Peel River, above the mouth of the Rat River. The post was built in 1840 and called Peel's River Post. Sometimes it was referred to also as Fort McPherson. In 1844 he explored the Porcupine River to where it entered a much larger river which he named according to his rendering of the local dialect, the "Youcon". Alexander Hunter Murray established a post at the junction of these two rivers in 1847 which proved to be very successful and continued to operate for 22 years.

Of all the traders sent to the North-west, John Firth is best remembered by Gwich'in people. He arrived in 1872 and spent some fifty years in the north, many at Rampart House and Fort McPherson. He married a local Indian and raised a large family.

Missionaries

Rivalry existed between Roman Catholic and Anglican missionaries as they attempted to expand their influence throughout the north. Missionary work in the Yukon began in 1861 with the visit to Fort Yukon of W.W. Kirkby of the Church of England. The following year Reverend Robert McDonald was posted there to establish a permanent base. At the same time Father Seguin began a Roman Catholic Mission there, but left after a year, having failed to gain many converts. McDonald continued to work in the area for the next four decades laying the foundation for a strong Anglican presence in the northern Yukon.

Travel Routes

Indian travellers both before and after contact generally travelled in extended family groups using both rivers and overland routes, or combinations of the two, depending upon the season. The Tetlit Gwich'in used the Peel, the Snake, the Bonnet Plume, and the Wind River. Some groups continued along the Little Wind, to the Hart River, and over the divide to the Blackstone River. Other Tetlit Gwich'in groups travelled over the Richardson Mountains to Rock River.

Tukkuth Gwich'in of the upper Porcupine River travelled throughout the area from Johnson Creek and Whitestone Villages to Blackstone Village. Nakotcho (Arctic Red) people travelled up the Arctic Red River to the mouth of the Snake River and the Bonnet Plume River. Northern Tutchone travelled to the Hart River, the Snake, Bonnet Plume, and Arctic Red rivers to reach caribou hunting areas. The Han travelled over the Seela Pass to the Blackstone River.

The early Hudson's Bay Company route from Fort McPherson to Fort Yukon crossed the Richardson Mountains at the Stony Creek Pass. A considerably shorter route through the McDougall Pass was not found by the HBC until 1872.

3.3.4 Klondike Gold Rush

Gold Rush Routes

Some prospectors entered the Yukon by way of overland routes from Edmonton. One route was down the Mackenzie River to Fort McPherson. From this point several routes into the Yukon were utilized. Some people travelled up the Peel River to the Wind or the Bonnet Plume Rivers and over to the Stewart River, then on to Dawson. Others took the route used by the Hudson's Bay Company over the Stony Creek Pass or McDougall passes, then down the Porcupine River, and up the Yukon River to Dawson. Another somewhat insignificant route followed the Porcupine River to the Miner River and continued overland to Dawson.

Gold Rush Personalities, Stories and Sites

All along the Peel River, the Porcupine River, and at the McDougall and Stony Creek passes, miners were forced to take refuge during the winter of 1898-99. Some gathered at places that were given colourful names such as Wind City, Destruction City, and

Shacktown. Contact with these men sparked the interest of the Tetlit Gwich'in who began to travel to Dawson in 1899 to sell meat and furs. Those who regularly sold meat in Dawson became known as the "Dawson Boys". The village of Blackstone became an important stop-over for families travelling back and forth to Dawson.

The Yukon Act and the Eastern Boundary

The Yukon Act was passed by the Canadian government in 1898, establishing the Yukon district as a territory separate from the Northwest Territories. It confirmed the eastern boundary that had been defined in 1896 for the Yukon District, and provided for civil government in the Yukon. The boundary did not affect Gwich'in use of the area until the 1920's when the Yukon government considered game laws that would restrict hunting and trapping activities in the area.

Market Hunting

The selling or trading of wild meat by Indian people to non-Indians began with the supply of meat to Hudson's Bay Company posts, and later to miners in the Forty Mile area. During the gold rush it became a booming and profitable industry which continued for many decades.

3.3.5. The Gold Rush Aftermath

Northwest Mounted Police

Patrols between Dawson, Fort McPherson, and Herschel Island began in the winter of 1904-05 to provide a communication link between these smaller posts and Dawson. The route to Dawson was selected by Sergeant F. Fitzgerald and followed the trail used by the Tetlit Gwich'in. It covered 765 kilometres and was considered by some of the best Gwich'in hunters to be a very difficult trail in winter. The patrols continued until 1921 without mishap, save the tragedy of the Fitzgerald patrol or "Lost Patrol" in 1910-11. Patrols travelled regularly to Herschel Island from Fort McPherson for many years as well. Native guides generally accompanied the patrols to assist the police.

Missionaries and Native Catechists

Anglican missionaries were based at the trading centres like Fort Yukon, Rampart House, and Fort McPherson. Native catechists were trained by Robert McDonald and other clergy so that they could travel with family groups to hunting and fishing camps, where they conducted services in the Gwich'in language. They utilized hymn books and other materials translated into Gwich'in by Robert McDonald.

Northern Yukon/ NWT Ties

Many linkages existed between northern Yukon and the NWT before the contact period, and these ties continued in later years. Fort McPherson became an important supply post for the Tukkuth Gwich'in of the upper Porcupine, during the period of Hudson's Bay trading. A great many Tukkuth married Tetlit Gwich'in and thereby established even stronger ties to Fort McPherson. The same was true, but to a lesser extent, of Northern Tutchone and Nakotcho marriages. As well, the Tetlit Gwich'in still utilized the headwaters of the Peel River as their winter hunting grounds. Missionary travel and Northwest Mounted Police patrols further strengthened these ties. As well, Dawson continued to be a supply centre for much of northern Yukon and Fort McPherson.

Old Crow

The settlement of Old Crow, situated on the Porcupine River at the mouth of the Old Crow River, lies near one of the richest archaeological areas, and possibly the oldest habitation sites, in North America. The village site had been a fish camp but grew in importance when a smallpox epidemic broke out in 1911 at Rampart House. As a result, this settlement was abandoned and people relocated to Old Crow. In later years, a number of different traders operated here. An Anglican mission and the RCMP post contributed to making Old Crow a year round settlement by the late 1920's. Tukkuth Gwich'in people used the community as a home base although they continued to trap and travel over a large area extending into the Dempster corridor.

Bishop Stringer and His Boots

Isaac O. Stringer arrived in the north in 1893 and spent four years travelling between Fort McPherson, Herschel Island and other small settlements. In 1909 Bishop Stringer and another missionary, C.F. Johnson, became lost while crossing the Stony Creek Pass. They ran short of supplies and were forced to boil parts of their skin footwear in order to obtain some nourishment. Bishop Stringer became known as the "Bishop who ate his boots".

North Fork Hydro Project

The North Fork power plant was part of a complex hydro and thermal electric power system on the North Fork Klondike River during the early 1900's. The North Fork plant supplied power to Dawson City as well as to the gold fields until 1966 when the last of the Yukon Consolidated Gold Company dredges was shut down. Since 1967, electrical power for Dawson has been supplied by diesel generator units.

Trading Posts/Stores

Dawson continued to be an important supply centre for northern Indian people after the gold rush. Many Gwich'in and Han people took part in the wage economy in the Dawson area. Dawson was also a place to sell furs and meat, and to purchase supplies. As a result, Fort McPherson was nearly deserted from 1900 to 1914 when Tetlit Gwich'in began to return from Dawson. Andrew Kunnezzi, a Tetlit Gwich'in man, established a small trading post in the Blackstone Uplands and brought supplies in from Dawson. Furs were also traded at Herschel Island and along the northern coast where whaling and trading ships wintered. The whalebone industry collapsed in 1907 but trading ships continued to visit the area.

3.3.6. The Trapping Years, 1921-1940

Peel River Preserve

The Peel River game preserve was established in 1923 by the Northwest Territories Government. The land was preserved for the purpose of hunting, fishing, trapping and cutting wood by those defined as Indian by the Indian Act. The land remains a preserve today and is not reservation land.

R.C.M.P. Patrols

The patrols between Dawson, Fort McPherson, and Herschel Island ended in 1921. Later posts were established at Aklavik, Rampart House (which later was moved to Old Crow)

which brought changes to the patrol routes in the area. The R.C.M.P. moved its western Arctic division headquarters from Herschel Island to Aklavik in 1937 and made fewer trips to the dwindling island community. Short patrols were made each year to visit the small settlements of Johnson Creek Village, Whitestone, and the cabins of non-Indian trappers.

The Mad Trapper

The story of Albert Johnson, "the Mad Trapper of Rat River", was the first northern event to receive radio coverage throughout North America while the story unfolded. It was also the first time that two-way radios and aircraft were used in an R.C.M.P. manhunt.

Trading Posts

Fur prices continued to rise until the 1930's, particularly prices paid for marten and muskrat. Trapping increased in importance within the Gwich'in economy. Some new trading posts were opened and others were located at old Hudson's Bay trading sites. Most were owned by private traders, a few were operated by the Northern Commercial Company. The Hudson's Bay Company kept its Herschel Island post open until 1937, and several others were operating along the Arctic coast.

Early Aviation

The value of aircraft to Northerners had been recognized since the late 1920's. In 1929 a federal government official visited the communities of Aklavik, Fort McPherson, and Dawson by airplane. Airmail service from Whitehorse to Dawson and Mayo began in 1927, and by 1934, scheduled passenger air service was offered to these same communities by several carriers. Planes were being used by large mining companies in the Mayo area to reach remote prospects. Non-Indian trappers had begun to transport their winter outfits by plane.

Hunting, Trapping and Changing Wildlife Regulations

Throughout this period, trapping, next to gold mining, was the territory's second largest industry. In 1929, an attempt was made by the Yukon government to apply a \$100 per year license fee to all non-resident hunters and trappers, including the Gwich'in from Fort McPherson. After some discussion with a federal government official, this decision was reversed. Several disputes arose between non-Indian and Indian trappers in this period but the game laws lacked any provision for arbitration in such situations. In 1938 revisions to the ordinance empowered the R.C.M.P. to arbitrate disputes. Another revision increased the license fee for non-resident hunters and trappers to \$300 per year, which was applied to McPherson Gwich'in trappers.

3.3.7. The Accessible North & Government Involvement 1940-present

World War II

Up to World War II the north had remained relatively isolated from the rest of North America. This isolation continued during the early years of the war with most Yukoners involved only to the extent of contributing to patriotic fund raising projects. Chief Moses and the people of Old Crow sent a donation to King George for the relief of war orphans, for which he was awarded the Empire Service Medal. Then in 1942, the Japanese invasion of the Aleutian Islands triggered an alarm bell which has been ringing ever since- the vulnerability of the north to foreign invasion. A number of large scale projects were

undertaken in the 1940's to improve access between north and south. The north assumed a new strategic importance in the minds of southern politicians.

Post War Defence Projects

The Distant Early Warning (DEW) Line is a chain of radar stations stretching from Point Barrow, Alaska, to Cape Dyer, Baffin Island, constructed from 1955-57. During this period a Lurno tractor being used on the project broke down at a borrow pit near Km 132 on the Dempster Highway. Life Magazine printed a photograph of this event bringing international attention to this area.

Government Involvement and Native Peoples

Following World War II, government social programs were increased and extended to northern Indian people. New legislation concerning family allowance, and old age pensions, plus other programs included native people. New schools were built in many northern communities, and more native parents sent their children to school. Settlement patterns altered greatly as considerable time was now spent in communities while children attended school. The Yukon game ordinance was further amended to require the registration of individual and group traplines in 1951. The Old Crow band chose to establish a group trapline in 1958, in keeping with their traditional pattern of land use. This area surrounds the Eagle Plains Hotel.

Oil and Gas Exploration

The oil and gas potential of the Peel Plateau and the Eagle Plains area attracted several exploration companies. During the winter of 1954-55, a cat train winter road was developed from Flat Creek to Eagle Plains. Joe Henry, a Tukkuth Gwich'in man, was responsible for choosing much of the route. In 1959, construction began on the first 40 kilometres of the Dempster Highway. That same year Western Mineral Resources discovered oil and gas at Eagle Plains. Five wells were capped, three containing gas and two containing oil. Government assistance was provided to maintain and extend the tote trail a further twenty miles. A trail was also developed from Mayo leading 320 kilometres north to transport equipment and supplies to Amerada Petroleum in the Hungry Lake area.

TUKKUTH
GWICH'IN

The "Roads to Resources Program"

The federal government initiated a long-term planning program for northern highway construction in the 1950's. The need for a road to the Eagle Plains area was recognized, and by 1955 the "Dempster" highway project had become part of the long-term plan, though low in priority. Over the next few years, the Yukon government continued to lobby for the project.

During the 1958 federal election campaign Prime Minister John Diefenbaker focused on the need for road development in the north. The highway was built in stages. It was not officially opened until August 18, 1979.

Big Game Hunting

The completion of the first thirty miles of the Dempster Highway made possible other commercial activities in the area. Outfitter Bobby Austin was first to set up a big game hunting business along the Dempster, with his wife Frances. After he died his widow (now Frances Woolsey) continued to operate for a few years before selling out to Pete Jensen.

She was the second woman, next to Belle Derosier, to manage a big game hunting business in the Yukon. Another early outfitting business in the area was owned by Doug Lowe.

Oil and Gas Boom

In the 1960's and 70's many oil and gas exploration companies were active in the Eagle Plains and the Old Crow Flats. Many native people were concerned about the effects of these drilling and exploration activities on wildlife and habitat. The discovery of offshore gas reserves in Prudhoe Bay in 1968 sparked new interest in the economic potential of the north, and numerous schemes were proposed for major pipelines and other developments on the North Slope. For the first time in the history of the north the impact of major developments on the environment and on native people was assessed in a series of public inquiries. Ultimately unfavourable economic conditions put these proposed projects on hold.

Land Claims

The issue of land ownership in the Yukon and NWT had not been resolved when these major developments were taking place, as Yukon Indian people had never signed any settlement treaties with the Canadian government. Indian people adopted a strong and unified stance that "no pipelines be constructed until land claims are settled". A similar position was stated in regard to the completion of the Dempster Highway, that construction should cease until a land claims agreement was signed. Areas along the Dempster Highway Corridor are included in the land selections of several bands in the area. In addition an overlapping claim is being presented by the McPherson Band for areas traditionally used by Tetlit Gwich'in.

The Porcupine Caribou Management Board

The Porcupine Caribou Management Board was created in October 1985. The board is composed of eight members representing the federal government and native organizations in the Yukon and the Northwest Territories. The main objective of the board is to protect the Porcupine caribou herd and its habitat while meeting the subsistence needs of users. In this regard the board recommends harvest allocations and hunting regulations. The chairman of the organization also sits on the International Porcupine Caribou Board.

Other Users of the Highway

The Dempster Highway Corridor has become many things to many different people. In 1964 A.Y. Jackson and Maurice Haycock travelled the route to sketch the landscape. In the 1970's it provided a magnificent setting for the filming of "Never Cry Wolf".

Present Day Use

The highway is now being used to transport goods to, or closer to, many northern communities. During the hunting season the highway provides access to the caribou during their fall migration. Several wildlife research studies have been undertaken in the corridor. One example is Birds of the Dempster Highway, by Robert Frisch. The highway is a point of access for Old Crow people allowing them to reach their group trapping area that was once accessible only by a dog team or snowmachine. For the Tetlit Gwich'in the highway provides quick access to their traditional winter hunting and trapping areas. The Tukkuth Gwich'in can visit relatives in Fort McPherson and Old Crow. Northern Tutchone can drive to Arctic Red River to maintain their family connections. Han people can travel to a

superior hunting area. Increasingly many visitors from around the world also travel through the Dempster corridor.

The Arctic Circle

The concept of defining polar regions has existed since the 1600's. Those regions were described by early scholars as including "all those stars which never set". Today the Arctic Circle refers to a scientifically determined line at latitude, 66 32' north. The area above the line is not a region in the sense of being defined by uniform climate, topography, nationality, culture, extent of treeline, or any other natural features. It is an area of considerable variation. In recent times circumpolar groups, such as the Inuit Circumpolar Conference (ICC) and Indigenous Survival International (ISI) have organized to deal with some common issues in the region.

Annie and Joe Henry

No one else knows the southern portion of the Dempster Highway better than Annie and Joe Henry. Annie was born at Blackstone Village and Joe was born at his family camp between the Hart and Wind rivers. They spent a few years at Moosehide but always came back to the Blackstone area to hunt and trap. In 1927 they moved to Fort McPherson but returned to Blackstone Village in 1931. They have raised twelve children and have spent most of their lives hunting, fishing and trapping in the area.

4.0 INTERPRETIVE STRATEGY

The proposed interpretive strategy corresponds to the sequence of tasks outlined in Table 1. The interpretive features inventory and visitor perceptions about the Dempster Highway were combined to derive the outline of themes, subthemes and storylines. This stage, summarized in Sections 4.1 and 4.2, was in turn followed by an evaluation of the audience profile to help determine interpretive options as discussed in section 4.3. Throughout the interpretive planning process, environmental, land use, social and economic constraints were considered. These are presented in Section 4.4.

The proposed interpretive strategy, as outlined in Section 4.5, is the culmination of all the preceding tasks and considerations. The strategy recommends a range of interpretive activities and sites appropriate to the Dempster Highway setting and in keeping with the characteristics of visitors. The strategy is the conclusion of the planning process for the purposes of this study and represents the recommendations of the study team. Costs and priorities are outlined at the end of the proposed interpretive strategy in Section 4.6.

4.1 INTERPRETIVE THEMES AND SUBTHEMES

The compilation of natural and cultural heritage interpretive features, as presented in section 3.0 Interpretive Inventory, is the foundation from which themes were developed. The identification of themes is the process by which important information is identified and categorized. The purpose of dividing information into categories such as themes, subthemes and stories is to provide interpreters with a format suitable for determining what information is important to the area, how it should be presented, and where. The titles are used to attach a single image to each theme or subtheme and are intended for use in planning rather than for distribution to the public. Hence the phrase "Our Home, Our Native Land" may or may not ever appear in print or be uttered by an interpreter but it is an image that an interpretive planner can relate to when thinking about what to tell a visitor.

Within each subtheme are a number of stories or interpretive features. These stories are summarized, with the appropriate references provided, in Appendix 5.3. Use of the story information is intended for those implementing this strategy.

4.1.1 Natural History Theme

TRUE NORTH

In Canada, a country that is physically defined by boreal forest and long winters, the Dempster Highway is a meandering line through the heart of the "true north"; a land where even the spruce hide from the elements in river valleys and the bitter cold is aggravated by nights that can last for weeks and summers that are all too brief.

A visitor to the Dempster in summer is struck by the fact that they have come from the "south" - even if the south is Whitehorse. The landscapes are strange, beautiful and a bit unnerving. The familiar deer and crows are absent; in their place are the trails of the giant herds of caribou and the tracks of grizzlies. The days are unnaturally long and surprisingly

warm. A visitor clings to the road like the first explorers might have stayed with their boats on the river. To be away from river or road is disorienting.

Nearly one third of Canada lies above the treeline. Perhaps 20 % of our country is north of the Arctic Circle. The Dempster Highway crosses the circle, passing in and out of forest, until it finishes in Inuvik only a few kilometres south of the most northerly trees in Canada. The Dempster passes through wilderness as defined by the animals that live there; animals like grizzlies, wolves and caribou which will not tolerate the encroachment of civilization. The rolling tundra is an introduction to what lies ahead, and the rounded mountains, like ripples in the tundra, are another reminder that the visitor is from the south where glaciers carved, scraped and gouged the Canada that we are more familiar with. Here the land was shaped first and foremost by the invisible: relentless wind and temperatures capable of freezing water, earth, and rock.

Boundaries mark changes and the Dempster Highway passes through boundaries that are physical, historical, political and psychological. Only the political border is marked. The rest - glaciated mountains to Beringia, forest to tundra, boreal forest to subarctic, south to north - await an inquisitive mind to reveal their presence and meaning. The Dempster Highway leads to the true north.

Natural History Subthemes:

1) Caribou

Only the barren-ground caribou remain of the great herds of large mammals that once roamed North America. The bison and antelope are now reduced to small remnant herds. If the north is - for Canadians - the last free wild place then the caribou are a living symbol of a land so large and undisturbed that 170,000 animals can wander its breadth and only once cross that icon of civilization: a road. These great herds are, and always were, crucial to the survival of the native peoples of the area. Caribou have a fascinating life history of great migrations, battles with wolves and grizzlies, and bulls sparring for female attention. The management of caribou is often controversial involving, as it usually does, mineral rights, national, state and territorial borders, and land claims. But most of all it is the mere existence of this giant herd that defines the land that the Dempster crosses.

2) Beringia

The Dempster welcomes the visitor to the true north, not by the fact that it is typical of the millions of square kilometres beyond - no area is "typical" - but because it is so different from what lies to the south. The principal difference is that the Dempster passes through Beringia, an area that was never glaciated. The crucial role of weathering is easily understandable along most of the route. In windy passes it is not even necessary to leave your vehicle to be made aware of the wind's potential for bringing about change. In the southern portion of the highway the contrast between glaciated area and Beringia is visible and can be easily explained. Along the highway are numerous unusual geological features emphasizing the role of erosion. More subtle differences, such as the presence of plants and animals that made use of the area as a refuge, and likewise a refuge for early human inhabitants, require more detailed explanations to make the visitor aware that what lies before them is a scene many thousands of years older than the 10,000 years that is the norm for virtually the whole of the rest of Canada and the northern United States.

3) Tundra and Permafrost

A visitor from the south usually has two ideas of the north in his mind; cold and white. The cold is certainly true; average temperatures of below freezing have shaped the land, by means of permafrost, every bit as much as the other agents of change. Present along the highway are excellent examples of solifluction, drunken forests, and pingos, all proof that rocks and soil can freeze just like water. The white image is true only to a certain extent. Visitors are fascinated to learn that precipitation is not high (Ottawa, for example, will receive three times as much as Dawson) but the low temperatures keep the area white for a longer period of time and, if the wind is up, make white the only colour that is visible. It is important to remember that the Dempster only appears to be a "normal" road because the visitor is usually there in July or August.

The tundra of the Blackstone Uplands and the Richardson Mountains reflect the landscape that lies beyond to the north. Tundra is a northern specialty, the product of wind and permafrost. The stunted vegetation will remind some visitors of scenes from the southern prairies and deserts...until they take a walk and discover the rolling, hummocky, and wet nature of tundra. But a wonderful creation of tundra conditions are the spectacular wildflower blooms. The adaptations and strategies of tiny flowers that make them successful in a land where trees fail is a wonderful introduction to the ecology of the subarctic.

4) Creatures of Wilderness

Although there is no universally accepted definition of wilderness, one commonly used method is to define it in terms of the animals that live there. Grizzlies, wolves, and wolverines are examples of animals that will not or cannot adjust to close proximity with humans. All of these animals are present along the Dempster Highway and although only rarely seen, their survival suggests that we are in an area that many would call wilderness. Along the highway are such northern specialties as gyrfalcons, Dall sheep, three species of Ptarmigan, and in the rivers, grayling and char. These serve as reminders that we are in the north. Also along the highway are better than average chances to observe golden eagles and peregrine falcons; the former perhaps our most impressive bird of prey, the latter a species struggling back from near extinction. Sighting a great bird of prey is evidence of being in a place that has been, as yet, only lightly touched by the twentieth century.

5) Patterns in the Landscape

The land through which the Dempster Highway runs was shaped by forces even more powerful than glaciers, wind and water. The mountains themselves are evidence of the movement of entire continents with the attendant upheavals, thrusts and faults. All along the highway is evidence of these incredible forces at work in areas that were inland seas and are now tundra; old and new routes for the rivers; and of course, the mountains, here shaped by glaciers, there shaped by wind and water, but both created by the drifting of continents. The weaving of blue rivers, grey mountains, green forests, and the highway itself, create a braid of interwoven colours.

4.1.2 Cultural Heritage Theme

OUR HOME, OUR NATIVE LAND

The land that the Dempster Highway passes through may be the oldest settled and continuously occupied area in Canada. People have lived here for thousands of years, almost certainly tens of thousands and, according to northern Indian oral history, have always been here. Like the caribou, they have been shaped by the cold, the wind, the rivers, the animals, the forests and the land until they fit so perfectly into the structure that the scene is almost unimaginable without them. The peoples who lived here many thousands of years ago left few traces of their travels and activities. They may have been the predecessors of present day Indian groups, or they may have moved on to other parts of the continent to be replaced by new arrivals in this area. The movements of the Gwich'in people, as well as those of the Han and Tutchone in the southern portion of the area, have been continuous for countless generations and yet they have left, and leave, only the slightest of marks on the landscape. Here was a fishing camp. And in another place, here is a fishing camp but the people are absent now hunting caribou. The Peel River is a good route to the trapping grounds; the Dempster Highway is a good route to other settlements.

A harsh climate and an unforgiving landscape breeds endurance and cooperation in a people. The Gwich'in people found and continue to find, all they need in this land, and have lived at peace with each other - with the newcomers, such as the explorers, traders and miners, who came to their land. Brief disputes occasionally arose between the Gwich'in and their Inuvialuit neighbours, probably related mostly to trading tensions as conditions changed in the early contact period. Most of these came for their own very specific reasons: the land held gold or routes to gold, and the forests and rivers grew "gold" in the shape of marten, beaver and muskrat. Some merely passed through while others came and stayed, bringing different meanings to "home" and "native land". The Inuvialuit brought competition for scarce resources but they also brought trade goods from the sea; the whites brought modern society and technology. The Northwest Mounted Police "brought" Canada to the north.

The Dempster Highway, like many of our modern projects, was built for a very specific reason; the land holds new gold in the form of oil and gas. Now the highway brings whomever chooses to make the journey. All of these travellers have been welcomed by the Gwich'in who guided the explorers, fed the miners, rescued the foolish, helped find the wicked, and led the crews that built the highway through their home, their native land.

Cultural Heritage Subthemes:

1) We Have Always Lived Here

The creation mythology of the Athapaskan, the language group to which the Gwich'in belong, incorporates a sense of always being here in contrast to the Inuvialuit tales of "coming" to the area. The presence of an unglaciated refugium lends credence to the possibility of very long human occupation. Archaeological data suggests occupancy in northern Yukon of at least 24,000 years before the present. Legends regarding the animals of the area, particularly the caribou, further support a long evolutionary relationship with the land and its other occupants.

Over this period a way of life developed that involved synchronizing life style with the habits of the game animals, particularly caribou, moose and fish. Archaeological evidence of major changes in lifestyle probably reflect changes in the landscape (e.g. water level fluctuations) and changes in prey species' populations and behaviours. There are numerous archaeological sites along the Dempster which substantiate long term occupancy, although the identity of these early groups is unclear. There are more recent oral traditions of contact between cultures and linguistic groups (Gwich'in with Han, Tutchone, and Inuvialuit) which usually were beneficial to all parties as they shared trade goods and ceremonies.

2) Early Contact

Early contact with Europeans followed a pattern which is similar for much of Canada. Explorers (Mackenzie, Franklin) were closely followed by fur traders who, in turn, were closely followed by missionaries, scientists and surveyors. In addition, these meetings brought - also the norm for contact with aboriginal peoples - catastrophic epidemics of disease, crises related to the scarce resources of the area, and, relocations and changes in the movements of the native people in response to the fur trade and the availability of new goods. And all along the route Christianity took its place along side of the old beliefs.

3) Gold Rush

While the gold rush was peripheral to all but the southern portion of the Dempster Highway, its effects on native society were not. Prospectors became regular visitors to the land of the Gwich'in, either en route to the Klondike or in search of new gold sources. The travellers needed help and supplies, and in exchange, provided new goods. Many native people travelled down to the booming town of Dawson either to trade or to work (e.g. Dawson Boys). Hunting changed from its historical subsistence function to include market hunting in order to provide the gold-seekers with dinner.

4) Mounties, Borders and Boundaries

By 1900, the land was most definitely part of Canada. The N.W.M.P. maintained posts and undertook regular patrols between Dawson and Fort McPherson, almost always with the help of native guides. The twin dramas of the "lost patrol" and the "mad trapper" brought the area to the attention of the rest of Canada. For the Gwich'in, southern patterns of settlement and society increasingly took root but the old way of life - movement through the seasons - continued as well. At the south end of the highway, hydro was developed as a source of energy for the electric dredges in the gold fields.

By the middle of this century, changes had come which would not pass as quickly into history as did the gold rush. Airplanes made every part of the north Yukon and western N.W.T. accessible in a matter of hours. And now there were maps filled with boundaries and borders: political boundaries, trapping boundaries, reserve borders, mining claims. The government of Canada took an active role in managing the area, made aware by World War II and the ensuing Cold War of the vulnerability of this large land with its small population. And the discovery of a new "gold" - oil and gas - meant that all of the country now had a stake in the future of the land that the Gwich'in call home.

4.1.3 Travel Theme

ROAD TO THE ARCTIC CIRCLE...AND BEYOND

We have called it a travel theme because some experiences most strongly require explanation to the newcomer. A long-term resident may take the highway for granted, barely notice the Arctic Circle marker, and wait impatiently for the ferry at the river crossings. For the newcomer, however, these events and sights all have special meaning.

Firstly, the highway is not something to be taken for granted. It is a river to the north promising adventure and excitement. To pull off, wander about, and then to catch sight of the narrow strip of gravel road far in the distance is a vivid reminder that the land is very big yet the modern world has daringly pushed its way into it. A car or truck far in the distance against the rolling tundra makes a lonely picture and their passing invites questions usually reserved for ships passing each other by: who are they and where are they going?

The Arctic Circle represents a psychological point of entry for the traveller. It is a recognizable landmark in the sense that the visitor will almost certainly have heard of it. If they had the slightest doubt that they were in the north, crossing this imaginary line removes it. If a traveller on the Dempster is analogous to a sailor making a voyage, then crossing the circle is their first sighting of a sought-after foreign landmark.

The next major landmark for the traveller will be the Peel River crossing. This is their first arrival in a northern community and likely their first encounter with the residents of the area. The journey to this point has filled them with wonder about the natural landscapes they have encountered. From this point on, they will meet more and more of the people of the Dempster.

Travel Subthemes:

1) The Dempster Highway

It is a journey of over twenty years between John Diefenbaker's announced "road to resources" and the completion of the Dempster Highway. Over 20 years of plans, surveys, meetings, public hearings, inquiries, and land claims have been mixed together with cat trains ploughing through deep snow and with little bands of men marking a route and then building a road.

The highway now brings tourists and truckers, and many others, to a part of the world that just ten years ago could only be reached by airplane and 60 years ago could only be reached by canoe, dogsled, steamboat or on foot. Now recreational vehicles share the highway with transports bound for the northern settlements. Visitors hike, canoe, bird-watch, photograph, fish and hunt aided by outfitter-guides, naturalists, highway crews who maintain a clear passage, and community residents who provide services and information. The resources originally sought still remain in the ground; perhaps for only a few more years, perhaps forever. But the road does lead, in its winding river-like way, to even richer resources: a wild land and a people both strong and gentle enough to call it home.

2) Arctic Circle

Everyone stops - at least on their first visit up the highway - at the Arctic Circle. In a sense, the Arctic Circle is a real place, as "measurable" with modern instruments as any political border and, historically, more stable and consistent in location than mere continents or mountain ranges. It defines another northern specialty: days or nights without end. But more important than its "definability" to a visitor is the existence of the circle as a psychological destination. The Arctic Circle has a place in the psyche beside such other locations as "darkest Africa" or Tierra del Fuego. It is a place for explorers and adventurers. The Dempster Highway provides an opportunity for all of us to be an explorer, to venture into the true north.

3) Mackenzie River System

For the last 250 kilometres, the Dempster crosses then parallels the Mackenzie River and the Peel tributary on the way to the Arctic Ocean. The largest river system in Canada, the Mackenzie was, for years, the route that took Athapaskan and Inuit people to fish camps and hunting grounds and, more recently, the route that led explorers, fur traders, and miners into the north. The Mackenzie is also an important symbol for the traveller along the Dempster. Prior to crossing the Peel River, a visitor has crossed over between Pacific and Arctic watersheds on several occasions. Upon arrival at the Peel, there is no ambiguity about direction. From this point on the visitor is headed north to the Arctic, to the northern limit of the southern forest, and into the land of the Inuvialuit.

4) Inuvik...And Beyond

It is important to recognize that only the road - not the journey - ends at Inuvik. Inuvik is the gateway to the Western Arctic with all of its landscapes and Inuvialuit communities. The end of the road is really the beginning of a whole new set of experiences and possible journeys: Tuktoyaktuk, Herschel Island, Sachs Harbour, etc... Nor is the drive south a simple reverse journey for the traveller who has flown directly to Inuvik, and the visitor who has arrived by vehicle, will both find that their journey south on the Dempster will reveal a whole new perspective on land and people.

TABLE 4. INTERPRETIVE THEMES AND SUBTHEMES

TRUE NORTH	OUR HOME,OUR NATIVE LAND	ROAD TO THE ARCTIC CIRCLE...AND BEYOND
Caribou	We Have Always Lived Here	Dempster Highway
Beringia	Early Contact	MacKenzie River System
Tundra and Permafrost	Gold Rush	Arctic Circle
Creatures of Wilderness	Mounties, Borders and Boundaries	Inuvik...and Beyond
Patterns in the Landscape		

4.2 STORYLINE ORGANIZATION

Organized by theme and subtheme affinities, interpretive features of the Dempster Highway Corridor are arranged as stories. Elaboration of each story is presented in Appendix 5.3.

NATURAL HISTORY THEME:

TRUE NORTH

Subtheme:

CARIBOU

Stories:

Migration

Winter range ecology

Woodland Caribou

Rut

Predators

Legends

Human Dependence ,Past and Present

Management

Status and Vulnerability

Possible Sites for Interpretation of Subtheme:

Tombstone for woodland caribou, Chapman Lake, Eagle Plains, Ogilvie Mountains, Arctic Circle, Richardsons, almost anywhere

NATURAL HISTORY THEME:

TRUE NORTH

Subtheme:

BERINGIA

Stories:

Definition

Geology

Weathering

Refugium

Human Occupancy

Possible Sites for Interpretation of Subtheme:

Chapman Lake, Windy Pass, Arctic Circle, Richardsons

NATURAL HISTORY THEME:

TRUE NORTH

Subtheme:

TUNDRA AND PERMAFROST

Stories:

Permafrost

Wind and Snow

Angle of Sun/Insolation

Vegetation

Traditional Travel

Effects on Highway Construction

Tussock Community

Fragility

Possible Sites for Interpretation of Subtheme:

Blackstone Uplands, Richardsons, Eagle Plains

NATURAL HISTORY THEME:

TRUE NORTH

Subtheme:

CREATURES OF WILDERNESS

Stories:

Grizzly

Dall Sheep

Moose

Wolverine

Wolf

Falcons

Golden Eagle

Arctic Grayling

Whitefish & Inconnu

Personalities: Robert Frisch

Possible Sites for Interpretation of Subtheme:

Tombstone, highway sites for raptors, highway sites for sheep, river sites for grayling, Chapman Lake for outfitters, Peel River for whitefish and inconnu.

NATURAL HISTORY THEME:

TRUE NORTH

Subtheme:

PATTERNS IN THE LANDSCAPE

Stories:

Glaciated versus Unglaciated

River/Drainage Changes

Mountain Building

Autumn Colours

Delta Braid

Engineer Creek

Possible Sites for Interpretation of Subtheme:

Tombstone, highway sites along Blackstone, Richardsons,
km 23, Engineer Creek

CULTURAL THEME:

OUR HOME, OUR NATIVE LAND

Subtheme:

WE HAVE ALWAYS LIVED HERE

Stories:

Creation Myths and Legends

Ancient Indian and Paleo-eskimo Cultures

Pre-contact Cultures

Aboriginal Trade

Travel Routes and Landmarks

Possible Sites for Interpretation of Subtheme:

Selected archaeological site, Calico Town, Blackstone Uplands, Fort McPherson, Rock River-Whitestone and Johnson Creek Village, Tombstone Mountain, Eagle Plains - Old Crow

CULTURAL THEME:

OUR HOME, OUR NATIVE LAND

Subtheme:

EARLY CONTACT

Stories:

Explorers

Scientists and Surveyors

The Fur Trade

Epidemics

Missionaries and Linguists

Possible Sites for Interpretation of Subtheme:

Fort McPherson, Arctic Red River, NWT border for early route by HBC and others,
Ogilvie River, Eagle Plains - Old Crow

CULTURAL THEME:

OUR HOME, OUR NATIVE LAND

Subtheme:

GOLD RUSH

Stories:

Gold Rush Routes

Gold Rush Personalities, Sites and Stories

Trading Posts

Market Hunting

North Fork Hydro Project

Possible Sites for Interpretation of Subtheme:

North Fork, Calico Town, Fort McPherson, Ogilvie/Peel for Wind City, Eagle Plains, Chapman Lake, Tombstone

TRAVEL THEME:

ROAD TO THE ARCTIC CIRCLE...AND BEYOND

Subtheme:

DEMPSTER HIGHWAY

Stories:

"Road to Resources"

Oil and Gas Exploration & Cat Trains

Route Selection

Highway Construction

Movie Set - Never Cry Wolf

Possible Sites for Interpretation of Subtheme:

Highway Entrance, Cat Train remnants, seismic line views, barrels, Eagle Plains Hotel

CULTURAL THEME:

OUR HOME, OUR NATIVE LAND

Subtheme:

MOUNTIES, BORDERS AND BOUNDARIES

Stories:

Native Sovereignty

Government

The Lost Patrol

The settlement of Old Crow

Bishop Stringer and his Boots

The Mad Trapper

Early Aviation

Possible Sites for Interpretation of Subtheme:

Highway Entrance, North Fork, Blackstone Uplands, Fort McPherson, NWT border,
Eagle Plains for Mad Trapper and Lost Patrol

TRAVEL THEME:

ROAD TO THE ARCTIC CIRCLE . . AND BEYOND

Subtheme:

ARCTIC CIRCLE

Stories:

Significance

TRAVEL THEME:

ROAD TO THE ARCTIC CIRCLE...AND BEYOND

Subtheme:

MACKENZIE RIVER SYSTEM

Stories:

Description and evolution

Lifeblood of the Dene

Euro-Canadian Entry Route

Berger Inquiry - Mackenzie Valley Pipeline

Possible Sites for Interpretation of Subtheme:

Viewing Platform - Peel River Crossing, Fort McPherson, Arctic Red River

Subtheme:

INUVIK...AND BEYOND

Stories:

Inuvik - history, present, and recreational opportunities

Other Western Arctic Attractions

Possible Sites for Interpretation of Subtheme:

Inuvik, NWT border

4.3 SUMMARY OF INTERPRETIVE OPTIONS

Historically, a wide variety of techniques have been employed to achieve the goals of interpretation: the revealing of information, meanings and relationships through first-hand experience. Section 4.3 is a summary of commonly used interpretive options together with a discussion, in general terms, of each option's advantages and disadvantages and - where applicable, an order of magnitude estimate of costs associated with each.

No single option ever achieves all of the objectives for interpretation. As a consequence, combinations of techniques are normally employed. Certain options lend themselves to presenting information to large groups of people at one time, for example, the interpreted event or a visitor center. Other options are cost-effective for the interpretation of single features to small audiences, for example, signs or displays. Options such as trails are multi-purpose providing a recreational experience as well as interpretation. Mass media options such as books or videos are well-suited for interpretation which is not first-hand (i.e. not in the presence of the feature being interpreted). Mass media can also be an excellent tool for flexible first-hand interpretation. For example, at present, any visitor might consult one of the books on the area at any time before, during or after their visit. When it occurs while they are at the site, it is first-hand interpretation.

In developing the Interpretive Strategy for the Dempster Highway Corridor, we have assessed the applicability of all of these options for interpretation as well as other techniques which we felt might be appropriate. The Dempster Highway is travelled by visitors with definable characteristics, while the highway environment and remote location present a variety of constraints to development. The discussion of interpretive options is broad in scope, but it should be borne in mind that not all options are equally suitable for the Dempster Highway setting or audience.

This summary is partly provided for the benefit of readers who are unfamiliar with interpretive options and who desire a "quick course" in the advantages and disadvantages each offers. The summary also discusses the relative merits of each option for the Dempster Highway setting and the characteristics of visitors and their travel patterns.

4.3.1 Personal Interpretation

The original form of interpretation probably offers the highest potential for achieving objectives. Personal interpretation offers three incomparable advantages over other techniques: the personal touch (we like talking to other people); flexibility (an interpreter can easily modify their communications in response to changing information, audiences, and circumstances), and mobility (an interpreter can go to the audience if it is not convenient for the audience to come to them). Any number of specific techniques are available to an interpreter, such as guided walks, campfire presentations, mobile roadside displays or slide shows.

The disadvantages of personal interpretation are those associated with any staffing situation. Knowledgeable people with good communication skills must be found, trained, supervised, and supported. In practical terms, it is often easier for an agency to obtain capital funds than staff funds.

Personal interpretation is particularly appropriate to the Dempster Highway due to the remote location. Many tourists may be intimidated by the lack of services or visible government staff. An interpreter would be a welcome site and likely to attract attention.

The VES (1987) and the Dempster Highway Interpretive Centre reports showed clearly that personal contact is highly regarded by visitors to the Yukon (McEwen and Staniforth 1986, McEwen and Majiski 1987, PRP 1988). An interpreter in the Dempster Highway setting would serve both an educational and promotional role by revealing the stories behind the unusual landscape and reassuring visitors of what lies ahead.

Personal Interpretation occurs in several common forms:

Agency Staff

Interpreters are directly employed by an agency or organization to provide interpretation. In some circumstances - unlikely to be applicable to the Dempster situation - interpreters are volunteers supported by a small paid staff.

Contract Interpretation

Interpreters are contracted by an agency or organization either individually or as a company to provide interpretive services. This system is sometimes employed as a method of circumventing direct staffing restrictions. Other times, interpretive services are contracted out because of circumstance which preclude direct staffing as a practical option (e.g. short-term projects, highly-specialized interpretation).

Commercial Interpretation

True commercial interpretation - that is, a direct charge for interpretation only - is very rare. What is common, however, and growing quickly, is interpretation as an adjunct to other recreation-oriented activities. Common examples are the information provided by guides on bus tours, nature tours, river rafting or canoeing trips, fishing, or hunting guides. Note that these essentially commercial operations will often make use of interpretive facilities or services offered by the government. This option could have considerable application to the Dempster Highway where local residents may wish to actively participate in the provision of services for visitors.

4.3.2 Signs

Interpretive signs are widely used to present information at sites or locations where it is impractical or too expensive to maintain staff. Signs are particularly appropriate to the Dempster since many visitors are pushing north or south with limited time to participate in events. Signs meet the needs of the audience group who wish to learn, but in a brief non-structured stop.

Interpretive signs work 24 hours a day and represent a cost-effective interpretive option. Well-designed and sensitively-located signs do get read and the information is retained.

Problems associated with signs include:

- limitations on information - e.g. only concise, well-presented information will be retained by the visitor;
- cost - signs which can remain outside through climatic extremes and still retain their attractiveness are not cheap;

- vandalism/message changes - either of these circumstances will usually result in a significant percentage of signs requiring replacement on a semi-annual basis.

Based on our experience, the highest quality signs, combining physical attractiveness and durability are made from porcelain enamel. These can range in price from \$ 1,500 to tens of thousands of dollars. Laminated cibachromes, silkscreened signs, and wooden signs are all less expensive but are also either less-durable, less attractive, or both. Metal signs are as, or more, durable than porcelain enamel but are less attractive. The presently used sand-blasted signs are a further option. They are expensive, but are locally made and attractive.

4.3.3 Self-guiding Trails

Self-guiding trails meet the need for interpretation without the cost of personal interpreters. The most common form of trail is the short loop variety which is designed for completion by a visitor in anywhere from 10 to 30 minutes. Interpretation follows two common formats: interpretive signs located at designated stops; or an interpretive brochure which the visitor brings along and consults at each numbered signpost.

Self-guiding trails achieve a number of important objectives: they let the visitor experience the landscape outside of their vehicle; they are very successful at answering commonly asked questions in an interpretive manner (e.g. "what is that little yellow flower?" is answered first-hand with a sign beside a flower), they provide an opportunity for visitors to "safely" explore the area with no fear of getting lost or encountering difficult circumstances (e.g. can be made suitable for the elderly or handicapped); and, they provide a pleasant recreational activity all on their own.

Problems associated with self-guiding trails are either cost or maintenance related. Trail construction can be expensive. If signs are used rather than a brochure, then sign costs become an important factor. If a brochure is used, then ample supplies must be readily available in a weather and vandal resistant container.

Self-guiding trails have applicability to the Dempster where terrain often precludes hiking for all but the most fit. The audience profile clearly established the need for short walking or hiking experiences. Even though only 10-15% of visitors mention hiking as an activity, the literature review suggests that many more would participate if opportunities were readily available.

Some of the need for people to "stretch their legs" may be met by short trails adjacent to existing campgrounds. Bus tours stop at Engineer Creek, for example, and there is a need for a 10-15 minute walk during the preparation of lunch. Here is an opportunity to match market demands with interpretation.

Longer hiking trails in the Dempster Highway area are a separate issue. The environmental impacts, cost and maintenance of longer hiking trails must be measured against the amount of projected use. Such trails would provide interpretive opportunities for guided and unguided hikers but would not serve the average highway traveller. The relative benefits of providing trails versus providing information on hiking opportunities and routes through unmarked terrain is a management decision beyond the scope of this interpretive strategy.

The cost of self-guiding trails ranges from moderate where suitable well drained sites are located to very expensive if boardwalks or corduroy surfaces are required to cross sensitive terrain. Costs could vary from \$10,000 to \$35,000 per site.

4.3.4 Interpretive Centres

Interpretive centres are also called visitor centres, nature houses, or information centres. Another traditional option, interpretive centres are located within virtually every National Park in Canada and the U.S., as well as the larger provincial and state parks.

The advantages of centres are that they can provide a wide variety of information. Very importantly, they also provide a focus and source of information for visitors - a real need for travellers. Well-marked, attractive interpretive centres will be visited by virtually all first-time travellers to an area...and there will be many repeat visits. They also provide an opportunity for the consumer in many of us. This is important. Most visitors will want a souvenir of their trip and as a result, most centres do provide a sales area. In park situations, the funds raised are often channeled through a cooperating association back into interpretation.

The disadvantages of centres are the high cost and the long term commitment which they represent. They require design and construction funding, staffing funds, display design and construction funding, and maintenance. Another problem is that, once open, they are difficult to close. A "Closed" or boarded-up visitor facility negatively affects public attitudes. We would further note that centres have the highest success and "survival" rate when their interpretive function is combined with other roles (e.g. tourism information, administration, etc.)

Along the Dempster there are a number of locations where centres might be a practical option, although staffing could be difficult. The existing Tombstone Interpretive Centre is an example of a low-cost facility (e.g. less than \$ 50,000 per year to maintain and operate), but it will be inadequate to meet increasing tourism traffic.

The audience profile indicates that many people travel as far north as Tombstone Mountain or Engineer Creek. The market analysis further suggests that there may be potential for day tours from Dawson to Tombstone or on to the Chapman Lake area. A small visitor centre, such as an improved version of the existing building, could meet the needs of a particular audience group by providing a destination where many interpretive functions would be met in a short time. Visitors to the Yukon mention that they expect to see tundra. An interpretive destination in the Tombstone Mountain area could also help draw visitors north to experience this landscape.

Costs would range from as low as \$ 50,000 for a simple low-maintenance cabin with simple displays and few staff up to several hundreds of thousands of dollars.

4.3.5 Viewing Platforms and Towers

Viewing platforms and towers are an interpretive option commonly used at prominent features or viewpoints. Facilities range from 20 metre high towers to 1 metre high platforms. These are very commonly coupled with interpretive signs and/or staff to provide an interpretive station or module.

Viewing platforms focus visitor attentions on a specific theme or themes. They are very useful when terrain or vegetation prevents or discourages visitors from enjoying a view. They can easily be made suitable for the elderly or handicapped and, in addition, serve the management role of controlling (by positive action) the movements of visitors. For example, a viewing platform could provide visitors with an impressive and satisfying view of an important feature which is too vulnerable to permit direct access.

Viewing platforms are one way to allow for some interaction between less adventurous tourists and the environment. The majority of Dempster Highway visitors are not prepared to walk far, but a short path to a viewing platform or tower could substitute for the hiking experience and fulfill an interpretive role. Platforms are also a way to control visitor impacts on sensitive sites.

Disadvantages include cost and maintenance of the structure itself as well as the signs which accompanies it. Covered structures, however, will increase the life of the signs. There are many cost variables but a minimum of \$ 20,000 would be required including a few signs.

4.3.6 Mass Media

Much effective interpretation takes place via the mass media of radio or television, or by means of widely-distributed materials such as brochures, books, videos, cassettes, and posters. While some of this material qualifies as first-hand (e.g. trail brochure or audio tape) interpretation, most is intended as pre-visit information or as post-visit souvenirs, or both. An overview of the advantages and disadvantages of the various forms of mass media is given below.

The general benefit of all these materials is the size of audience reached and the flexibility provided. There is no need for the text to be limited to approximately 100 words like a sign; visitors don't have to be somewhere at a certain time as in the case of an interpretive program - they can learn about the Dempster in their own home, and visitors can be shown sights (e.g. caribou, grizzly) that they are unlikely to see during a visit. Further advantages are that much of this material can be sold to provide economic benefits and much of this material can serve several roles (i.e. a video can be a souvenir item, a television public relations offering, an educational tool, and a promotional display at travel shows).

There are two general disadvantages. The first is that all of these can be expensive to produce, market and distribute. The second disadvantage is that interpreters are not the only ones that realize the advantages. Many agencies and businesses develop similar material so the competition for attention is stiff.

Along the Dempster there is potential for a variety of mass media techniques which would have considerable application to marketing the Highway as well. For example, a souvenir video of 30 minutes duration could be edited down to a 5 minute promotional piece.

Costs would vary based upon media, length, and quality of production. It is difficult to conceive of any media of any sort being produced for less than \$ 10,000. Videos generally cost out at between \$ 1,500 and \$ 3,000 per minute; cassettes are about one-third of this. It is important to note that production is only one aspect of costs - distribution can be expensive as well, particularly with regard to manpower.

Printed media can be used to combine information on travel or camping etiquette, as well as fulfill the needs of specific target audience groups. For example, birders, wildflower enthusiasts, or school groups could be well served by relatively low cost information in the form of brochures or booklets that are designed for their specific needs and skill level.

Information on bears, appropriate wildlife viewing habits, camping etiquette, or any other aspect of travel pertinent to the Dempster Highway may be produced separately or combined with introductory interpretive messages. Such material could be available in Whitehorse, Dawson City, Dempster Corner and Inuvik.

Easy to read interpretive maps can reach a wide audience and would be appropriate in the Dempster Highway context since the audience profile suggest a well educated visitor.

The cost of such materials ranges from \$2,000 for simple 2 colour brochures to \$10,000 - \$15,000 for multi-colour booklets or maps.

4.3.7 Low-cost Media

It is important to note that interpretation can often reach a wide audience by means of low cost cooperative efforts with media at the local, territorial, or national level. Interpretation can often provide the sort of public interest story that is sought by television, radio, magazine and newspapers. Contacting these organizations with a story often results in exposure to large audiences with the organization undertaking the production. An example from personal experience, in 1988, in the southern interior of B.C., our interpreters were interviewed 139 times on area radio stations, were featured in newspaper articles on 41 occasions, appeared in the news broadcasts for the Kamloops and Kelowna television stations on 3 occasions, and were interviewed on national radio and television four times (Almanac, Midday, Fifth Estate, and the Journal).

The implementation of low-cost promotions requires individuals skilled in identifying newsworthy activities or features within the program. For example, there is already an informal "Summer Solstice Party" at the Arctic Circle with the participants largely being staff and visitors to the Eagle Plains Hotel. This is a unique special event which has a real human interest angle. If the major media were notified then coverage would very likely be forthcoming. When an interviewed participant from the agency speaks of Beringia or the caribou, the event becomes interpretive; when they speak of visiting Fort McPherson or canoeing the Peel, the event becomes promotional.

Low cost media productions can also be used to reach specific audience groups on the highway. The audience profile indicates several different small segments such as birders, nature tours or canoeists. These groups could be drawn to special interpretive programs with media advertising.

TABLE 5. SUMMARY OF INTERPRETIVE OPTIONS

Method	Effectiveness	Pros	Cons
Personal Interpretation	high	personal touch easily modifiable mobile	requires trained staff can be expensive timetables may not suit all visitors
Signs	low-medium	24 hours a day cost-effective	limited information static presentation vandalism not easily modified
Self-guiding Trails	medium	interp/recreation suits variety of timetables brochure provides additional info	construction and maintenance sign costs
Viewing Platforms	low-medium	24 hours a day cost-effective	limited information static presentation vandalism not easily modified
Visitor Centres	high	all weather variety of info	high cost staff required
Mass Media	variable	size of audience reached	no direct contact
Low Cost Media	low-medium	size of audience reached	no direct contact, but radio has personal touch

4.4 IMPLEMENTATION CONSIDERATIONS

The implementation of the Dempster Highway Interpretive Strategy was developed following consideration of a number of factors:

- the wilderness character and sensitive environment;
- the characteristics and travel patterns of the audience;
- existing land use, land claims, commercial operations;
- existing agency, band, community and private interests;
- capital and operating costs;
- services and safety.

These factors are summarized in this section to place the proposed interpretive strategy in the context of existing development constraints. The section compares potential concerns with possible actions. The proposed interpretive strategy presented in Section 4.5 reflects these concerns and possible actions.

4.4.1 Implementation Methods

Implementation of the interpretive strategy will involve a number of agencies and parties. It is crucial that the concerns, mandates, and resources of these parties be addressed and evaluated and that the implementation be by consensus.

Implementation Concerns

- An overlap of responsibilities and priorities amongst the Department of Indian and Northern Affairs, and the Departments of Renewable Resources, Community and Transportation Services and Tourism as well as agencies in the NWT may complicate implementation.
- Land claims on specific sites will have a direct bearing on implementation.
- Individual band initiatives could conflict with strategy recommendations.
- Some elements of the strategy could be implemented by agencies, native bands, or by commercial businesses.

Possible Action

- Establish a committee of all concerned parties (commercial operators, government, native organizations, and agencies) to establish priorities and responsibilities, and to eliminate conflicts. (See section 4.4.5 Comments from Native Organizations).
- Tourism related economic development opportunities and benefits should be considered, especially as they relate to native band involvement.

4.4.2 Information and Marketing

A comprehensive approach to implementation of a Dempster Highway Interpretive Strategy would include plans for tourist information and marketing. The VES (1987) and interviews with interest groups pointed to several concerns.

Information Concerns

- There is insufficient information on the Dempster Highway available in general Yukon tourism brochures and other printed materials.
- Printed information sometimes takes too long to reach tourists.
- The several sources of Dempster Highway information in Dawson can be confusing and inefficient.
- There is insufficient information available in Whitehorse and Watson Lake, both to attract tourists who have not planned to drive the Dempster Highway, and to confirm the plans of those already committed.
- There is insufficient highway information available at the Dempster Corner.
- There is virtually no information available on appropriate environmental etiquette for Dempster travellers.

Marketing Concerns

- Marketing efforts could change the number of travellers on the Dempster Highway, this could result in impacts on the environment or existing facilities such as the roadbed or campgrounds.
- The NWT is promoting the Dempster Highway as a route to the Western Arctic, the effects of this marketing on resources in the Yukon are unknown.
- Marketing could change the expectations of visitors if the information is portrayed in a particular way; accurate images and information are effective management tools.
- Increased use could decrease the satisfaction of those seeking a wilderness experience

Possible Action

- Develop a co-ordinated information program for the Dempster that includes mail-outs for travel planning, programs and information at visitor reception centres in the Yukon, up to date centrally located information at Dawson, and the proposed orientation signs at Dempster Corner. Link the information program to the interpretive strategy.
- Include information on camping, fishing, wildlife viewing and other environmental etiquette in printed and other media for the Dempster. Show how visitor behaviour can help manage the areas special qualities.

- Link information and marketing plans to facilities infrastructure and maintenance capabilities.
- Adopt a passive marketing approach where information is available to those who seek it, or adopt a phased in marketing plan to allowing monitoring of increased tourist use.

4.4.3 Environmental Constraints

The interpretive strategy will be implemented within the context of overall highway corridor management. Since the interpretive work precedes a formal management plan, potential land use issues are not yet resolved. These broader issues, such as wilderness protection or wildlife harvesting will not be discussed in this report except as they may relate to tourist use of the corridor, and in particular, the interpretive strategy. Crombie (1982) discusses environmental impacts in considerable detail.

Environmental impacts may be those caused by tourists, such as trampling of vegetation, or they may be impacts on the tourists' appreciation of the landscape, such as overcrowding or changes to the wild character of the highway. Both perspectives are important.

The proposed interpretive facilities and techniques, in themselves, will have negligible environmental impacts provided that design guidelines are acknowledged, and that adequate information on environmental etiquette is provided to tourists. A full environmental impact assessment of major interpretive sites would help ensure that the strategy is implemented appropriately.

Significant environmental concerns could arise if the Dempster Highway is marketed, resulting in increased tourist use and greater demand for facilities, and if the management plan is inadequate to accommodate these changes.

Environmental constraints are divided into two categories: natural environment and land use.

A. Natural Environment

Wildlife

Wildlife viewing is the interpretive activity most likely to cause concern. Increased tourist use of the highway and the demand for wildlife viewing opportunities could result in inadvertent impacts on species and habitat. Detailed discussion is beyond the scope of this report; an outline of key points is provided.

Potential Concerns

- Wildlife-tourist conflicts may result from increased encounters with visitors. Bears or other large mammals may become habituated to garbage or roadside feeding, leading to reduced fear of humans. With increased highway traffic road mortality of wildlife may also increase.
- Wildlife behaviour may be distorted by artificial feeding.
- Wildlife viewing may stress vulnerable animals during critical periods such as nesting, licking or wintering.

- The type of viewing activity and tourist behaviour can affect animal response; this varies with species.
- Increased tourist use of fishing opportunities could deplete certain species such as grayling.
- Wildlife may be susceptible to stress from aircraft disturbance, for example from commercial sight-seeing excursions.
- Increased stress on animals can lead to reproductive failure or displacement to another habitat, in either case reducing the opportunity for tourists to view and interpret wildlife.
- Tourists suggest they are not seeing the wildlife they expected. The discrepancy between expectations, information, and the wildlife resource can become an environmental issue.
- As wildlife of corridor is hunted, increased tourist use may add an additional stress to wildlife.

Possible Action

- Conduct environmental impact assessments of proposed developments.
- Provide printed tourist information on wildlife viewing opportunities and instill appropriate environmental etiquette, emphasizing the potential benefits of good behaviour. Raise knowledge levels so visitors will support management techniques.
- Control access and stopping opportunities near sensitive habitat.
- Provide guided interpretation at sensitive sites.
- Control visitor movements with careful site design.
- Develop operation guidelines for aerial wildlife viewing and interpretation.
- Increase wildlife viewing opportunities, manage wildlife for viewing purposes where appropriate.
- Avoid trail developments where potential for wildlife conflicts is high or where seasonal use of habitat may be compromised by tourist use.
- Avoid promotion of off-highway use, while providing adequate information for those who seek off-highway experiences. Provide good interpretive experiences at roadside and in campgrounds.
- Consider specific hunting exclusion zones or special management areas where wildlife viewing is considered paramount.

Vegetation and Soils

Potential Concerns

- Concentrated tourist use at major interpretive stations could result in trampling of vegetation, loss of species diversity, soil compaction, and loss of plant cover. Low growing herbaceous plants are the most susceptible to trampling damage. This problem could be most evident at tundra sites such as Chapman Lake or the Arctic Circle, and would be compounded by permafrost conditions. Muddy, bare and unattractive sites could result if uncontrolled use increases.
- Heavily used interpretive trails in permafrost and/or tundra terrain may develop into deeply rutted and muddy swaths unless insulating gravel fill or raised boardwalks or corduroy surfaces are used. As ruts develop, users will make new parallel routes creating fingers of trails. Loss of vegetative cover will result. Soil erosion may result on slopes.

Possible Action

- Conduct environmental impact assessments of proposed developments.
- Select and design sites to avoid sensitive vegetation areas, and use appropriate techniques to harden walking surfaces where warranted.
- Control access to sensitive sites by limiting trails and other facilities. Develop information to aid tourist understanding of vegetation ecology.
- Avoid trail construction on slopes where permafrost or fine textured soil materials would likely result in erosion or slumping.

Water Quality

Potential Concerns

- Increased use and tourist facilities near water could result in reduced water quality and potential health concerns.

Possible Action

- Tourist facilities at major interpretive stations should be sited and designed for minimum environmental impact.
- Provide information on camping etiquette and human waste.

Visual Quality

Potential Concerns

- The quality of interpretive stations will form a lasting impression with tourists. If site layout and construction are hasty, the facility will appear temporary and the site will not be treated with respect.
- Road dust can ruin photographic opportunities and will discourage use of interpretive sites.

- Some man-made disturbances in the immediate vicinity of interpretive stations may detract from the interpretive experience, particularly if photographic opportunities are present. For example, a new pipeline or nearby transmission tower could affect the visual quality of some interpretive sites.
- Many visitors note the litter along the Dempster Highway; studies have shown that litter has a significant impact on visitors enjoyment of a natural landscape.
- Some recommended interpretive stations are located on open tundra. These sites are visually sensitive in that structures and parked vehicles will be seen from long distances. Poor design can detract from the landscape setting.

Possible Action

- Ensure new interpretive facilities and pull-offs are backed up with adequate maintenance to prevent litter accumulation.
- Take measures to reduce or prevent camping at interpretive sites and pull-offs; provide educational materials.
- Design interpretive sites and signs to blend in with the landscape setting; develop sites to acceptable standard; do a few well, avoid proliferation of mediocre sites.
- Provide dust-free zones at major interpretive sites.
- Control access and rehabilitate existing man-made eyesores.
- Provide Dempster litter bags with message on keeping the route clean.

B. Land Use

Land use can have an effect on the interpretive strategy in several ways. Incompatible land use adjacent to major interpretive stations will detract from the visitors appreciation of the site. Land uses which are not consistent with tourists expectations of the Dempster may also reduce satisfaction with the trip. Marketing and information programs depicting images not found on the highway may also affect visitor enjoyment.

The study area is under negotiation for land claims by the Indian Bands in the region. The land claims settlement may affect the location of some proposed interpretive sites and the type of program offered.

Possible Concerns

Wilderness means different things to different people. Changes to the character of the Dempster Highway will displace some tourists seeking a wilderness experience. Since most visitors will not actually enter the wild landscape it is the image or perception of wildness that is the main tourist concern. Visitors have a strong aesthetic appreciation for the wild landscapes of the Dempster, and this aspect is a key interpretive and marketing issue. If wilderness character is degraded, its appeal to tourists will diminish.

Harvesting activities such as hunting could, in some cases, detract from interpretive wildlife viewing opportunities. Wildlife subject to hunting may not be readily visible along the corridor, or direct conflicts may occur where wildlife observed is also wildlife hunted.

Conversely, tourist interpretive activities along the corridor could infringe on traditional harvesting such as hunting, trapping, or berry picking.

Developments such as transmission towers or pipelines could affect the quality of the Dempster travel experience if visual impacts are not adequately addressed during planning and construction. Incremental developments will reduce the wild character of the corridor, and may, if visible in key wildlife viewing or other interpretive sites, detract from the tourist experience.

New commercial services, such as lodges, in the corridor would benefit some visitors and detract from the experience of others. The location of interpretive stations could be affected by new commercial services.

Possible Action

- Co-ordinate interpretive strategy with Dempster Highway land use management plan; tailor marketing and information to accurately depict conditions on the route.
- Cooperate with Indian Bands during the interpretive planning process to ensure compatibility with the terms of future land claims settlements.
- Manage harvesting activities in conjunction with interpretive and outdoor recreation strategy to reduce potential conflicts.
- Conduct visual impact assessment of proposed developments such as transmission towers or pipelines. If possible adjust locations to reduce visual impacts in key interpretive or tourist rest stop locations.
- Manage land use in some key sections of the corridor to retain an undisturbed character. Institute special land use controls around interpretive stations or other tourist facilities and highway segments with high visual quality. Consider zoning where interpretive values are high.
- Interpret industrial or other development activities, turn potential negative visual experience into positive education.

4.4.4 Facilities and Maintenance Constraints

Potential Concerns

- With increased tourist use of the Dempster there will be a demand for more campground space as existing capacity will be exceeded; environmental and operating costs will increase. Campgrounds are presently 50-75% full, yet tourist use is projected to increase at 15-25% per year.
- With increased use there will be a demand for more toilet rest stops; operating costs will increase.
- New interpretive stops and pull-offs will inevitably be used for overnight vehicle parking; litter and human waste problems will accumulate unless preventative measures are taken. Quality of interpretive sites will decline unless managed appropriately.

- Short trail loops, or wooden viewing structures at interpretive sites and campgrounds will require maintenance on an annual or bi-annual basis.
- Interpretive signs will require periodic replacement.
- As tourist use of highway increases, higher traffic volumes may result in increased road maintenance requirements; with increased traffic, demand for more dust free zones or passing lanes will be expressed.
- With increased tourist use there may be more demand for longer hiking trails of half-day or day long duration.

Possible Action

- Implement capital projects in conjunction with operations and maintenance budgets; ensure adequate maintenance support for interpretive and related facilities.
- Co-ordinate tourism marketing of interpretive and recreation opportunities on the highway route with a facilities, maintenance and environmental management plan.

The possible concerns and actions described above were considered in the context of the Dempster Highway Interpretive Strategy. Many of the possible actions relating directly to interpretive sites or activities appear again in the next section.

4.4.5 Comments from Native Organizations

While recognizing that each band has its individual concerns and interests with regard to tourism in the Dempster Highway Corridor, many concerns are commonly shared. Specific comments expressed by each band organization are detailed in Appendix 5.6. General comments are presented below.

- Traditional and cultural values of aboriginal peoples should be reflected.
- Native organizations desire to be an integral part of future planning projects related to the Dempster Highway.
- There is strong interest in renewable resource based economic development, specifically in tourism.
- Tourism on the highway compliments encouragement of side trips and the consequent benefits to indigenous people.
- Wildlife management must be addressed, with specific concern for the Porcupine Caribou herd and the effect of increased human activity along the highway.
- Some native organizations have a strong interest in participation in interpretation along the highway - interest to be part of a collective effort, but also individual and locally controlled effort.

Comments from Native Organizations cont'd.

- Traditional place names should be used in the Corridor.
- Traditional lands need to be acknowledged.
- Wildlife harvest in the region must also be continued.

4.5 THE PROPOSED INTERPRETIVE STRATEGY Recommended Activities and Sites

4.5.1 Introduction:

This section outlines the recommended activities and sites that comprise the proposed interpretive strategy for the Dempster Highway Corridor. The strategy evolved over the course of reviewing the natural, cultural, and historical features of the highway - both by themselves and as components of themes, subthemes and stories - then combining the assessment of the audience with the appropriate techniques for interpreting these on the Dempster Highway.

In the course of this assessment, the following guidelines for the strategy were considered:

- the Strategy must provide for high quality interpretation of the themes and subthemes;
- the Strategy must be tailored for the audience, both present and future;
- the Strategy must provide adequate information to direct implementation and site specific planning;
- the Strategy must be a practical tool for planners and managers (i.e. employ cost-effective techniques);
- the Strategy must be appropriate for the Dempster Highway setting and acknowledge environmental, social or economic constraints related to interpretive developments.

The strategy is broad in scope, incorporating virtually all of the commonly employed interpretive techniques and including suggestions for the development of innovative techniques. In general terms, the communication of large amounts of information takes place via personal interpretation, mass media, or at major highway sites. Interpretation of smaller units of information takes place at secondary sites or pull-offs along the road. Smaller units of information may also be passed on with printed material targeted for specific audience groups.

While interpretation of the native cultural history is a component of some specific elements of the strategy, the majority of this interpretation is most appropriately done by the native people themselves. Some of the activity recommendations provide suggestions on ways in which this might be accomplished with the assumption that interested parties will decide for themselves the suitability of any implementation method. For similar reasons, only

general recommendations are made for interpretation in NWT. (Refer to Hill 1988, for information on the NWT Interpretive Plan for the Dempster Highway)

It is important to note that interpretative sites, techniques, and activities function best when they support each other. For example: written material should promote personal interpretation; interpreters should promote visits to sites and other activities. Similarly, other activities which take place in the area, such as canoe trips, or backcountry travel, would create the least management difficulties if coordinated with other activities taking place. It is sufficient to note that consideration should be given to identifying a mechanism for coordinating these varied activities.

The selected options are presented in the following sequence.

Activities:

Activities are identified by location and estimated cost, and a range of opportunities is presented.

Mass Media:

Several recommendations are made for the development of mass media. Themes, formats and objectives are identified as well as distribution mechanisms and, where possible, costs are estimated.

Other Options:

Certain activities and opportunities are not easily categorized but form an integral part of the interpretive strategy. These are documented in this section.

Sites:

The recommended sites were identified after assessing a large number of potential locations. Proposed sites for interpretation, being sites where interpretive themes or subthemes are present, are mapped as part of the interpretive resource analysis with specific criteria and rationale included for each site.

In each case, a rationale for the activity or site selection is included along with recommended options, objectives, a listing of themes and subthemes to be interpreted, details, constraints, and an order of magnitude cost estimate. Where applicable, specific locations are also provided.

4.5.2 Activities

Many of the interpretive options discussed in Section 4.3 are directly attributable to the characteristics and travel patterns of the Dempster Highway audience and have been included in the proposed Strategy. These options are discussed in Section 4.3 as well as Section 4.5.

4.5.2.1 Personal Interpretation

The flexibility and mobility of personal interpretation is particularly suited to the Dempster Highway where significant changes occur from year to year and from season to season. There are additional reasons for strongly recommending personal interpretation on the Dempster. Firstly, the traveller will likely be glad of a personal encounter with an interpreter to allay any concerns of being "alone in the wilderness". Additionally, interpreters can satisfy the informational needs of travellers better than impersonal media. These needs are considerable based on the demographics of current travellers. Interpreters can play a management role as well both by means of impressing on visitors

the uniqueness and beauty of the region, and, by their very presence which will tend to discourage vandalism.

4.5.2.2 Agency Interpretation

We recommend that agency interpreters continue to provide programming along the Dempster Highway, and in particular, in the southern portion of the road. This recommendation is based on the proposal to establish the Tombstone Mountain area as a day trip destination.

We recommend that two interpreters be based at Tombstone campground both to staff the visitor centre seven days a week and to provide interpretive programming.

We recommend that another interpreter be based in the Blackstone Uplands area to provide roving interpretive services at this site as well as at the Gyrfalcon Eyrie, the Sheep Lick, and - on an occasional basis - at the Engineer Creek campground. It might be possible for this interpreter to be based out of the outfitter's cabins.

A fourth interpreter should be based out of Eagle Plains to provide roving interpretation at the Eagle Plains Viewpoint and the Arctic Circle, as well as occasional programming at the Hotel, at Engineer Creek campground, and possibly at the Rock River campground.

We would suggest that one of these interpreters be identified as senior and responsible for supervision, co-ordination, and promotion. Interpreters could rotate through these bases every two weeks. We further recommend that Gwich'in be actively involved in this programming either as agency interpreters or as guest interpreters.

A mobile interpretive van, possibly with small live or stuffed animal displays, wildflower identification pictures, or any other suitable aid can be an effective way to enhance personal interpretation services. A mobile roadside display with a naturalist explaining the materials shown is a communication tool catering to the segment of the travelling public who would like to stop for 10 or 15 minutes, but do not wish to participate in a more lengthy interpretive talk or walk.

This method is particularly suited to the Dempster Highway, and could be combined with the personal interpretation methods described above.

Constraints:

Finding qualified staff and suitable accommodation

Cost Estimate:

4 staff	- \$ 70 - 80,000
Transportation and accommodation	- as required

4.5.2.3 Commercial Interpretation:

Commercial interpretation already exists on the highway as an adjunct to other activities (i.e. nature tours, bus tours, Eagle Plains Hotel). We recommend that these operators be encouraged to make additional use of the interpretation being proposed. Some options include:

- interpretive programs at sites along the highway;
- interpretive programs at a designated centre (e.g. Fort McPherson);

- interpretation as an adjunct to:
 - fishing trips
 - hunting trips
 - visits to fish camps
 - river trips (e.g. canoe, powerboat, etc.)
 - crafts
 - services (e.g. as done at Eagle Plains Hotel)
 - interpretation as part of special events (e.g. festivals)

4.5.2.4 Mass Media

Mass media offers the chance to reach very large audiences some of whom have never, and will never, travel the Dempster Highway. Given the "newness" of the highway, there is already a surprising amount of written material available. Our recommendations are for materials which provide different or additional information from that which already exists. It is important to note that any of these materials could be developed by an agency alone, by a business alone, or by a joint venture between business and government.

Strip Map

No existing material effectively combines interpretation with highway information in a convenient format. The strip map format is widely used for this purpose by automobile associations and has proven to be effective. The format also makes changes relatively inexpensive as a component of additional printings (i.e. a page is changed before binding).

Format:

Vertical, approx. 4.5 " wide by 8" high spiral binding along top edge so map can be laid open, approximately 20 leaves, printed both sides, some colour.

Objectives:

- To introduce all of the themes and subthemes
- To provide information on services and site locations
- To serve as a quality souvenir of the Dempster

Themes and Subthemes:

All

Details:

Each page should include - as a sidebar - a map of the road with kilometer posts and site locations marked on. The rest of the page includes interpretation and illustrations relevant to the portion of highway included in the sidebar. Either the front or back inside cover should list emergency numbers, services, and procedures.

Cost estimate:

Highly variable dependent upon use of colour and size of printing. Could vary easily from \$ 2.00 to \$ 7.00 per book.

Retail Cost:

Recommend that cost be kept below \$ 12.00 and ideally below \$ 10.00.

Distribution:

Made available for sale throughout the Yukon and, where possible, elsewhere e.g. Alaska, B.C., etc.

Should be available at a reduced cost to travel agents, tour groups, outfitters, etc. for use in promotion.

NOTE:

The Strip Map and Auto Tape lend themselves to a combined product where the information in each supports the other. Both, however, are also strong enough to stand alone.

Audio Tape

Many travellers will have a cassette machine in their vehicle. Audio tapes provide a pleasant diversion while driving and tapes other than music (e.g. book tapes, instructional tapes) have become popular items. An audio tape is well-suited to the Dempster Highway with its long driving time.

Format:

Length: 90 minutes cassette

Objectives:

To introduce the viewer to interpretive themes of the Dempster Highway.

To encourage viewers to visit the area, or if purchased as souvenir, to encourage repeat visitation.

Themes and Subthemes:

All

Details:

In addition to narration, music and effects, tape should include native songs and story-telling, nature sounds, and could include dramatizations from history.

Cost Estimate:

Production - \$ 30,000
(90 minute)

Retail Cost:

Should be less than \$ 20.00

Distribution:

Made available for sale throughout the Yukon and, where possible, elsewhere e.g. Alaska, B.C., etc.

Should be available at a reduced cost to travel agents, tour groups, outfitters, etc. for use in promotion.

Video: "Road to the Arctic Circle...and Beyond"

Videos are rapidly gaining popularity as souvenir items. They provide the opportunity for visitors to experience visually what is very unlikely to be seen on a single trip (e.g. the caribou herd). Videos also can serve many purposes. For example, the same footage used to produce an interpretive presentation can be re-edited into a 3 minute promotional package.

Format:

Length: 30 minutes / 1" master / VHS copies

Objectives:

To introduce the viewer to interpretive themes of the Dempster Highway
To encourage viewers to visit the area, or if purchased as a souvenir, to encourage repeat visitation.

Themes and Subthemes:

All

Cost Estimate:

Production - \$ 45 - 60,000
(30 minute + 3 minute short
subject)

Retail Cost:

Should be less than \$ 30.00

Distribution:

Made available for sale throughout the Yukon and, where possible, elsewhere e.g. Alaska, B.C., etc.

Should be available at a reduced cost to travel agents, tour groups, outfitters, etc. for use in promotion.

Should be made available at low cost to Yukon schools and community groups for use in programming.

Should be offered to commercial and cable television for use in programming.

Brochures and booklets:

Printed materials should be used to combine information on travel or camping etiquette, and/or fulfill the needs of specific target audience groups. For example, birders, wildflower enthusiasts, or school groups could be well served by relatively low cost information in the form of brochures or booklets that are designed for their specific needs and skill level. The audience profile suggests that there are well educated and highly motivated visitors travelling the highway. The needs of this market segment should be met with such specialized printed materials.

Information on bears, appropriate wildlife viewing habits, camping etiquette, or any other aspect of travel pertinent to the Dempster Highway should be produced separately or combined with introductory interpretive messages. The cost of such materials ranges from

\$2,000 for simple 2 colour brochures to \$10,000 - \$15,000 for multi-colour booklets or maps. Such material should be available at no charge in Whitehorse, Dawson City, Dempster Corner, Inuvik, Eagle Plains and government campgrounds..

4.5.2.5 Other Options

Some other considerations affect the interpretive strategy for the Dempster Highway. These are discussed here in general terms.

Promotion:

The presence of interpretation will encourage visitors to make the trip. Information centres at Dawson City, Whitehorse, Watson Lake and Inuvik should be aware of these services and this information should be passed on to visitors. Similarly, any mass media materials should be on display at these centres and should be available for purchase in the communities.

Special Events:

The location and uniqueness of the Dempster Highway area makes almost any event taking place newsworthy. Consideration should be given to formalizing a Summer Solstice event as a combination interpretive/promotional tool. In a similar vein, local communities might consider hosting an annual gathering such as has been implemented by native bands in the NWT and at various locations in British Columbia.

Interpretive Centres:

In the discussion of interpretive options, the pros and cons of centres were identified. In assessing these options for the Dempster Highway, we concluded that a large structure is not a priority for interpretation. The reasons for this recommendation are as follows:

- A large structure would not be cost-effective as a stand-alone feature on the highway at the present time or in the near future. We recognize the costs associated with major facilities and - given the quality and quantity of outstanding interpretive features spread along the route - we can not rationalize a concentration of costs in any single site such as a major structure would entail.
- While we recommend that the Tombstone Mountain area with its present centre be developed as a day-trip destination, we do not recommend that it become a major destination in itself. A principal objective of this site is to encourage visitors to continue on up the highway where many additional and important interpretive features and opportunities can be found. It is for this reason that we have recommended only an upgrade of the visitor centre at Tombstone Mountain.
- We further recognize that consideration is being given to the development of centres elsewhere. The role of these structures would only in part be interpretation. To identify a site for development of an interpretive centre might well lead to unnecessary conflict or competition for visitors. Interpretation could be incorporated into almost any facility along the highway, as it is presently done at the Eagle Plains Hotel. Should a centre be constructed or developed, we would suggest that the most appropriate locations - from an interpretive perspective - would be: i) Blackstone Uplands, ii) Fort McPherson, and iii) Rock River area.

Low Power Radio Transmissions

Low power radio transmissions should be considered if the appropriate communications systems are available, and any environmental impacts from the technology are mitigated. Interpretive and highway information can be effectively relayed by this means, and could also be used to inform travellers along the Dawson City travel pathways of the Dempster Highway opportunities.

Territorial Parks:

To achieve additional wildlife viewing opportunities and to reduce confusion in the minds of visitors, it might be advisable to identify land areas around interpretive sites as parks or reserves where hunting would not be practised during the tourist season. These protected areas need not be large to achieve interpretive objectives. From an interpretive perspective, the ideal park locations would be: 1) Tombstone Valley, 2) Blackstone Uplands area, 3) Arctic Circle.

If a park were to be established then personal interpretation activities would need to be adjusted to fit a park situation. Staff interpreters would develop their own park-related interpretive plan which would normally include targeting a variety of audiences from school children through to seniors, through a variety of techniques both on-site and off-site.

4.5.3 Off-Site and Community-based Interpretation

Dawson City, Whitehorse

Although not specifically identified as Dempster Highway interpretive sites, the Dawson City and Whitehorse Visitor Reception Centres should be linked with the Strategy to provide information, orientation, and suitable means of interpretation. The audience profile indicates that up to 20% of Dempster Highway travellers find out about the route either in Whitehorse or Dawson and that information is sought in these locations. The VES (1987) shows that the large majority of Yukon visitors stop at the visitor reception centres in Dawson and Whitehorse.

The sources of information in Dawson should be centralized where possible, with daily or weekly links to interpreters on the highway. Program information available in Dawson could translate into curious visitors taking a one day side trip to Tombstone Mountain Campground and Viewpoint or Blackstone Uplands.

Slide shows, video presentations, maps and brochures should be available at these locations. Of particular importance is the distribution of information on appropriate travel, camping or wildlife viewing etiquette. The major themes and subthemes of the Strategy could be appropriately introduced at these centres.

Fort McPherson

The options for interpretation at the Mackenzie Delta communities which are within the Dempster Highway Corridor are detailed briefly below. Several native bands are not within the Corridor but have strong traditional use and interest in the area. These include: Old Crow Band, Aklavik Band, Dawson Band and the Na Cho Nyakdun Band. Concerns and interests of these bands are outlined in Appendix 5.6 and have been presented generally in section 4.4.5 of this report. The following discussion is confined to

communities located on the Highway because every highway traveller en route to Inuvik or Dawson City will travel through or by these communities.

As the first Gwich'in community to be encountered by northbound travellers, Fort McPherson offers an excellent opportunity for interpretation. Many of the same services suggested for the Rock River site would be suitable for Fort McPherson based out of the nearby campground, out of the visitor centre, or out of the town itself. Some options are already being implemented by the Band and there are plans for further development of tourism related activities. It is most important that any initiatives be locally planned and controlled. Ideally, these initiatives would compliment interpretive activities being carried out in other areas along the Corridor.

Arctic Red River

The existing viewing structure south of the ferry crossing provides an excellent opportunity for interpretation of the Mackenzie River and the cultural history of the area. This could be done with signs or by means of displays and/or staff based at the structure. This lends the added advantage of separating the town from the interpretation - should this be desired by the community. In communications with the Arctic Red River Band Chief, it was acknowledged that the Band may prefer to concentrate on other interests at the present time without interference from increased tourism.

Campbell Hills Territorial Park

This park provides a suitable location for interpreting the Peel Plateau, both for its natural and cultural history.

Inuvik

Inuvik already provides comprehensive services for visitors. It is the gateway to numerous interpretive or adventure travel excursions to the Mackenzie Delta, North Yukon National Park, Herschel Island and other destinations in the Western Arctic..

Inuvik also serves as the starting point for many southbound Dempster Highway travellers. Information and an interpretive presentation should be available at the Inuvik Visitor Reception Centre. The information should be similar to that provided to northbound travellers in Whitehorse or Dawson City. Initiatives by native organizations in Inuvik could compliment interpretive activities elsewhere in the Corridor.

4.5.4 Interpretive Sites and Pull-offs - Outlines

In proposing roadside sites for interpretation, the following factors were considered :

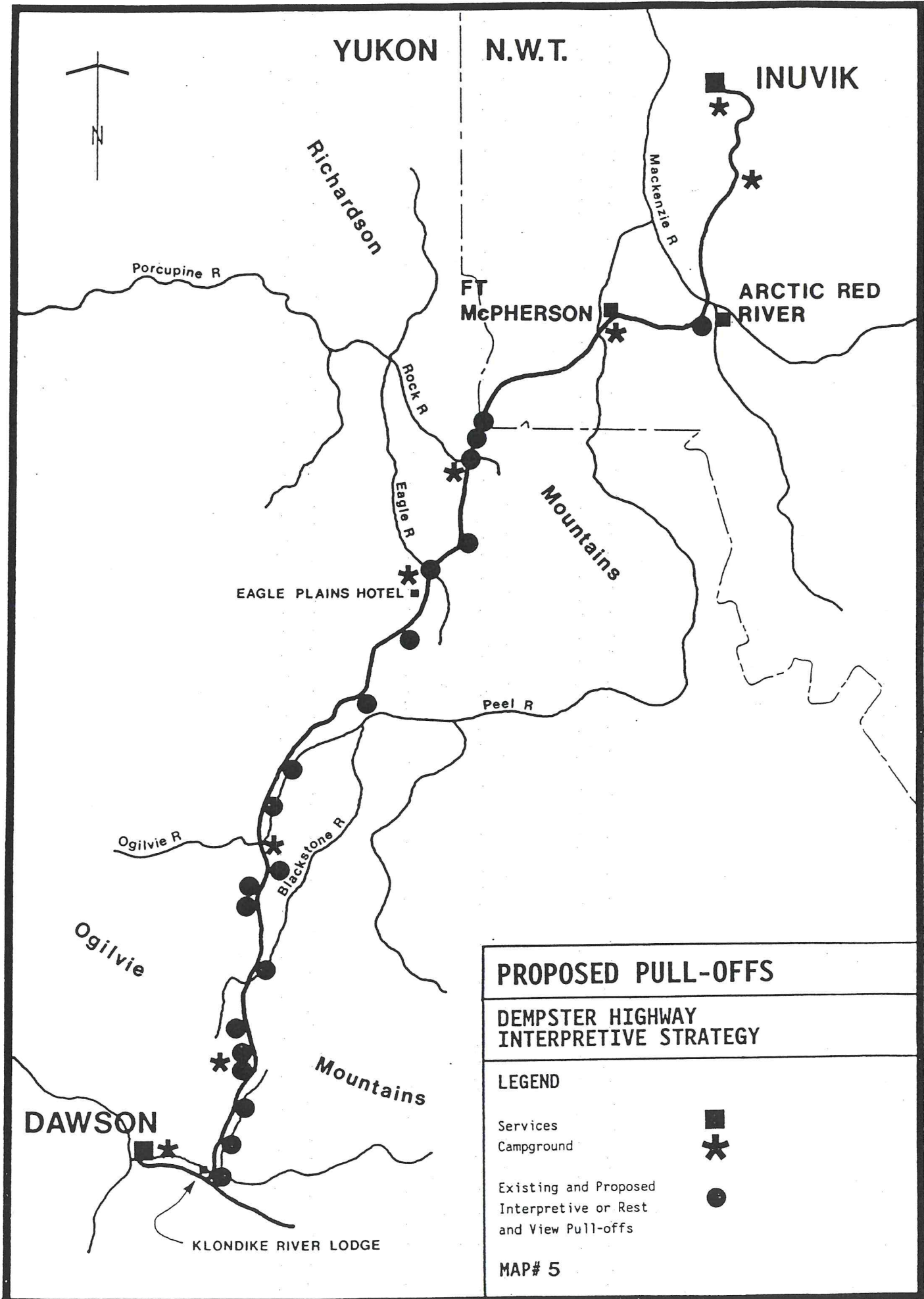
- the variety of themes which are well-represented at the site;
- the number of themes represented;
- the presence of some outstanding interpretive feature;
- the current use of the site (e.g. already a popular pull-off);
- the physical constraints on development;
- and the audience needs and market demand.

Sites have been categorized as MAJOR if a number of themes and subthemes are well-represented; SECONDARY if only a single subtheme or story is represented; PULL-OFF if this is the extent of development proposed or if the site is already used as such by visitors, and; CAMPGROUND if directly associated with an existing campground. (See schematic diagrams of possible approach to major and secondary sites).

In determining sites, we have also attempted to distribute them along the highway so that the visitor is not confronted with a barrage of signs and pull-offs. Not only is this impractical but it also tends to discourage a visitor from stopping after a short time. Instead, the intention is to make all the sites of high quality so that a visitor will always identify a pull-off as worthy of investigation. The result of this policy is, of course, that some potential features will not have pull-offs associated with them. All themes and subthemes, however, will be interpreted along the highway. Sites are discussed in sequence by location from south to north.

The proposed interpretive sites on the Dempster Highway are on the following pages.

NOTE: When reviewing sites, refer to the maps and tables of proposed sites and stories in the text (following) as well as detailed maps at the end of the report. See also general discussion of maintenance costs and constraints in Section 4.6.



PROPOSED PULL-OFFS

DEMPSTER HIGHWAY INTERPRETIVE STRATEGY

LEGEND

Services	■
Campground	*
Existing and Proposed Interpretive or Rest and View Pull-offs	●

MAP# 5

TABLE 6. PROPOSED INTERPRETIVE SITES

SITES	LOCATION	INTERPRETATION	FACILITIES
Major Sites			
Dempster Corner	KM. 0	Kiosk with signs Information focus	Parking
Tombstone Campground	KM. 71.4	Improved interpretive centre, trail	Building, parking, toilets
Tombstone Mountain	KM. 74.4	3-4 signs in viewing area, with railing	Improved access, parking
Chapman Lake	KM. 116	Viewing platform, signs roving interpreter	Parking, possible toilets and picnic area
Eagle Plains	KM. 272.6	Short trail to signs, roving interpreter	Improved parking, possibly toilet and picnic area
Eagle Plains Hotel	KM. 369.2	Possible personal interpretation.	Private or community initiatives
Arctic Circle	KM. 405.6	Improved sign	Design a "gateway"
Rock River	KM. 445.8	Possible signs, personal interpretation	Community or band initiative suggested
Border Crossing	KM. 465.0	2 interpretive panels facing south	Improved site.
Secondary Sites			
North Fork	Klondike River	Free-standing sign	Picnic area
Windy Pass	KM. 152	Free-standing sign	Improved parking
Gyrfalcon Eyrie	KM. 159	Free-standing sign, roving interpreter	Parking
Sheep Lick	KM. 185	Free-standing sign, possible viewing area	Parking, access trail
Beaverhouse Mtn.	KM. 222	Free-standing sign	Parking
Eagle River	KM. 377.8	2 Free-standing signs	Improved parking, picnic area

PROPOSED INTERPRETIVE SITES CONTINUED.....

SITES	LOCATION	INTERPRETATION	FACILITIES
Pull-offs			
Ogilvie View	KM. 23	Viewpoint only	Parking
Moose Lake	KM. 105	Viewpoint only	Parking
Elephant Rock	KM. 221.4	Viewpoint only, name sign	Parking
Ogilvie River	KM. 231 or KM. 238	Viewpoint only	Parking
Richardson Mt Viewpoint	possible site, not described in text, requires further site work to find best location on Eagle Plains		
Campground Trail Loops			
Tombstone Campground	KM. 71.4	Self-guiding trail	See major sites
Engineer Creek	KM. 193.4	Interpretive panels on kiosk, trail loop	-
Rock River	KM. 445.8	Possible self-guiding trail	See major sites

TABLE 7. PROPOSED INTERPRETIVE OPTIONS FOR STORYLINES

SUBTHEMES & STORYLINE	HIGHWAY* SITE	MASS ¹ MEDIA	PERSONAL ² INTERP.	EAGLE ³ PLAINS	NWT
TRUE NORTH					
CARIBOU Migration	4,7,5,19	X	X	X	X
Winter range ecology					
Woodland caribou	5				
Rut					
Predators					
Legends					X
Human Dependence	5,7,19				X
Management					X
Status and Vulnerability					X
BERINGIA					
Defintion	4,5,7,8,14,19	X	X		
Refugium	7,8				
Weathering	8				
Human Occupancy	8				
	5,14,18,19				
TUNDRA & PERMAFROST					
Permafrost	4,7,8,15	X	X		X
Wind & Snow	7,8				
Angle of Sun/Insolation	8				
Vegetation	7				
Traditional Travel	7				X
Effects on Hwy Construction					
Tussock Community	7				
Fragility	7				
CREATURES OF WILDERNESS					
Grizzly	4,5,7,9,10	X	X	X	X
Dall Sheep	10				
Moose					
Wolverine					
Wolf					
Falcons					
Golden Eagle					
Arctic Grayling					
Whitefish & Inconnu					X
Personalities: Robert Frisch					
PATTERNS IN THE LANDSCAPE					
Glaciated vs Unglaciated	4,5,7,10,15,17	X	X	X	
River/Drainage Changes	5,7				
Mountain Building	15,17				
Autumn Colours	4,5				
Delta Braid					X
Engineer Creek	10				

SUBTHEMES & STORYLINE	HIGHWAY* SITE	MASS ¹ MEDIA	PERSONAL ² INTERP.	EAGLE ³ PLAINS	NWT
OUR HOME, OUR NATIVE LAND					
WE HAVE ALWAYS LIVED HERE	4,5,7,14,15,19	X	X	X	X
Archaeology	5				
Creation Myths and Legends	14				X
Ancient Indian & Paleo-eskimo cultures	19				
Pre-contact cultures	4,5				
Aboriginal Trade	7,14,15				X
Travel routes and landmarks					X
EARLY CONTACT	4,15	X	X	X	X
Explorers	15				X
Scientists and Surveyors	15				X
The Fur trade					X
Epidemics					X
Missionaries and Linguists					
GOLD RUSH					
Gold Rush routes	2,4,7,15	X	X		X
Gold Rush personalities	7,15				X
Trading Posts	7				
Market hunting	7				
North Fork Hydro Project	2				
MOUNTIES, BORDERS AND BOUNDARIES					
Native sovereignty	4,7,15,17	X	X	X	X
Government					
The Lost Patrol	7			X	X
Settlement of Old Crow					
Bishop Stringer and his Boots					X
The Mad Trapper	17			X	X
Early Aviation	17			X	
ROAD TO THE ARCTIC CIRCLE . . . AND BEYOND					
DEMPSTER HIGHWAY	4,5,7,15	X	X	X	X
Road to Resources	7,15				
Oil & gas exploration & cat trains	7,15			X	
Route selection					
Highway construction				X	
Movie set - Never Cry Wolf					
ARCTIC CIRCLE	18	X	X	X	
Significance	18				

SUBTHEMES & STORYLINE	HIGHWAY* SITE	MASS ¹ MEDIA	PERSONAL ² INTERP.	EAGLE ³ PLAINS	NWT
MACKENZIE RIVER SYSTEM		X			X
Description and evolution					X
Lifeblood of the Dene					X
Euro-Canadian entry route					X
Mackenzie Delta					X
INUVIK . . . AND BEYOND		X			X
Inuvik and points beyond					

* Numbers refer to proposed Highway Interpretive Sites, refer to text for full names and site descriptions.

¹ Mass Media includes video, audio tape, strip map, printed material, etc.

² Personal Interpretation includes: staff and roving interpreters, commercial operators

³ Eagle Plains Hotel - existing interpretation

Note: All themes to be interpreted at Site 1, Dempster Highway Corner; Site 4, Tombstone Mountain Campground; Site 20 YT/NWT Border; and introductions in Dawson City, Whitehorse, and Inuvik.

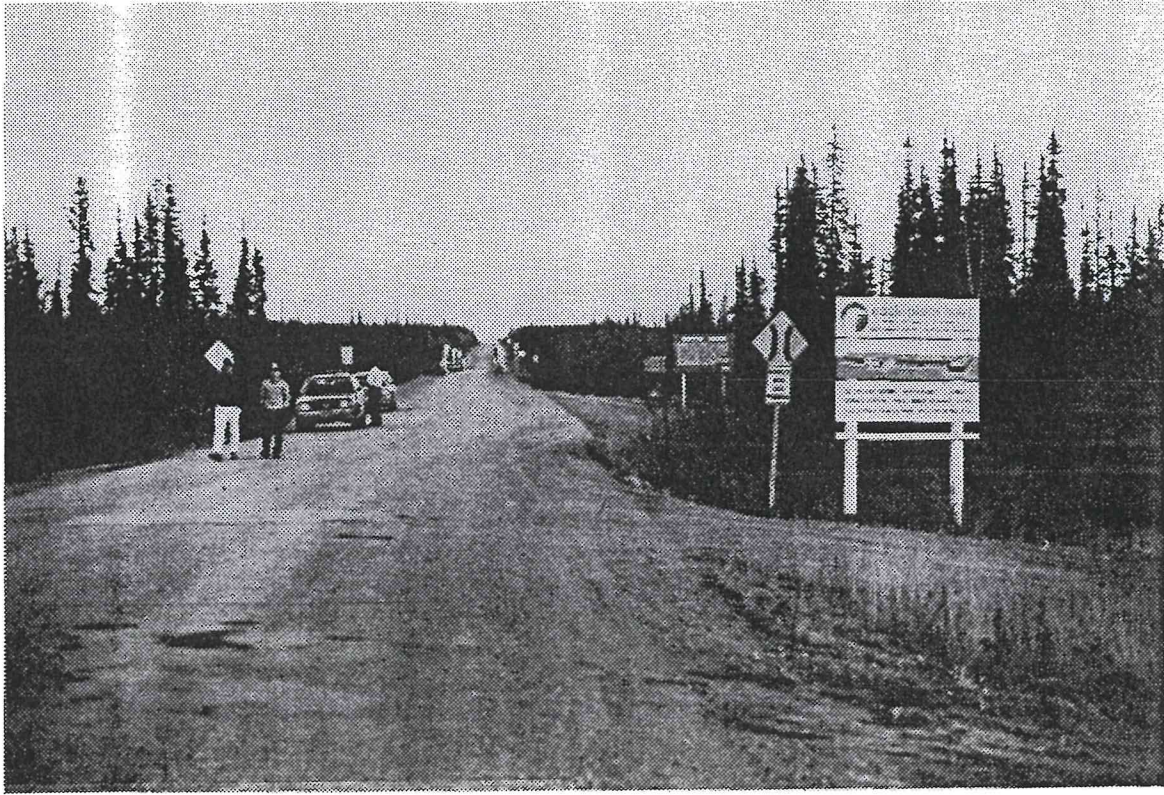
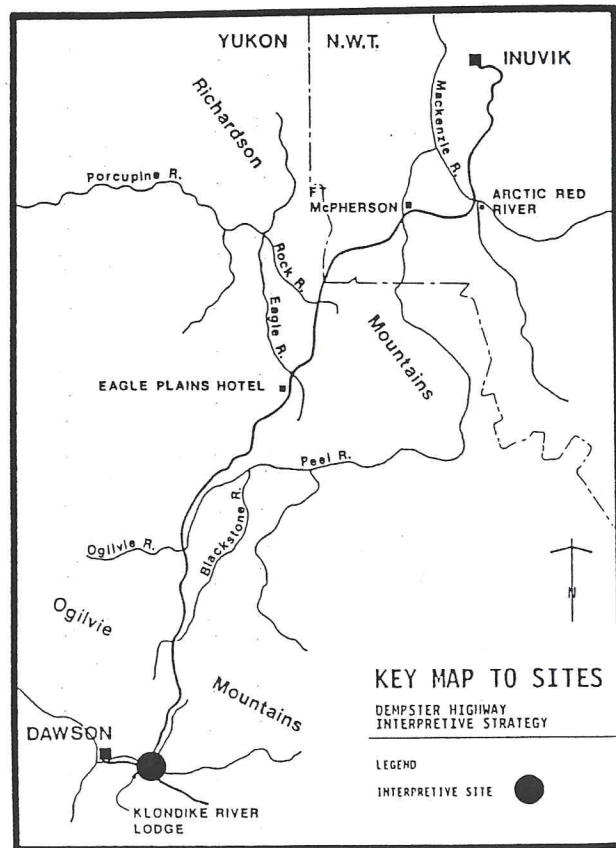


PHOTO 1 : DEMPSTER CORNER

Note the number and varying designs of the existing signs. The proposed information kiosk would be to the right of the sign in the foreground, or could be an expanded pull-off in the vicinity of the existing Dempster Highway sign. The entrance to the Dempster Highway deserves a sign and rest area that will draw visitors, if only in the imaginations of some, to the Arctic Circle and beyond.



1) DEMPSTER CORNER

MAJOR SITE

RATIONALE:

Highway turnoff very poorly marked at present and information is only available in Dawson or casually from hotel/service centre staff. Some travellers are likely discouraged by lack of information or miss the turn completely. A route of this importance deserves an entrance that creates a positive impression.

More than 60,000 travellers pass by the Dempster Highway turn-off every year. Few realize what landscapes lie to the north. Most will continue on to Dawson City, where, if they are still curious about the Dempster Highway after looking at the Dempster Corner information kiosk, can then view a slide show or obtain a detailed route description. An outline of interpretive opportunities at Tombstone Mountain would also be available in Dawson City.

LOCATION:

Cleared area immediately northeast of Klondike Highway and Dempster Highway intersection

RECOMMENDED OPTIONS:

Kiosk with signage; 4 - 6 panels

OBJECTIVES:

To clearly identify the Dempster Highway turnoff
To provide information for travellers headed up the Dempster
To encourage travellers to undertake the trip during their current holiday or as part of some future visit

THEMES AND SUBTHEMES:

Brief introduction of all themes

Additional Information: should inform travellers about:

- length and condition of highway
- location of services (incl. camping)
- recreational opportunities (from hikes to Herschel) highlights ahead
- interpretive services available
- encourage visitors with limited time to visit Tombstone Mountain area for easy day trip

DETAILS:

Kiosk should be easily identifiable from a distance (large "Dempster Information" sign). Not intended to be staffed. Sign should direct travellers to Dawson for additional information.

CONSTRAINTS:

Disturbed area - no significant environmental constraints
Land availability - purchase may be required

ORDER OF MAGNITUDE COST ESTIMATE:

Kiosk	\$5,000.00
Signage	\$10,000 - \$ 15,000
Site improvements and access	\$20,000 - \$ 30,000
ESTIMATED SITE COST	\$35,000 - \$45,000

2) NORTH FORK - SECONDARY SITE

RATIONALE:

Already used by anglers fishermen and picnickers.

LOCATION:

Cleared area adjacent to power plant site and Klondike River

RECOMMENDED OPTIONS:

Free-standing sign; enhanced picnic area

OBJECTIVES:

To provide information regarding the North Fork Hydro Project

THEMES AND SUBTHEMES:

Our Home, Our Native Land
GOLD RUSH

DETAILS:

Area is currently used as a picnic area. Improvements could include picnic tables, firepit or fireplaces, garbage containers, and turnoff sign with picnic symbol at the Highway.

CONSTRAINTS:

Disturbed area - few environmental constraints except regarding possible disturbance of fish spawning areas

Historical artifacts and structures present - some have been vandalized and increased use might increase vandalism or souvenir collecting

ORDER OF MAGNITUDE COST ESTIMATE:

Sign and Stand	\$ 2,000
Day Use Improvements	\$ 5,000 - \$10,000
ESTIMATED SITE COST	\$ 7,000 - \$12,000

3) VIEW OF THE OGILVIES - PULL-OFF

RATIONALE:

Already used for photography by many visitors as site provides spectacular scenery and first very good view of the Ogilvies. Currently pull-off is unsafe.

LOCATION:

KM 23 - east side of highway

RECOMMENDED OPTIONS:

Freestanding sign with viewpoint or camera image symbol

OBJECTIVES:

To provide photo opportunity of Ogilvie Mountains

THEMES AND SUBTHEMES:

None directly, no interpretation proposed

DETAILS:

Site development confined to an improved pull-off with a simple sign designating photo opportunity.

CONSTRAINTS:

Safety- highway site lines need to be checked

ORDER OF MAGNITUDE COST ESTIMATE:

Pull-off	\$4,000-\$5,000
ESTIMATED SITE COST	\$4,000-\$5,000

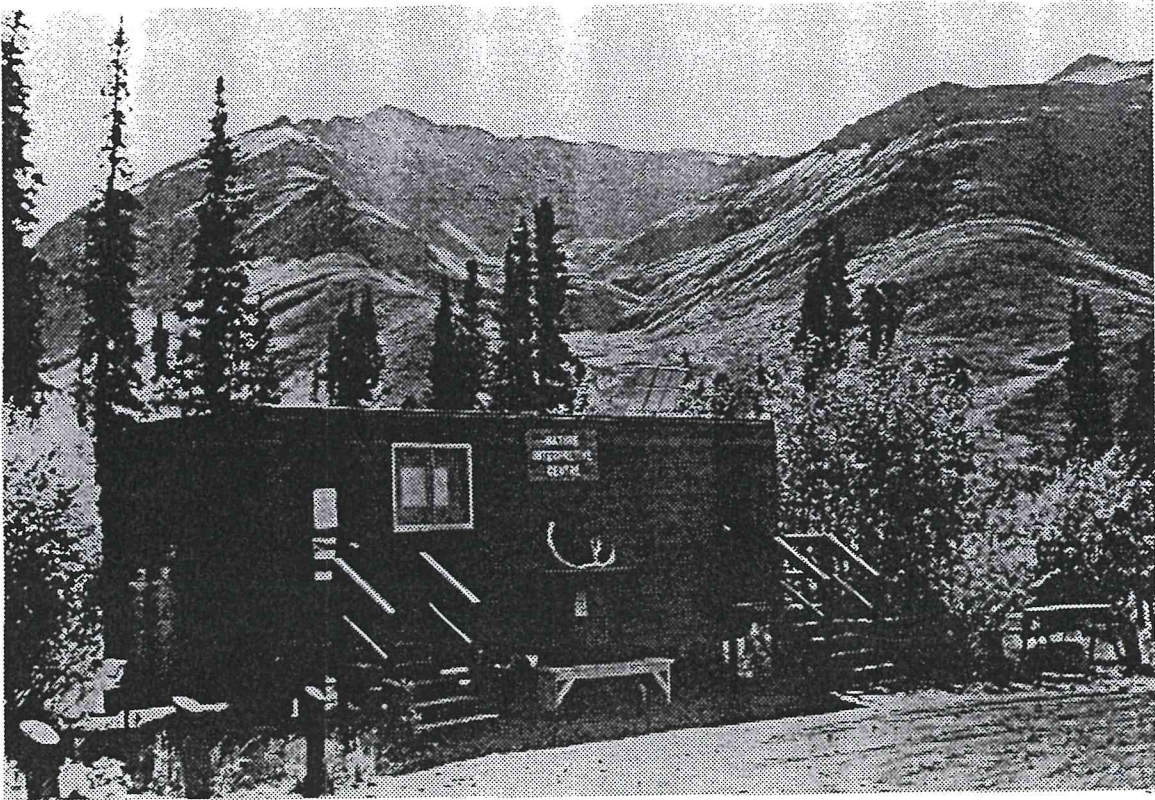
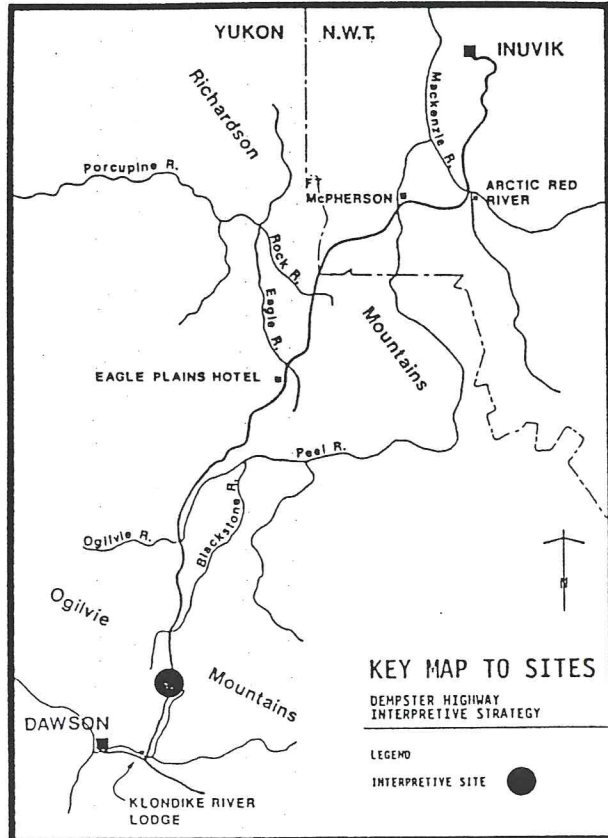


PHOTO 2 : DEMPSTER HIGHWAY INTERPRETIVE CENTRE

The existing building is and appears to be a temporary structure. It is too small to adequately accommodate future interpretive and/or information services. This site and the nearby Tombstone Mountain view are the first real taste of the Dempster Highway experience. A slightly larger, but simple rustic building is proposed. This information and orientation centre could also accommodate the present interpretation and campground role.



4) TOMBSTONE MOUNTAIN CAMPGROUND - MAJOR SITE

RATIONALE:

This campground and interpretive centre already receives considerable use by highway travellers. The interpretive centre receives approximately 1500 visits in July and August and campground occupancy is normally about 50%-75%. Promoting the Tombstone area as a day trip will encourage travellers to remain in the Yukon an additional day but necessitates enhancement of recreational opportunities in the area.

The existing tombstone campground location for an interpretive centre is superior to the highway viewpoint a short distance to the north, since it is more protected, serves a campground orientation function, and has fewer traffic problems. The cost of a new centre at the viewpoint would also be higher due to construction costs in difficult terrain for parking and other facilities.

LOCATION:

KM 71.4

RECOMMENDED OPTIONS

Improved interpretive centre / improved trail

OBJECTIVES:

To provide a high quality interpretive experience sufficient to justify Tombstone as a day-trip destination in itself,

To introduce the True North theme.

THEMES AND SUBTHEMES:

Almost any subtheme or story could form the basis for interpretation by staff interpreters but displays and presentations should focus on:

True North

CARIBOU

BERINGIA

CREATURES OF WILDERNESS

PATTERNS IN THE LANDSCAPE

Our Home, Our Native Land

WE HAVE ALWAYS LIVED HERE

Road to the Arctic Circle...and Beyond

DEMPSTER HIGHWAY

INUVIK...AND BEYOND

DETAILS:

A staffed centre can provide both interpretation and information. In addition, some enhancement of the existing campground trail (e.g. brush-clearing) would provide visitors with a pleasant activity in a controlled situation. A trail could also be located on knolls in and around the campground to take advantage of fine views available. Centre displays should be of two varieties: permanent displays which provide standard (that is, broadly applicable) information and interpretation concerning the Dempster Highway and the three interpretive themes; other displays would be temporary and would allow staff to take advantage of seasonal resources, e.g.

temporary and would allow staff to take advantage of seasonal resources, e.g. wildflowers or berries.

We recommend that the existing trailer be replaced by a simple wood frame or log building designed for compatibility with the landscape. Materials such as stone could be used to reflect the landscape character. A cabin style would be consistent with the remote location. The building design options should be considered in conjunction with a complete site plan for the highway exit, parking and toilet facilities. Recommendations on exact size or design are not appropriate until the interpretive planning stage.

CONSTRAINTS:

Few specific environmental constraints although consideration must be given to the possibility that increased use as a destination will require enhanced parking and camping facilities

Safety- trail routing should consider shrub species and density relative to possible bear conflicts

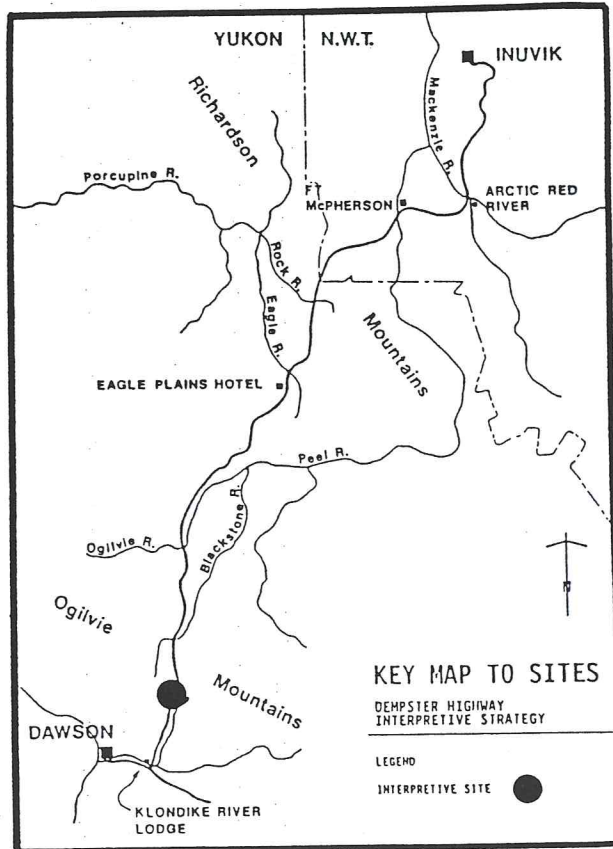
ORDER OF MAGNITUDE COST ESTIMATE:

Visitor Centre (500 - 750 sq ft)	\$ 65,000 - 95,000
Displays	\$ 30,000
Improved parking	\$ 10,000
Operations & Maintenance	
Staffing (7 days @ week - 10 weeks) + regular interpretive programming	\$ 40,000 (annually)
Trail Enhancement	\$ 10,000 - \$20,000
Dust free zone (annual cost)	\$ 3,000
ESTIMATED SITE COST	\$ 105,000 - \$125,000+



PHOTO 3.: TOMBSTONE MOUNTAIN

The view of Tombstone Mountain is one of the most spectacular on the Dempster Highway. This site is also a logical place to tell many different interpretive stories.



5) TOMBSTONE MOUNTAIN VIEWPOINT - MAJOR SITE

RATIONALE:

Existing pull-off lacks information and is very hazardous.

Many stories can be told at this site, and for many visitors it is their first taste of an arctic landscape. The view is one of the best on the Dempster Highway and warrants a major stop. People will stop here even if provisions for an improved pull-off are not made.

LOCATION:

KM 74.4

Several alternatives including:

- 1) enhance existing site, use traffic speed signs
- 2) develop new site below but on same side as existing site
- 3) develop new site above rise on east side of hwy
- 4) enhance existing site for southbound travellers and develop new site above rise for northbound travellers

The location and design should be selected following careful site evaluation with respect to traffic and ease of construction.

RECOMMENDED OPTIONS:

3-4 interpretive signs mounted on guard rails or freestanding.

OBJECTIVES:

To provide photo opportunity of Tombstone Valley

To interpret the Tombstone Valley

To encourage visitors to continue on up the Dempster

THEMES AND SUBTHEMES:

True North

CARIBOU

BERINGIA

CREATURES OF WILDERNESS

PATTERNS IN THE LANDSCAPE

Our Homes, Our Native Land

WE HAVE ALWAYS LIVED HERE

Road to the Arctic Circle...and Beyond

DEMPSTER HIGHWAY

Additional Information:

Include distances to next campground and Eagle Plains Hotel

DETAILS:

Interpretive signs - low aspect and angled so as not to interfere with the view, are situated to provide orientation and interpretation to visitors looking west towards Tombstone Mountain. One panel is angled towards the highway (north) and provides information on what lies ahead.

CONSTRAINTS:

Safety- dependent on site selection

Cost- high cost for site above existing highway

Weather- will not likely be used on very windy days

ORDER OF MAGNITUDE COST ESTIMATE:

Signs	\$ 7,000 - 10,000
Highway pull-off improvements	\$ 25,000- 35,000
Dust-free zone (annual cost)	\$ 3,000
ESTIMATED SITE COST	\$ 35,000- 45,000

6) MOOSE LAKE - PULL-OFF

RATIONALE:

One of the better opportunities for viewing wildlife and often used by bird-watchers.
Pull-off needed due to hazardous location.

LOCATION:

KM 105 - west side of highway

RECOMMENDED OPTIONS:

Pull-off with pull-off sign

OBJECTIVES:

To provide safe parking while exploring Moose Lake area

THEMES AND SUBTHEMES:

None directly, no fixed interpretation although roving interpreter may use area

DETAILS:

Site development should allow 2-3 recreational vehicles to safely pull off the road.

CONSTRAINTS:

Safety- highway sightlines need to be checked
Increased use may be detrimental to wildlife viewing

ORDER OF MAGNITUDE COST ESTIMATE:

Pull-off construction	\$4 - 5,000
ESTIMATED SITE COST	\$4 - 5,000

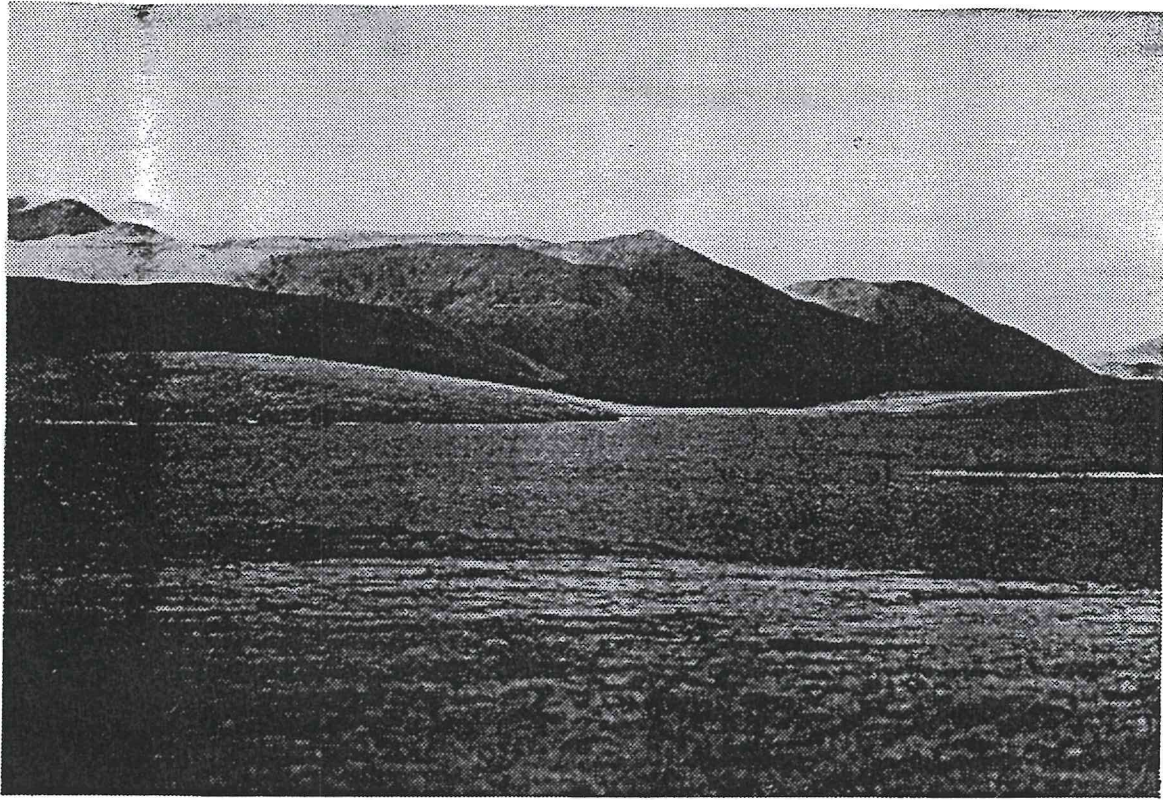
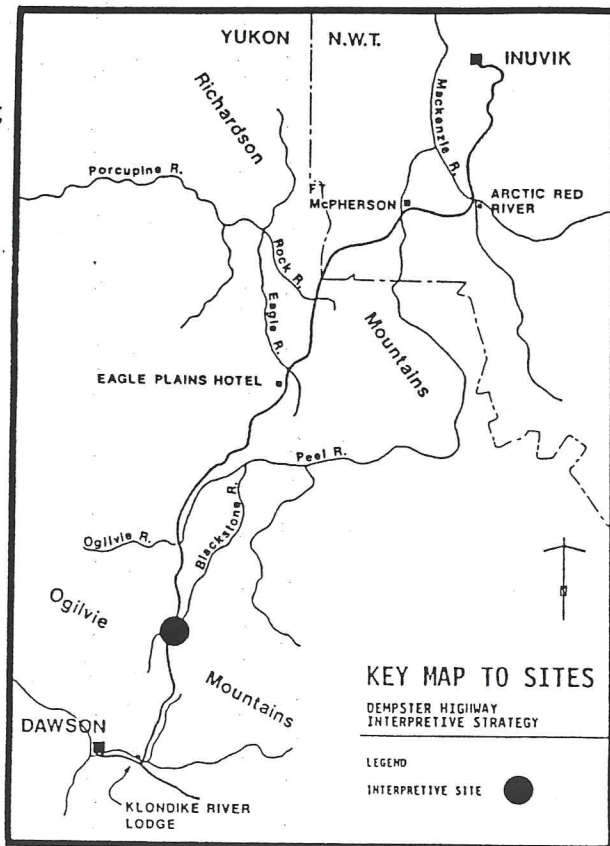


PHOTO 4: CHAPMAN LAKE

The Chapman Lake-Blackstone Uplands site offers beautiful scenery as well as the converging of several natural and cultural heritage sub-themes. It is an ideal site for interpretation as well as support facilities such as a self-guiding trail, parking, picnic tables, and toilet.



7) BLACKSTONE UPLANDS/CHAPMAN LAKE - MAJOR SITE

RATIONALE:

Location provides best opportunity on entire highway for interpreting first-hand all of the themes and a majority of the subthemes. Current interpretation is limited to a single sign with no parking. The site has few construction or safety limitations.

From an audience perspective, there is a strong demand for information on cultural history, even though visitors have not likely chosen the Dempster trip specifically for this reason. This site could, in the future and under certain conditions, satisfy a segment of visitors who may be seeking a hands-on experience, in this case viewing or participating in an archaeological dig.

LOCATION:

To be determined but approximately KM 116, east side

RECOMMENDED OPTIONS:

Viewing platform / signs / self-guiding loop trail / roving interpreter

OBJECTIVES:

To interpret all of the themes and many of the subthemes.

THEMES AND SUBTHEMES:

True North

CARIBOU

BERINGIA

TUNDRA AND PERMAFROST

CREATURES OF WILDERNESS

PATTERNS IN THE LANDSCAPE

Our Home, Our Native Land

WE HAVE ALWAYS LIVED HERE

GOLD RUSH

MOUNTIES, BORDERS AND BOUNDARIES

Road to the Arctic Circle...and Beyond

DEMPSTER HIGHWAY

DETAILS:

Recommend a pullout with parking facilities and picnic tables. Short trail leads to a low viewing platform with angle railings and interpretive signage. Signage will identify principal features visible e.g. Seela Pass, pingo, river, mountain ranges, Chapman Lake, Blackstone Village, outfitters' buildings. A short loop trail (approx 500 m) leads from the platform and parking lot. Trail should pass quickly out of view of the highway and should feature interpretive signage identifying vegetation, and the cat train remnants which the trail will pass close to. A roving naturalist - perhaps based out of the outfitter's cabins could visit the site to provide personal interpretation as well as providing a similar service at other points along the highway.

CONSTRAINTS:

Environment- potential environmental impacts should be evaluated.

Cost- significant construction may be required.

Sensitive site- Blackstone Village has not been studied and interpretation must be careful not to identify exact location of sites.

Visual sensitivity- as story can be told in a number of locations within the general area, care must be taken to maintain views (e.g. parking area in a low site - viewing platform unobtrusive).

User- trail should be suitable for use by seniors.

ORDER OF MAGNITUDE COST ESTIMATE:

Viewing platform	\$ 4,000 - 6,000
Interpretive Signs	\$ 15,000
Trail (depends on length & materials, lower and upper end costs shown.)	\$ 5 - 20,000
Roving Interpreter (see "Personal Interp")	(annual cost)
Parking area	\$ 25,000 - 35,000
Toilets, possible picnic tables	\$ 7,000 - 10,000
Dust free zone (annual cost)	\$ 3,000 (annual)
ESTIMATED SITE COST	\$ 56,000 -86,000

8) WINDY PASS

- SECONDARY SITE

RATIONALE:

The winds of the pass are a relatively safe natural phenomenon which provide the visitor with a chance to experience first hand the forces that helped shape the area.

The site is a natural viewpoint with a landscape that most will perceive as unusual. Visitors will stop here with or without a pull-off. The safety concerns are surmountable with adjustments to the pull-off location.

LOCATION:

Approximately KM 152

RECOMMENDED OPTIONS:

Pull-off with free-standing interpretive sign; could be moved from top of pass to safer location if required.

OBJECTIVES:

To provide first-hand "weather experience".
To interpret the role of Beringia as a refugium.

THEMES AND SUBTHEMES:

True North
BERINGIA
TUNDRA AND PERMAFROST

DETAILS:

Site development confined to a pull-off able to accommodate 2-3 recreational vehicles and a free-standing sign.

CONSTRAINTS:

Environment- no significant environmental constraints
Safety - poor site lines, dusty.

ORDER OF MAGNITUDE COST ESTIMATE:

Sign	\$ 2,500
Pull-off	\$ 7,000 - 10,000
ESTIMATED SITE COST	\$ 9,500 - 10,000

9) GYRFALCON EYRIE

- SECONDARY SITE

RATIONALE:

Site provides reasonably good wildlife viewing opportunities with little risk to the wildlife. Quality wildlife viewing opportunities are desired by virtually all Dempster Highway travellers. This site provides a chance to meet this demand. The audience analysis points out that birders are a specific market segment, some of whom are on guided tours. The large size of Gyrfalcons, however, makes the sighting appealing to many travellers with natural history interests.

LOCATION:

KM 159, east side

RECOMMENDED OPTIONS:

Pull-off/ freestanding interpretive sign/ roving interpreter

OBJECTIVES:

To provide an opportunity for visitors to view birds of prey, specifically gyrfalcons

THEMES AND SUBTHEMES:

True North

CREATURES OF WILDERNESS

DETAILS:

Pull-off suitable for several recreational vehicles. Adjacent to the pullout is a single freestanding interpretive sign describing the gyrfalcons, their nest biology, and their vulnerability to human activities. Site may be used on a regular or irregular basis by an interpreter with spotting scope. Interpreter should be in an easily identifiable uniform and their vehicle should be marked as well (e.g. magnetic sign).

CONSTRAINTS:

Environment- site must be developed in such a way that visitors are not encouraged directly or indirectly to approach the nests. On-going monitoring of the impact of visitors should be part of the interpretive program.

Size- pull-off should be kept small to discourage large numbers.

ORDER OF MAGNITUDE COST ESTIMATE:

Sign	\$ 2,500
Roving Interpreter (see "Personal Interp")	(annual cost)
Pull-off	\$ 4,000 - 5,000
ESTIMATED SITE COST	\$ 6,000 - 7,500

10) SHEEP LICK

- SECONDARY SITE

RATIONALE:

Dall sheep are the likeliest species of large mammal to be observed from the highway. This location has been suggested by Fish and Wildlife Branch as suitable for non-obtrusive viewing of this species at a mineral lick. Wildlife viewing opportunities are desired by the target audience and this site provides an ideal opportunity to satisfy a demand. Family groups with younger children, in particular, would enjoy the experience of seeing a large mammal in a wilderness setting.

LOCATION:

Specific location to be determined in co-operation with Fish and Wildlife Branch biologists. Approximate area - KM 185

RECOMMENDED OPTIONS:

Interpretive signs and pull-off
May require walkway and viewing platform depending on selected site.

OBJECTIVES:

To provide viewing opportunities of Dall Sheep

THEMES AND SUBTHEMES:

True North
CREATURES OF WILDERNESS
PATTERNS IN THE LANDSCAPE

DETAILS:

Signs should introduce Dall Sheep natural history and emphasize their sensitivity to disturbance at the licks. In case sheep are not visible, signs can also present information on the mineral springs, river, and nearby landforms.

CONSTRAINTS:

Environment- Dall Sheep sensitive to disturbance so site must be non-obtrusive.
Monitoring of visitors impacts should be done.

ORDER OF MAGNITUDE COST ESTIMATE:

Signs	\$ 4,000
Pull-off	\$ 4,000 - 5,000
Short trail to viewing area	\$ 3,000 - 5,000
Viewing Platform	\$ 2,000 - 3,000
ESTIMATED SITE COST	\$13,000 - 17,000

11) ENGINEER CREEK

- CAMPGROUND

RATIONALE:

Improving interpretive experiences at this campground may encourage travellers to extend their visit to the Dempster. This site is used by bus tours for lunch stops. An interpretive experience, particularly one allowing a short walk, would meet a demand for a specific target audience as well as improve the camping experience.

LOCATION:

KM 193.4

RECOMMENDED OPTIONS:

Interpretive panels - may be situated in kiosk or existing picnic shelter
Short self-guiding or walking loop trail at campground

OBJECTIVES:

To interpret the Engineer Creek area
To provide information on recreational opportunities

THEMES AND SUBTHEMES:

True North

CREATURES OF WILDERNESS
PATTERNS IN THE LANDSCAPE

DETAILS:

Signs should encourage visitors to visit the nearby gyrfalcon and Dall sheep viewing areas, interpret the spectacular landscape nearby, and in particular, Sapper Hill

Trail to be laid out on floodplain area around campground

CONSTRAINTS:

Environment-interpretation should make mention of the presence of bears in the area and should emphasize normal hiking etiquette and precautions. The slope and soils in the Sapper Hill vicinity should be investigated prior to any trail work or encouragement to walk in the area.

ORDER OF MAGNITUDE COST ESTIMATE:

Kiosk	\$ 3,000
Signs	\$ 8,000
Trail (will vary by length)	\$ 5,000 - 15,000
ESTIMATE SITE COST	\$ 16,000 - 36,000

12) ELEPHANT ROCK

PULL-OFF

RATIONALE:

Already promoted as a unique geological feature but difficult to locate. Interesting geology in area. This feature could be of particular interest to children travelling the Dempster Highway in a family group.

LOCATION:

KM 221.4

RECOMMENDED OPTIONS:

Pull-off with sign (which includes arrow)
Roving interpreter could occasionally use site to interpret geology of area.

OBJECTIVES:

To provide a viewing opportunity of an interesting feature
To allow an opportunity for occasional interpretation of geological features.

THEMES AND SUBTHEMES:

none

DETAILS:

Pull-out should be able to accommodate a minimum of 3 recreational vehicles. Sign should include title "Elephant Rock", silhouette of feature, and an arrow indicating exact direction in which to look.

CONSTRAINTS:

Safety- highway site lines need to be checked

ORDER OF MAGNITUDE COST ESTIMATE:

Sign	\$ 1,500
Pull-off	\$ 4,000 - 5,000
ESTIMATED SITE COST	\$ 5,000 - 6,500

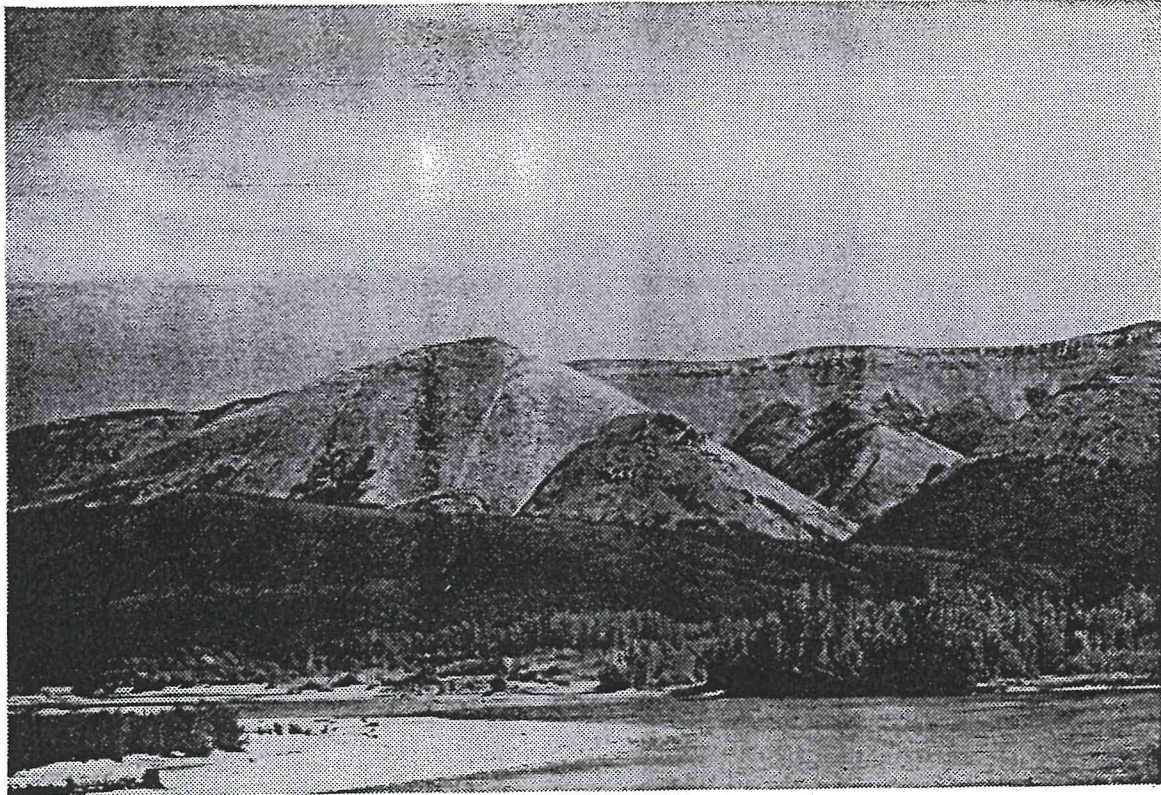
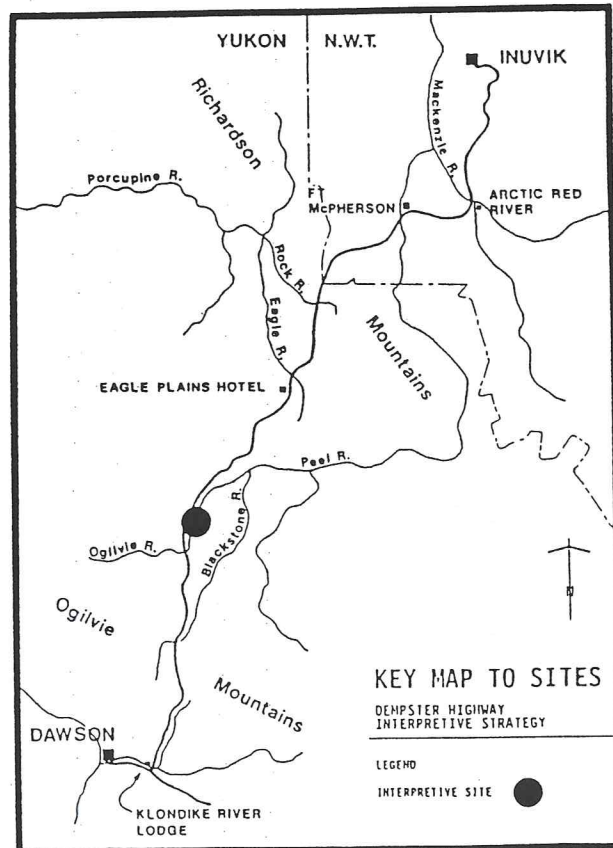


PHOTO 5 : OGILVIE RIVER

There are a number of pull-offs and secondary interpretive sites proposed along the Ogilvie River, for example at Elephant Rock and Beaverhouse Mountain. There is a need for rest stops on this section of highway to allow visitors to relax for a few minutes. The setting is attractive and there are interpretive stories to tell. Grayling fishing is popular where there is access to the river.



13) OGILVIE RIVER

- PULL-OFF(S)

RATIONALE:

In spite of passing near rivers, the traveller presently finds only limited access to the water. The audience analysis suggests that people want stopping places, and that fishing and picnicing opportunities are sought.

LOCATION:

Either KM 231 or KM 238 or both

RECOMMENDED OPTIONS:

Pull-off(s) with pull-off sign

OBJECTIVES:

To provide access to the Ogilvie River

THEMES AND SUBTHEMES:

None

DETAILS:

Pull-offs should provide parking for 3 recreational vehicles. Sites could identified by a simple pull-off sign but should not specifically encourage fishing.

CONSTRAINTS:

Environment- overfishing of grayling may be a concern if too much access is provided or encouraged.
Safety-may be public safety concerns in some seasons due to river hydrology; highway site lines need to be checked

ORDER OF MAGNITUDE COST ESTIMATE:

Pull-off	\$4,000 - 5,000
ESTIMATED SITE COST	\$4,000 - 5,000

14) BEAVER HOUSE MOUNTAIN - SECONDARY SITE

RATIONALE:

This geological formation provides a natural opportunity to synthesize cultural history with geological history.

LOCATION:

There is some debate over which kilometre distance on the Dempster Highway is the appropriate location for this legend site. Approximately KM 222, or possibly KM 244 are suggested. (Please note location is marked before Site #13 on the maps.)

RECOMMENDED OPTIONS:

Free-standing interpretive sign with pull-off

OBJECTIVES:

To interpret a Gwich'in legend regarding large animals
To interpret the role of Beringia as a refugium
To provide a view of an interesting geological formation

THEMES AND SUBTHEMES:

Our Home, Our Native Land
WE HAVE ALWAYS LIVED HERE
True North
BERINGIA

DETAILS:

Site development should be confined to a simple pull-off for several vehicles. A free-standing sign would indicate (by silhouette) the rock formation, and would interpret the Gwich'in story in relation to Beringia.

CONSTRAINTS:

Safety- highway site lines need to be checked

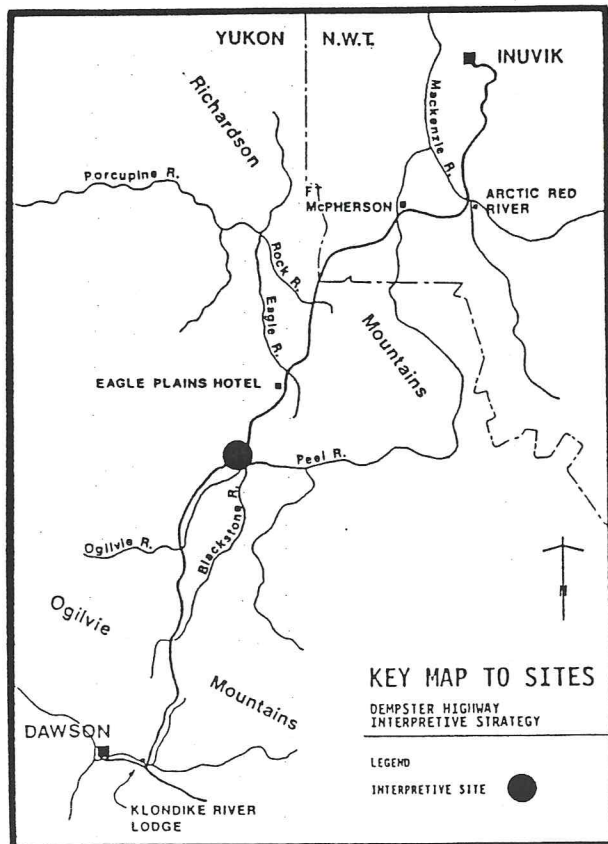
ORDER OF MAGNITUDE COST ESTIMATE:

Sign	\$ 3,000
Pull-off	\$ 4,000 - 5,000
ESTIMATED SITE COST	\$ 7,000 - 8,000



PHOTO 6 : EAGLE PLAINS

The view from Eagle Plains over the Peel River valley is one of the highlights of the Dempster trip. The Ogilvie Mountains are across the valley, with their characteristic grey and white colouration. The site lends itself to a major interpretive stop, combined with limited support facilities such as picnic tables.



RATIONALE:

Site provides a good viewpoint in an existing disturbed area. Also provides a good rest stop prior to the long drive to the Eagle Plains Hotel. From the travellers perspective this site will help explain the change in the landscape which has occurred since leaving the Ogilvie River valley.

LOCATION:

KM 272.6

RECOMMENDED OPTIONS:

Picnic area with short trail to interpretive signs (4), roving interpreter

OBJECTIVES:

To interpret the Peel River journeys
 To interpret the visible seismic lines
 To interpret visible Cat Train route and remnants
 To interpret the drunken forest
 To interpret the highway route (why on top of ridge?)

THEMES AND SUBTHEMES:

True North

TUNDRA AND PERMAFROST
 PATTERNS IN THE LANDSCAPE

Our Home, Our Native Land

WE HAVE ALWAYS LIVED HERE

EARLY CONTACT

MOUNTIES, BORDERS, AND BOUNDARIES

Road to the Arctic Circle...and Beyond

DEMPSTER HIGHWAY

DETAILS:

Recommend the signs be low-aspect forming a semi-circle to face the respective topics being discussed. Alternative designs for structure include a low platform with railing similar to that proposed for Blackstone Uplands Site or free-standing signs. Locating signs away from picnic area would reduce distractions.

The site is suitable for picnicing or simply taking a longer rest stop. The bug population may be kept at bay on many days, but windy conditions may limit use of the site as well. Table and toilet locations should be considered during the site planning stage. Consideration should be given to cleaning up the site and removing nearby oil drums.

CONSTRAINTS:

Site lines- site lines appear acceptable but should be checked.

ORDER OF MAGNITUDE COST ESTIMATE:

Signs	\$ 10,000
Viewing Platform	\$ 3,000 - 5,000
Parking improvements	\$ 20,000 - 25,000
Trail (vary by length)	\$ 3,000 - 5,000
Picnic tables and toilet	\$ 2,000 - 10,000
Dust free zone (annual cost)	\$ 3,000
ESTIMATED SITE COST	\$ 38,000- 55,000

RATIONALE:

The hotel already provides excellent interpretation of the Mad Trapper and Lost Patrol stories. The site does not lend itself to any particular story visible from the hotel, but is a natural point for interpretation since visitors stop here anyway. It is an ideal site for private enterprise or communities to develop the interpretive facilities or programs since there is a captive audience in relatively predictable numbers. The site is also logistically well placed to house interpretive staff who may travel north and south on the highway to provide programs at sites such as the Arctic Circle or the Eagle Plains viewpoint.

Eagle Plains Hotel may also be considered the ideal location to provide information and interpretive services to special audience groups that are sure to use the facilities. These include seasonal hunters, truckers, or other working travellers.

There is no recommendation to develop a government financed interpretive centre here since other superior sites are identified, and the Eagle Plains Hotel area is a good opportunity for private enterprise to participate. Government agencies could participate in alternative private facilities or programs by assisting with financing or providing technical advice. Similarly, joint efforts involving the Gwich'in of Old Crow should be considered.

From an audience perspective the Eagle Plains Hotel interpretive experience will be used regularly by bus tours or other guided trips. Group programs or facilities catering to groups are therefore most appropriate. The location also lends itself well to special events at the Arctic Circle. A midsummer barbecue organised by the hotel and the "Keeper of the Arctic Circle" already satisfy a need to celebrate the northern mystique. While not directly an interpretive function, these events respond to the interests of the traveller.

LOCATION:

KM 369.2

RECOMMENDED OPTIONS:

Possible site for personal interpretation; vicinity could be used for cultural heritage interpretation by Old Crow people; jumping off point for side trips to Old Crow area as well

OBJECTIVES:

To interpret other relevant themes
To provide a potential support role to a roving interpreter.

THEMES AND SUBTHEMES:

As appropriate

DETAILS:

Hotel currently provides excellent displays on the Mad Trapper and Lost Patrol as well as additional information on the history of the area including the Cat Trains and the Reindeer Drive. Hotel also represents a regular audience of substantial size and plans call for a campground and nature trail. We believe that regular

interpretive programming would be of benefit to the hotel as well as meeting the objectives of the interpretive strategy.

A roving interpreter(s) could be located at the hotel during the summer months. This person could focus on programs at sites north and south of the hotel.

CONSTRAINTS:

Important to avoid conflicts with private or community based interpretive initiatives

COST ESTIMATE:

Roving interpreter(s)	\$20,000-\$40,000
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17) EAGLE RIVER

- SECONDARY SITE

RATIONALE:

Site provides water access as well as a picnic/rest stop in an already disturbed location. One sign (Mad Trapper) currently in place but not in best location.

From a visitor perspective the site offers an alternative for those who wish to stop briefly after the long Eagle Plains drive, but do not want to use the hotel restaurant facilities. The site is also used for canoe trip access on the Eagle River. An interpretive stop here would serve this specific user group as well.

LOCATION:

KM 377.8

RECOMMENDED OPTIONS:

Picnic site/ rest stop / pull-off with 2 interpretive signs (replace existing sign)

OBJECTIVES:

- To interpret the Mad Trapper's end
- To interpret the Eagle River
- To identify recreational opportunity (canoeing)
- To provide water access

THEMES AND SUBTHEMES:

- True North
- PATTERNS IN THE LANDSCAPE
- Our Home, Our Native Land
- MOUNTIES, BORDERS, AND BOUNDARIES

DETAILS:

Sign should refer visitors back to Eagle Plains Hotel for further information on the Mad Trapper. Signs should be free-standing at the river and away from the designated picnic and parking areas.

CONSTRAINTS:

Environment- site has reputation for horrific bug population

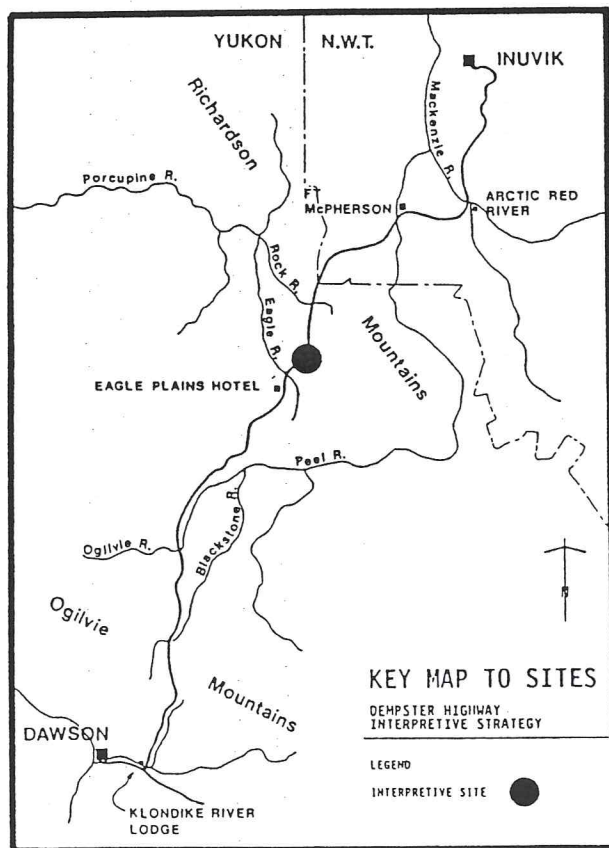
ORDER OF MAGNITUDE COST ESTIMATE:

Signs	\$ 4,000
Site improvements	\$ 5,000 - 8,000
ESTIMATED SITE COST	\$ 9,000 - 12,000



PHOTO 7: ARCTIC CIRCLE

The Arctic Circle is a primary destination for many visitors. It is a major interpretive stop combining natural and cultural heritage sub-themes in the Arctic Circle story. The existing sign does not lend itself to the feeling of 'passing through' the Arctic Circle. The interpretive sign points in the direction of the Richardson Mountains and is not well oriented to the geographic context of the Circle itself. These two factors may confuse visitors.



RATIONALE:

The audience analysis suggests that many visitors are travelling the Dempster Highway specifically to cross the Arctic Circle. The site is an important destination for all visitors and it warrants considerable enhancement to improve the visitor experience. This site represents the arrival to the arctic, after a long drive. The anticipated experience should be matched with a well designed information sign that is separate from a symbolic gate or entrance structure or marking of some kind.

From the target audience perspective this is the site that people have looked forward to; the previous sites were a pleasant surprise that most were not aware of or expecting.

LOCATION:

KM 405.6 (The present site is not the true location of the Arctic Circle.)

RECOMMENDED OPTIONS:

Improved sign / "line" / gateway / sign-in book

OBJECTIVES:

- To interpret the significance of the Arctic Circle
- To introduce the circumpolar concept
- To provide photo opportunities
- To provide visitor with opportunity to "leave their mark"
- To interpret the Richardson Mountains

THEMES AND SUBTHEMES:

- Road to the Arctic Circle...and Beyond
- ARCTIC CIRCLE
- True North
- BERINGIA

DETAILS:

Present sign and structure should be replaced with 2 less intrusive signs which do not interfere with photo opportunities. Needs include, a "gateway" which flanks the highway, some line indication (e.g. stones and mark on the highway), and, a sign-in book for visitors with the welcome in English and in native languages.

CONSTRAINTS:

Environment-few or no environmental constraints provided visitors remain in viewing area.

ORDER OF MAGNITUDE COST ESTIMATE:

Signs	- \$ 8,000 - 10,000
Existing sign removal	- \$ 1,500
Entry to Arctic Circle (gate, cairn, arch, posts, etc. options)	- \$ 2,500- 15,000
Parking upgrade if needed	- \$ 2,500
Dust free zone (annual cost)	- \$ 3,000
ESTIMATED SITE COST (range)	- \$ 14,500- 25,000

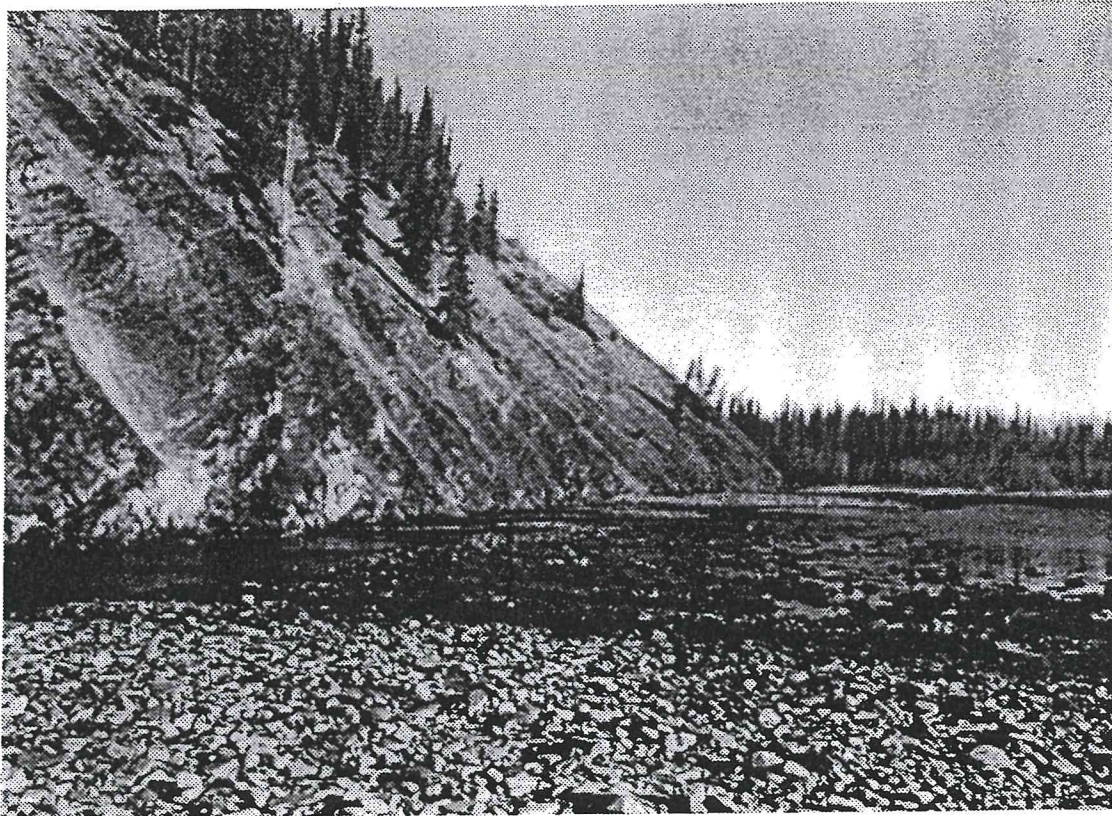
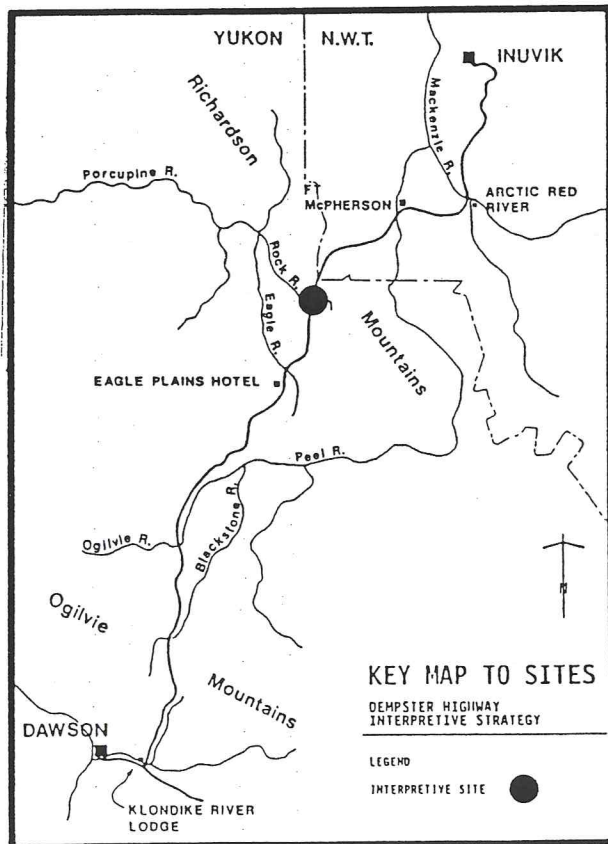


PHOTO 8 : ROCK RIVER

Rock River is the proper name for Cornwall Creek. The site is rich in human history and there are numerous archaeological sites in the vicinity. There are several options for interpretation here, depending on local Gwich'in participation, and on whether interpretive signs should be located in the campground or on the highway out of the forested valley.



19) ROCK RIVER

MAJOR SITE CAMPGROUND

RATIONALE:

The Rock River area is of great importance to the Gwich'in people both historically and presently. This active use of the area by native people coupled with the presence of camping facilities provides an excellent opportunity for interpretation of cultural history.

From an audience perspective there is a strong demand for information on cultural history and present customs. If local people were to provide some interpretive program here it would be well received by visitors, and for many would pique their curiosity about the northern communities which lie ahead.

LOCATION:

KM 445.8 (in campground) or some nearby upland site which provides an overview of the area

RECOMMENDED OPTIONS:

Interpretation at this site could take a wide variety of forms dependent upon the degree to which the community residents desire it. We recommend that interpretation here be at the discretion of the Gwich'in community. Some possible options include:

- i) a trail adjacent to the campground leading to the caribou corral
- ii) a Gwich'in interpreter presenting interpretive programming to the campers
- iii) assembly of a traditional tent or pit house
- iv) interpretive signs outlining the importance of the area
- v) craft-making demonstrations

Note that if interpretation is initiated at this site than a sign at the highway should be installed alerting visitors to this activity. Similar mention should be included in any broadly distributed materials.

OBJECTIVES:

- To interpret local use of the Rock River area.
- To interpret pre-history in the area.

CONSTRAINTS:

Environment- The campground has a rather high bug population, which could, as one option, be controlled by the Department of Renewable Resources Spraying program.

Archaeological sites in Rock River area are very sensitive to disturbance.

Local Use- Interpretive programs or facilities should respect local use, and participation of Ft. McPherson residents should be considered.

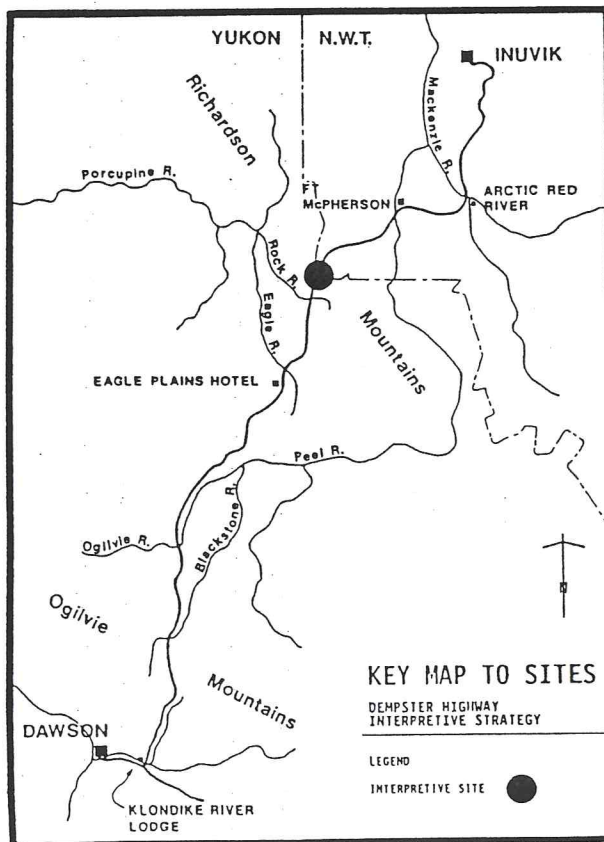
COSTS:

Not tabulated due to many variables.



PHOTO 9 : NWT BORDER & RICHARDSON MOUNTAINS

The photo depicts a typical view of the Richardson Mountains in the vicinity of the NWT border. The border itself has stories related to sovereignty as well as mountains. The sites' primary interpretive strategy role is to orient southbound travellers to the Yukon portion of the Dempster Highway.



RATIONALE:

Site currently lacks a significant Yukon message and does not identify the hiking opportunities available.

Currently about 600-750 visitors per year travel the Dempster Highway southbound, usually in buses. This specific audience group should have an opportunity to orient themselves to the Yukon portion of the highway. The importance of site will likely increase as additional parties choose to fly to Inuvik and only travel the Dempster one way.

LOCATION:

KM 465

RECOMMENDED OPTIONS:

2 interpretive panels facing south

OBJECTIVES:

To welcome visitors to the Yukon
To identify the services and facilities ahead
To interpret the major themes
To provide a hiking opportunity

THEMES AND SUBTHEMES:

Introduce all themes

Additional Information:

- should inform travellers about the length and condition of highway
- location of services (incl. camping)
- recreational opportunities
- highlights ahead
- interpretive services available

DETAIL:

Signs and stands should be designed for compatibility with NWT sign and messages. One sign should feature a welcome message and information; the other should provide interpretation. An important message for visitors returning from Inuvik is that the highway and area is always different, always changing.

CONSTRAINTS:

Environment- no significant environmental constraints

ORDER OF MAGNITUDE COST ESTIMATE:

Signs	\$ 8,000 - 10,000
Site improvements	\$ 10,000 - 20,000
ESTIMATED SITE COST	\$ 18,000 - 30,000

4.6 ORDER OF MAGNITUDE COSTS SUMMARY AND PRIORITIES

4.6.1 Order of Magnitude Costs Summary

The total cost of the interpretive strategy is difficult to estimate since implementation will likely be over a long term. The many choices of techniques, the unknowns of future government priorities and changing highway use contribute to the difficulty. This section outlines only order of magnitude costs for the interpretive strategy. It is the cumulative picture of all the individual sites and programs recommended. The site specific costs of interpretive stations are indicated in section 4.5.4 with detailed descriptions of proposed facilities.

Costs in this section are classified as either capital or operating, and are further divided into interpretive or site facilities. Interpretation costs are the direct expenditures which could include signs, trails or naturalists, while site facilities could include road pull-outs, picnic tables and other support functions.

4.6.1.1 Interpretation costs

Personal Interpretation

We would estimate that a government agency should budget between 18 and 24 person/months for a comprehensive personal interpretation program along the Dempster. With 4 staff an annual cost of \$ 70,000 - 80,000 is projected. Expenses must also be considered.

Signs

Sign costs vary with type of material, durability, size and other factors. Sign costs have been estimated on a site by site basis at between \$1,500 and 10,000. Design costs are not included.

Self-guiding trails

The cost of self-guiding trails ranges from moderate where suitable well drained sites are located to very expensive if boardwalks or corduroy surfaces are required to cross sensitive terrain. Costs could vary from \$10,000 to \$35,000 per site.

Viewing Towers and Platforms

There are many cost variables but a minimum of \$ 10,000 would be required in addition to a few signs.

Interpretive centre

Costs would range from as low as perhaps \$ 50,000 for a simple low-maintenance cabin with simple displays and few staff up to hundreds of thousands of dollars for a sophisticated centre.

The existing Tombstone centre is an example of a low-cost facility (e.g. less than \$ 50,000 per year to maintain and operate).

Mass media

Costs would vary based upon media, length, and quality of production. It is difficult to conceive of any media of any sort being produced for less than \$ 10,000. Videos generally cost out at between \$ 1,500 and \$ 3,000 per minute; cassettes are about one-third of this. Important to note that production is only one aspect of costs - distribution can be expensive as well, particularly with regard to manpower.

Strip map

Highly variable costs are dependent upon use of colour and size of printing. Could vary easily from \$ 2.00 to \$ 7.00 per book. Recommend that cost be kept below \$ 12.00 and ideally below \$ 10.00.

Brochures and Booklets

Variable costs would depend on printing sophistication and amount of material. Four colour brochures can range from \$.75 - \$1.50 per copy translating to \$5,000 to \$15,000 dollars for large runs. They are normally distributed free of charge.

4.6.1.2 Site facility costs

Pull-offs

Small pull-off, accommodating 2-4 vehicles, with no support facilities, pit-run fill with 2" of crushed gravel surface, will cost in the order of \$4,000-\$5,000 per site (Al Close, pers. comm. and Jim Thom, pers. comm.). Costs would vary with the amount of fill required as well as permafrost conditions. If the work were done by contract or in difficult terrain it may be in the order of \$7,000-\$10,000 per pull-off.

Major pull-offs, accommodating 5-7 vehicles, with possible access lane leading to small parking area off highway will cost in the order of \$20,000-\$35,000 per site.

Picnic and toilet facilities

Picnic tables installed on site will cost in the order of \$350-\$650 per table depending on design. Pit toilets where soil conditions permit will cost in the order of \$2,500-\$3,500 per unit installed. Chemical or other types of toilets will be more expensive. Garbage containers, with wind and wildlife resistant designs will cost in the order of \$750-\$950 per unit. Site preparation and rehabilitation costs will vary according to local conditions and the type of facilities but an allowance of \$2,500-\$3,500 per site would be a minimum. Grading, clean up, seeding to grass or other native groundcover, rock barrier placement, and any other rehabilitation tasks would be included in these costs.

Dust-free zones

Dust-free zones at major and/or secondary sites would be relatively costly, but would improve safety and the quality of the interpretive experience. The environmental effects of calcium chloride or other treatments should also be considered. Two light applications per summer season would generally suffice, costing approximately \$1,440 per kilometre per application (Al Close, pers. comm. and Jim Thom, pers. comm.). A dust-free zone of 500m on either side of a major pull-off would be adequate.

Permanent dust free zones may also be achieved with chip seal surfacing in the vicinity of major interpretive sites. This alternative is expensive and not tested yet in the Dempster Highway area. Permafrost, freeze-thaw cycles and other potential problems may reduce the feasibility of this choice.

General Maintenance and Operating Costs

All interpretive developments will have an annual operating cost including garbage removal, sign replacement, parking area grading, replacement of crushed gravel surface, waste removal if pump out toilets are used, and site furniture treatments such as picnic table painting. The responsibility for these costs at present would be borne by several different agencies. The magnitude of such costs is beyond the scope of this study since the amount of maintenance will depend on site design and materials used. Refer also to the maintenance constraints section for suggested actions.

TABLE 8. ORDER OF MAGNITUDE COSTS (Shown in thousands of dollars)

SITES	INTERPRETATION	VEHICLE ACCESS	FACILITIES	OPERATION
Major Sites				
Dempster Corner	15-20	20-30	land cost	annual
Tombstone Mountain Viewpoint	7-10	25-35	-	3*
Tombstone Campground	40-60 40 (staffing)	10	65-95	3*
Chapman Lake	24-41	25-35	7-10	3*
Eagle Plains	16-20	20-25	2-10	3*
Eagle Plains Hotel	20-40 (staffing)	-	-	-
Arctic Circle	9.5- 11.5	2.5	2.5-15	3*
Rock River	no cost due to many variables	-	-	-
Border Crossing	8-10	-	10-20	3* (option)
Secondary Sites				
North Fork	2	-	5-10	-
Windy Pass	2.5	7-10	-	3*(option)
Gyr Falcon Eyrie	2.5	4-5	-	-
Sheep Lick	9-12	4-5	-	-
Beaverhouse Mtn.	3	4-5	-	-
Eagle River	4	2-3	3-5	-

* - Operation costs show only application of calcium for dust free zone. More sites could be treated if budget permits.

Note: Interpretation costs include signs, self-guiding trails, displays, platforms and other associated materials directly related to interpretation. Staffing costs are shown where appropriate. Facilities costs include picnic tables, toilets, site improvements, buildings.

SITES	INTERPRETATION	VEHICLE ACCESS	FACILITIES	OPERATION
Pull-offs				
Ogilvie View	-	4-5	-	-
Moose Lake	-	4-5	-	-
Elephant Rock	1.5	4-5	-	-
Ogilvie River	-	4-5	-	-
Richardson Mtn. Viewpoint	possible option not described , located en route to Eagle Plains Hotel.			
Campground Trail Loops				
Tombstone Campground	10-25	-	-	-
Engineer Creek	16-36	-	-	-
Rock River	10-25	-	-	-

* - Operation costs show only application of calcium for dust free zone.

Note: Interpretation costs include signs, self-guiding trails, displays, platforms and other associated materials directly related to interpretation. Staffing costs are shown where appropriate. Facilities costs include picnic tables, toilets, site improvements, buildings.

4.6.2 Interpretive Strategy Phasing and Priorities

This interpretive strategy reflects the views of the many different agencies, groups, communities, and individuals contacted during the study. Communities, private enterprise, and native organizations may have their own interpretive plans and while the study team has attempted to address these initiatives and concerns, no assumptions are made regarding the acceptance of this Strategy. The Strategy is, however, a framework from which many interpretive plans and programs could be implemented by different interests. A summary of views representing the groups and individuals contacted is provided in the Appendices.

It is difficult to establish appropriate phases for implementation of the Interpretive Strategy in the absence of known budgetary resources. We would suggest that full implementation of this strategy be undertaken during a 5 to 7 year program. Similarly, given the near absence of interpretation at present, it is difficult to establish priorities for implementation. The priorities listed below reflect the audience needs as outlined in Section 2, and the proposed strategy is therefore market driven.

The Interpretive Strategy should be implemented in cooperation with the Northwest Territories. The interpretive plan for the the NWT portion of the highway recently completed (Hill 1988), should be used in conjunction with this Strategy.

In spite of the many unknowns the following general recommendations are made:

4.6.2.1 Site Priorities

We will not try to prioritize all of the recommended sites but instead will identify some of these which clearly stand out. The most important sites, together with their relatively high cost of implementation are as follows:

- 1) An information kiosk at Dempster Corner is probably the highest priority as at present it is difficult to find the highway let alone come to terms with its beauty and significance. (Cost: \$35,000-\$45,000 total)
- 2) Upgrading the Tombstone Mountain area is essential if this area is to be promoted as a day trip.(Cost: \$140,000-\$170,000 for all suggested options)
- 3) The Arctic Circle needs significant enhancement if it is to provide the quality of experience that this destination deserves.(Cost: \$14,500-\$25,000 total)
- 4) The Blackstone Uplands area is the richest location - from an interpretive perspective - on the highway. If only one interpretive site north of Tombstone Mountain is considered in the near future, this should be the one undertaken first. (Cost: \$56,000-\$86,000 total)
- 5) Pull-offs, which may or may not be identified as interpretive sites, should be developed immediately as resources permit. Of all the information derived from the audience profile, the demand for more rest and view stops was a paramount concern. Provision of more pull-offs will ensure a more satisfactory journey for the majority of Dempster Highway travellers.(Cost \$4,000-\$8,000 per site)

We would recommend undertaking one major site and 2 or 3 secondary sites or pull-offs per year. This is a reasonable goal which would accomplish site implementation within 5 years.

4.6.2.2 Activities

Personal Interpretation

Personal interpretation by agency staff should be continued and upgraded to a three or four person level beginning in 1989. This would provide valuable opportunities for community residents to become familiar with this field and would provide cost-effective interpretation while sites are being developed.

At the very least, the existing interpretive staffing level should be maintained. These staff perform an invaluable public relations function and as pointed out several times in the report are one of the very best means of interpretation. The audience profile indicates the need for this service and the flexibility in reaching many different audience groups that it entails.

Innovative means of delivering personal interpretive services such as a mobile display van, should be tried as a lower priority pilot project. Such a project could be linked with the staffing levels recommended above.

Mass Media

We recommend development or coordination of one mass media option per year.

The strip map option is recommended as the first choice for printed media since it can be useful for all target audience groups. It could be produced at a reasonable cost, either by government alone or in cooperation with private enterprise. There are already a variety of excellent guide books and some brochures, but as yet no interpretive map.

Printed media productions aimed at special audience groups such as birders or school groups should be developed as a lower priority and as demand justifies the cost.

The dissemination of information and interpretive messages at the Dawson, Whitehorse and Inuvik Visitor Reception Centres should be a high priority. At the very least, available information should be centralized, readily available, and well advertised. As a second phase, the production of an interpretive video or slide-tape presentation could be considered. The present shows at the VRC should be evaluated to determine if they meet information and interpretive needs in the short term.

Information on highway travel, wildlife observation, camping etiquette, and any other management related information should be provided at the Dawson, Whitehorse and Inuvik VRCs. This information could be incorporated into personal and mass media presentations or printed materials. Although it is a high priority, such information should be coordinated with the overall highway management strategy, and may therefore not be completed in the short term..

4.6.3 Summary of Interpretive Strategy Priorities

The Dempster Highway travel experience could, if resources are limited, be improved without a single interpretive sign. The provision of adequate information and an overview

Commercially produced audio tapes, strip maps, community interpretation initiatives, and commercial tour companies could provide a range of interpretive messages without involving capital and maintenance expenditures by government agencies.

Such an approach to a Dempster Highway Interpretation Strategy is certainly reasonable and could help achieve management goals while communicating important interpretive information to tourists.

While the hands-off approach is reasonable, it is not recommended. **The Dempster Highway is unique in North America**, and attracts a traveller with high expectations for a quality experience. For this reason, the interpretive strategy should include establishing an appropriate institutional presence on the highway. The traveller will welcome it and a respect for the environment can be imparted with a more visible government profile.

The interpretive strategy outlined in this report includes a variety of techniques, each of which has advantages and disadvantages. The priorities for implementation must ultimately rest with the agencies, communities, native organizations and the prerogative of government. We recommend that the Interpretive Strategy be implemented in cooperation with the Northwest Territories and that the Interpretive Plan prepared for the NWT portion of the Dempster Highway be used to help coordinate future planning efforts in the Yukon. We recommend that interpretation services on the Dempster Highway be provided at the highest possible standard to reflect not only the majesty of the region, but the sophisticated and highly motivated traveller of the present and future.

5.1 AUDIENCE PROFILE BACKGROUND

5.1.1 INTRODUCTION

The literature review and summary of interviews is included in the Appendix to supplement the description of target audience characteristics in Section 2.0. The reader may use the Appendix wherever more detailed information on a particular study or aspect of the Dempster Highway is required. For example, the Appendix contains a review of surveys completed at the Dempster Interpretive Centre during 1986-1988.

Literature Review of Audience Characteristics- Tourists

(more references cited, this lists those evaluated and annotated)

- .1 Yukon Visitor Exit Survey, YTG, 1987
- .2 Dempster Highway Exit Survey, NWT, 1986
- .3 Dempster Highway Interpretive Program Surveys. 1986+
- .4 Dempster Highway Questionnaire, YTG, 1988
- .5 Characteristics of Travellers to Western Arctic, 1988
- .6 Motoring Vehicle Volumes and Origins, NWT, 1987
- .7 Western Arctic Tourism Strategy, NWT, 1988
- .8 Dempster Highway Planning Project, YTG, 1982
- .9 Market Segment Study, YTG, 1986
- .10 Visitor Exit Survey, Dawson, Parks Canada, 1987
- .11 Visitor Exit Survey, YTG, 1984
- .12 Yukon Travel Market Segmentation Study, YTG, 1986
- .13 Alberta Resident Travel Study, B.C., 1985
- .14 Kluane National Park Visitor Exit Survey, 1986
- .15 Adventure Travel Market Analysis, B.C., 1988

Literature Review of Audience Characteristics- Residents

- .1 Population Composition
- .2 Participation Characteristics

Summary of Individuals, Interest Groups and Agencies Contacted

- .1 Individual Comments, 1988 Talarico Survey
- .2 Individual Comments, 1987 Visitor Exit Survey
- .3 Commercial Tours, Interviews
- .4 Tourism Industry Association
- .5 Klondike Visitors Association
- .6 Receptionists at Dawson Visitor Centre
- .7 Klondike Corners Lodge
- .8 Canadian Parks Service, Dawson City
- .9 Interview with Dave McCaulley
- .10 Eagle Plains Hotel
- .11 NWT Tourism and Economic Development Department
- .12 City of Inuvik, Planning Department

- .13 Interview with John Parker, Ft. Mcpherson
- .14 Mackenzie Delta Tribal Council
- .15 Transportation and Highways, YTG
- .16 Parks and Outdoor Recreation Section, YTG

5.1.2 LITERATURE REVIEW: TOURISTS

YUKON VISITOR EXIT SURVEY, 1987. YUKON BUREAU OF STATISTICS PART 2 : VISITORS TO THE YUKON, BASIC INFORMATION

Party size

The party size on the Dempster was found to be 2.2, slightly less than the 2.8 indicated by the 1986 Dempster Exit Survey.

Origin

The survey found the following origins for people stopping in the Dempster area:

Canada	63%
U.S.A.	29%
Other	8%

These figures contrast dramatically with visitor origins to Dawson, where 30% were of Canadian origin and 61% were American. The origin of visitors to Inuvik reflected the proportions of Dempster travellers more closely, although the percentage of Americans visiting Inuvik was higher.

Mode of travel

The most popular mode of travel on the Dempster was the car or truck combination (36%), followed closely by camperized vehicles(31%). A very small proportion of visitors used R.V.'s on the Dempster(5%), while 20% were on bus tours. The visitors to Dawson favoured bus travel and R.V. modes more, although 26-27% used cars, trucks, and camperized vehicles. Visitors to Inuvik used modes of travel similar to Dempster travellers.

YUKON VISITOR EXIT SURVEY, 1987 PART 3 : COMMENTS AND OPINIONS

The 1987 Visitor Exit Survey provides a wealth of information on visitor attitudes. The information is presented by travel paths, but is also tabulated for the aggregate of all visitors. The findings relevant to the Dempster corridor are evaluated and summarized below. Individual comments were also reviewed and these are highlighted together with comments from interest groups and agencies in the Appendix.

Reasons for Deciding to Visit the Yukon

Important reasons for deciding to visit the Yukon were seeing wildlife in their natural habitat and experiencing the wilderness. The notion of always having wanted to visit the Yukon and visiting the Yukon en route to Alaska was also important, depending on which pathway was taken. Learning about cultural heritage was not a strong reason, either because of lack of information or perceived lack of interesting heritage. The Klondike was mentioned in a specific category, but was not as strong a reason as wilderness or wildlife.

The following specific findings are important with respect to the Dempster:

- one way and two way paths had strongest linkage to wildlife
- one way travellers had strongest interest in cultural heritage, camper/trailer travellers also expressed strongest interest in culture, while R.V. visitors indicated somewhat less interest.
- the people using bikes, or travelling by camper/trailer indicated wilderness as a very strong motivator
- adventure and challenge was noted as very important by bikers
- wildlife was a strong motivator for all modes of travel
- place of origin, in general, did not affect desire to see wildlife or experience wilderness. Europeans and other overseas visitors, however, indicated these aspects as strong reasons for visiting. Americans expressed slightly more interest in native heritage, while Canadians cited the Klondike.
- females were somewhat more motivated by seeing wildlife and native heritage than males

Level of Satisfaction with Activities

All visitors indicated either neutral or better responses in describing their satisfaction with a range of activities. The categories showing highest levels of satisfaction were guided fishing, boating, hiking day trips, backpacking, wilderness sightseeing, visiting museums and historic sites, highway touring and guided hikes and tours. Wildlife viewing was only moderately satisfactory, a fact reflected by every other study done in the Yukon or along the Dempster Highway. The two way travellers showed very high levels of satisfaction with canoe or raft trips and other types of wilderness excursions.

The following specific findings are important with respect to the Dempster Highway:

- one way travellers were very satisfied with day hikes, somewhat surprising since few opportunities are available for the uninitiated hiker
- females were more satisfied with hiking, backpacking and trail riding experiences
- females were more satisfied with native cultural events

Opinions About Visit to the Yukon

Most people felt the scenery and wilderness met or exceeded their expectations. A very significant number felt that the opportunities to view wildlife did not meet their expectations. Many also cited poor roads.

Most people felt that the Yukon offers a wide variety of interesting scenery and unspoiled natural beauty, the opportunity for quiet relaxation and tranquility, and the stimulating challenge of wilderness adventure. Most also felt that interesting museums, historical sites and displays were offered. This section of the survey confirms responses to level of satisfaction with a variety of activities described earlier.

Individual Profile

The 1987 Exit survey profiles all Yukon visitors. While the overall picture differs from those travelling the Dempster, this difference is important. Other studies undertaken on the Dempster provide fairly consistent profiles of the typical Dempster traveller.

For the Yukon in general the following salient points on tourist characteristics were found:

- income levels were high, with significant numbers indicating salaries in excess of \$ 50,000 per annum.
- 49% were likely to take another similar trip in the next one or two years. This high number is reflected in other studies, although turning positive intentions into an actual trip is a different question. Car, truck, and camper/trailer travellers were more likely to want to undertake a similar trip, than were those exiting by air.
- as is confirmed by all other studies, the majority of bus passengers were retired, whereas those travelling by car, camper or truck, were employed.
- more Americans were retired than Canadians
- visitors were well educated, with 49% indicating more than a high school education.

DEMPSTER HIGHWAY EXIT SURVEY, 1986. ACRES INTERNATIONAL LTD.

The exit survey was conducted at the Peel River crossing in the Northwest Territories during the months of July, August and September in 1985. Although the study focussed on traveller attitudes and behaviour relative to their activities in the NWT the results are obviously pertinent to the Dempster study.

The key findings are summarized below:

Place of Residence

Canadian	58%
U.S.A.	38%
Overseas	4%

The majority of Canadian visitors were from Alberta, British Columbia, Ontario and the Yukon. The most significant U.S. origin was Alaska, followed by Texas. Other studies

found different breakdowns for U.S. origins, but the overall origin pattern reflects the 1987 Yukon Exit Survey results to within a few percentage points.

Party Size

Average party size was 2.84 people, suggesting large numbers travelling with family or friends.

Occupations and Income

The large majority of visitors were professional, skilled workers or retired, with small numbers in managerial occupations.

Age

Average age of visitors was in the 35-40 group, while the large number of retired visitors over 55 years of age skewed the sample to an older average age than the general population.

Participation in Activities

The ranking of activities by respondents showed high scores for Camping, Shopping for Crafts, Visiting Museums and Historic Sites and Nature Study. Fishing and Hiking were at a moderate ranking, while surprisingly, Sightseeing and Photography were relatively low on the list. Other studies on the Dempster showed very high participation in photography. This may be due to a discrepancy in questions.

Accommodation

Camping was the most popular form of accommodation.

Destination

The large majority (68%) indicated Inuvik as the final destination. This figure is confirmed by all other studies.

Decision to Undertake Trip

More than 83% of respondents made the decision to visit the NWT at home, while 18% made the decision on the road. This 18% is a significant figure which suggests the need for information and orientation about the Dempster Highway in the Yukon. Most visitors planned their trip 18 months or less prior to departure, with a third making the decision early in the year of travel.

Expectations and Experience

Most people noticed the difference between terrain and vegetation in the Yukon and the NWT, while one third noticed the difference in people. The great majority suggested that their expectations were met, while a significant 17.3% observed that they had underestimated the attractions in the north.

Facilities and Services

Most were satisfied with services and information.

Future Trips

Most people indicated interest in a future trip to the NWT. Many had previously visited the north.

DEMPSTER HIGHWAY INTERPRETIVE PROGRAM SURVEYS, 1986-1988

The Dempster Highway Nature Interpretation Program reports in 1986, 1987 and 1988 produced some interesting statistics and information (McEwen and Staniforth, McEwen and Majiski, PRP Consultants). It is important to note that the surveys addressed only those travellers who stopped at the interpretive centre. The majority of visitors were missed and those who stopped at the centre may have had motivations and interests different from the average tourist profile. Secondly, the survey methods and results were probably not statistically accurate in some cases due to informal sampling procedures. The results nevertheless provide a good insight into one segment of the travelling public and will aid in understanding a major client group for interpretive programs along the Dempster.

Number of Visitors

During the two month survey period in 1986, 1,445 people visited the centre during a 60 day season, although a significant proportion of these may have visited twice. In 1987, 2,452 visitors were recorded, while in 1988, 2,412 people were counted during a longer season of 79 days. The total number of Dempster travellers in 1987 was in the order of 7,130 indicating that as many as 34% of travellers could have stopped at the centre. Repeat visit numbers are unknown, so it is impossible to determine the total number of different Dempster individuals who stopped at the centre. It is safe to assume that it would be something less than 30%, perhaps as low as 20%.

Visitation to the centre was an average of 31 visitors per day in 1986, 33-40 in 1987 and 31 in 1988. In 1988, a total of 459 people participated in other interpretive events along the Dempster Highway.

In 1986, large tour groups accounted for 13% of the visitors to the centre. In 1987 the report indicated that private travellers were generally unaware of the centre. The main tour groups marketing the highway were Horizon and Rainbow Adventure Tours. Smaller groups such as Ecosummer Expeditions also made use of the centre.

In 1988, 18% of visitors were from tour groups, an increase of 5% from 1986. Tour companies in recent years have Rainbow Tours out of Whitehorse, Evergreen Tours from Chilliwack and Swiftsure Tours from Victoria who specialize in birders as clients. Horizon Tours were not mentioned although the company tour manager indicated stops were made. Goway Tours also has used the centre.

The 1986 study reports that the Tombstone campground was 50% full on most nights, whereas the 1988 study suggested 75% occupancy on most nights with maximum capacity a few times during the summer.

Origin

In 1986, visitor origins were 48% Canadian, 38% American and 9% European. As is the case with most other surveys, the results indicated most Canadians were from British Columbia, Alberta and Ontario. California, Alaska, Colorado and New York were frequently mentioned by visitors from the U.S., again at least partially reflecting broad trends in the Yukon. International visitors were from a variety of countries.

The 1988 study indicated a slight decline of Canadian visitors to 43%, with an increase in the numbers of American, German and Swiss travellers. European and other overseas visitors accounted for 14% of the surveyed group. There has been an increase in the European portion of travellers on the Dempster, corroborated by other studies, although the high percentage at the Centre may be due to the motivations of the visitors and not a reflection of total numbers of Dempster travellers.

Motivations and Activities

Most people came to explore and see the sights, or to see the flora and fauna. A significant majority simply wanted to travel north by road and 70% travelled the entire length of the highway. Up to 18% came to backpack and 7% came to fish. The high ratio of backpackers is inconsistent with the average tourist profile in the Yukon, either because more hikers travel the Dempster Highway, or the sample was skewed.

Although not listed below, visiting interpretive centers was a major activity indicated by several other studies in the Yukon.(eg. 1984 Visitor Exit Survey) The large majority of 1986 visitors learned of the interpretive centre from signs on the highway and this method of discovery was indicated again in 1988. The 1988 study suggested that the Dawson Visitor Centre helped provide information about the Interpretive Centre. There are several individual comments which attest to the difficulty of obtaining information and these are outlined in the Appendix.

The activities identified in the 1986 study were:

Photography	88 %
Bird-watching	39 %
Day Hiking	36 %
Fishing	29 %
Backpacking	3 %
Canoeing	3 %

Clearly the motivations and activities of this group of travellers is quite different from the Yukon in general and perhaps not a reflection of the average Dempster Highway traveller. Note that there is a discrepancy between motivation to travel and actual activities. Is this because opportunities were not what they expected, or were certain facilities not provided? The 1988 study suggested that weather plays a significant role in peoples decision to travel the highway. Since a large number were convinced to travel the route only after reaching Dawson, this is not surprising.

Length of Stay

Although no reliable survey was undertaken in 1988 to study length of stay, the report suggests that visitors typically took 3-4 days to travel up the Dempster to Inuvik and back. A significant number travelled as far north as Engineer Creek before returning, taking a total of 1-3 days.

These figures compare to bus tour passengers who generally spend 2 days on the Dempster and an additional one or two days in Inuvik.

DEMPSTER HIGHWAY QUESTIONNAIRE, TALARICO 1988

This study of Dempster Highway travellers was completed during the summer of 1988, under contract to the Department of Renewable resources and as part of a Masters thesis project. It is the most recent Yukon survey available on the Dempster and although the data were only available in preliminary form, the results confirm other studies and provide some additional insights previously not available.

The survey was conducted by distributing 900 questionnaires at the Tombstone Interpretive Centre, of which in the order of 265 were returned. The sample size is reasonable, but there may be a bias in sampling method since particular types of visitors may have visited the centre and there may have been some overlap in questions.

Dempster Highway Awareness

Most people read about the Dempster (35%), or heard about it through word of mouth (21%). 15% were residents.

Travel Party Composition

The large majority (58%) were travelling with a family group, while 18% were with friends. Bus tours accounted for 6.4% and adventure tours for 4.6% of the parties.

The visitors were older than the general population, but younger than the age profile of the average Yukon tourist. Almost 37% were over 60 years of age, while 35% were between 40 and 60. A significant 21.5% were between 26 and 40. There were slightly more males than females.

The largest number of visitors were retired, followed by professional occupations. This reflects other studies on the Dempster. Income levels were generally high.

Activities

Participation in activities is difficult to compare to other studies since the wording of questions can lead to overlap or failure to remember certain types of pursuits. The 1988 survey found that the viewing of landscapes, wildflowers, and wildlife photography were very popular on the Dempster. Hiking was done by almost 9% of the respondents, a figure comparable to most other studies done in the Yukon.

Historic sites were visited by only 5.5%, yet this likely reflects the lack of such opportunities on the Dempster rather than a lack of interest. Visiting communities was important to many people, while 3.4% participated in bird watching.

Most people came to have an Arctic wilderness adventure as a first choice, while many came to drive across the Arctic Circle. A little less than 20% came mainly to see the flora or scenery, although this category may overlap with the wilderness adventure aspect. More than 7% wished to view wildlife, as their first choice, yet the majority would have this as one of the top priorities.

Accommodation

The great majority of travellers on the Dempster stayed in Dawson City, and 96% spent a night on the Dempster. About 70% stayed in Inuvik, a figure which is confirmed by other studies, while almost 60% stayed at Eagle Plains, either in the lodge or otherwise.

Almost 40% visited Tuktoyaktuk, while 12.5% visited Aklavik.

Satisfaction

Most people were very highly or highly satisfied with the trip, and almost 37% said they would probably return, with 30% saying they would definitely return. This positive sentiment is reflected in most other studies, although the actual return rate is lower. Time constraints were cited as the main reason for not returning, as well as the high cost. This latter factor was suggested by tour group companies since exotic places overseas are now available at reasonable comparative costs.

WESTERN ARCTIC TOURISM STRATEGY, WESTERN ARCTIC VISITORS ASSOCIATION, MACLAREN PLANSEARCH 1988

The Western Arctic Tourism Strategy is a secondary source of information since its objectives were to encourage development rather than inventory tourist characteristics. The study objectives were to respond to rapidly increasing visitor volumes on the Dempster and to stimulate economic activity. The Western Arctic Strategy relied on other authors for tourism information, yet several points are relevant to this study.

The Western Arctic is described as the 'true north' with a strong cultural appeal related to the Inuvialuit and Dene. The western Arctic is suggested as the gateway to the attractive natural landscapes of Herschel Island and the North Slope.

Inuvik is the terminus of the Dempster Highway, providing full tourist services and a staging area for further excursion in the Arctic. The report also notes that up to 25% of Dempster travellers do not go all the way to Inuvik. The Dempster Highway, according to this report, delivers 70% of visitor to the Western Arctic, with six distinct market segments:

Rubber Tire - R.V.'s, automobiles, motor coaches, vans
Hunters
Anglers
Adventure Travellers- birders, hikers, canoeists, photographers
Native Cultural Enthusiasts
Air Pleasure Travellers

The origins of visitors to the Inuvik Visitor Reception Centre parallel other findings in the region with Canadians accounting for 45%, Americans for 34% and Europeans for 19%. These statistics reflect the highest percentage of Americans and Europeans recorded in the surveys reviewed.

The report suggests that adventure travel packages are growing at an annual rate of 15-20% in Canada. (a figure quoted in several sources) This figure may be somewhat optimistic for the Yukon since much of the growth has occurred in the south in specific industries such as rafting. Adventure tourism has received much publicity recently, but

more careful evaluation of opportunities in the Dempster corridor are warranted before suggesting that similar growth rates might be seen.

The report predicts that the rubber tire market will grow at 30% per annum for the next 3 years, then expand at 15% per annum in the 1990's. The source for these predictions is unknown. Certainly, travel on the Dempster appears to have steadily increased in the last several years from 5,000 to 7,000 between 1986 and 1988. (Yukon Visitor Exit Surveys) It is not known whether these growth rates will be maintained without special marketing efforts.

The Western Arctic report maintains that the markets are looking for access to the natural and cultural resources of the north. These resources are seen as the landscape, the ocean, native culture and the ability to drive the only highway above the Arctic Circle. Motives for travel on the Dempster Highway are further described in this report.

DEMPSTER HIGHWAY PLANNING PROJECT, DEPARTMENT OF RENEWABLE RESOURCES, MARG CROMBIE, 1982

This resource analysis provides an historical perspective on tourist use and motivations. The tourism survey by Stewart conducted in 1979-80 indicated the most common activities were photography, animal and or plant viewing and fishing. Hiking, canoeing and collecting were mentioned. In relation to 1988, these activities are still important, but now comprise the preferences of a specific market segment since larger volumes of older travellers are now passing through the Dempster corridor with viewing scenery and wildlife and cultural experiences as primary activities.

In 1982 there were 40 commercial tours stopping at Eagle Plains Hotel for a total of 600 visitors, approximately the same level of commercial use as 1988.

Traffic volume at Eagle Plains Hotel in 1982 during June-September was 3,726 including all vehicle types. There are no figures for separating visitors from commercial traffic. In 1982 the peak number of vehicles per day was 45 in August, dropping to 21 per day in September.

MARKET SEGMENT STUDY , YUKON TOURISM DEVELOPMENT STRATEGY, DEPARTMENT OF TOURISM, 1986

This study indicated that bus tour groups constituted the greatest volume of visitors to the Yukon. Although the Dempster Highway is used by a much smaller sub-set of the total number of visitors the study indicates potential growth areas in the various segments. The market segments in order of size were as follows :

Tour bus
Recreational Vehicle Touring
Automobile Touring
Adventure Travel
Fishing
Hunting
Culture/History
Rock Hounding

This market segmentation shows the difficulty in determining demand from such statistics, since visiting historic sites and museums was listed by the large majority of visitors in another study as an important activity.

The market segmentation identifies mode of travel and recreational activity in the same group, and this would help account for the fact that Culture and History are ranked as such a small component.

VISITOR EXIT SURVEY, ENVIRONMENT CANADA, PARKS, 1987

This survey conducted in the Klondike Valley is one of the more recent reports available in the Yukon on visitor preferences. The information was collected to determine visitor numbers and characteristics at the Klondike National Historic Sites. It is particularly relevant to the Dempster study since visitors to Dawson are a significant potential market for attracting travellers to the Dempster if such a strategy is deemed desirable. It is significant, however, that many visitors are on a fixed itinerary and would not likely spend longer in the area even if side excursions to the Dempster were available.

The study found that 86.6% of people visiting Dawson City travelled by private automobile, while 11.8% were on bus tours. More than half of the visitors were from the United States, while people from other countries accounted for slightly more than 7%. The number of Germans and Swiss was quite high.

Yukon residents comprised 3.6% of the visitors and Canadians accounted for the remaining 30%. Visitors tended to spend two to three days in Dawson City. (This length of stay is higher than in some other regions.) A very high proportion of visitors from the Yukon and Alaska were on repeat trips.

Many visitors indicated an interest in the Dempster Highway with some suggesting the Dempster was a destination and others a diversion.

The majority of visitors used the campground and many complained about the lack of campsites. The most popular attractions were heritage features relating to the Klondike, although there is little attempt at interpreting other aspects of the valley at present.

This study reflects previous work in Kluane which showed that travellers in private vehicles tended to be younger and vacationing with family groups. Bus tour passengers were older. Unlike many visitors to the Kluane region, however, most people planned on visiting Dawson as a destination during their trip through the Yukon.

The history of the region was a major attraction for most visitors to Dawson City. Canadian visitors tended to take advantage of exhibits more than any other group, although the size of this margin may not be significant. The visitor reception center was the most popular

attraction, followed by many of the best known local sites. A total of 41% visited the museum and 30% saw the visitor reception centre slide show. Only 7.7% attended interpretive events. Foreign visitors preferred exhibits to tourist events.

A small percentage of people suggested improvements to hiking opportunities, while a significant number (6%) wished to see more interpretation of native culture. Significant numbers of visitors also would have liked to see more working exhibits such as mines, boat tours, or gold panning.

Westours ran at least one bus three times a week through Dawson, while Royal Highway Tours entered Dawson four times per week. Atlas Tours entered Dawson on a more irregular basis. The potential for side trips by tour companies to the Tombstone area has not been fully explored. It would seem there may be a market for this type of excursion, given other studies which indicate a desire by visitors to see tundra.

VISITOR EXIT SURVEY, GOVERNMENT OF YUKON, 1984

Origins

In 1982, 73% of the visitors to the Yukon were from the U.S.A., while 23% were Canadians and 4% were from overseas. The majority of visitors came from provinces closest to the Yukon and from the Pacific states.

Activities

The Visitor Exit Survey, relying on data gathered in the summer of 1982 found that the most popular visitor activities included shopping and visiting museums and historic sites. Those travelling by private vehicle were much more likely to participate in other outdoor recreation activities.

The participation rates for the surveyed visitors in 1982 were:
(note that shopping was done by the majority of visitors, but does not relate to the Dempster situation.)

Visiting museums and sites	44.5 %
Viewing wildlife	26.4 %
Wilderness sightseeing	25.0 %
Fishing	14.5 %
Festivals and events	13.0 %
Day hiking	7.7 %
Boating	6.8 %
Guided hikes	2.9 %
Backpacking	2.1 %
Trail riding	1.9 %
Hunting	0.8 %

The visitors who were travelling by tour bus showed quite a similar activity pattern, yet participation in the less popular pursuits was more marked:

Museums and sites	54.8 %
Wilderness sight-seeing	21.4 %
Viewing Wildlife	18.6 %
Boating	4.0 %
Guided hikes	1.9 %
Trail rides	0.9 %
Fishing	0.9 %
Hiking	0.9 %
Hunting	0.6 %

Day excursions were purchased by 5% of the visitors, while 2% bought wilderness tours and 1.3% flight-seeing tours. 2% rented canoes. A large percentage (38%) of visitors went to the Visitor Reception Centre in Whitehorse, an interesting point relative to the Dempster since a significant percentage of visitors decide to travel to Inuvik after arriving in the Yukon.

These figures indicate preferences for the average visitor, as well as special groups, according to type of transportation mode. Hunting is very low on the list, but this is possibly because visitors who came to the Yukon specifically for hunting may not have been surveyed. The visitors surveyed were most satisfied with day hiking, trail riding, and wilderness sightseeing activities. They were most dissatisfied with wildlife viewing and fishing.

Of particular interest in the 1982 survey was the fact that 5% of visitors missed seeing tundra. They had expected to see it- a fact which may support the promotion of half or full day side trips to the Tombstone area on the Dempster. A full 21% didn't see the scenery they expected, a response which could also be changed with improved awareness of the Tombstone area.

Motivations

In 1982 a high percentage of people travelled to the Yukon out of personal interest or the 'lure of the north'. Many visitors passed through the territory simply because it was on the itinerary, while a small percentage responded to promotional efforts.

YUKON TRAVEL MARKET SEGMENTATION STUDY, TOURISM YUKON, GMA RESEARCH GROUP, 1986

The study suggested that the high potential market for visits to the Yukon consisted of one million people in Canada and ten million in the U.S.A. Up to 42% of past visitors are interested in returning in five years, while 2% plan on returning the next season. Scenery is considered the most appealing aspect of the Yukon.

Thus study identified four types of visitors called:

Urban Escapers	30%
Outdoor Sportsmen	22%
Comfort Seekers	22%
Senior Tourists	13%

All of these groups were seeking scenery and open spaces, with mentions of camping, photography, fishing and adventure.

Urban escapers drive and camp on well planned vacations. This group does not generally purchase tour packages. They are well educated with above average incomes.

The outdoor sportsmen hunt, fish, canoe and engage in photography and sight-seeing. They do not generally purchase tours. In contrast the comfort seekers don't like the travelling and tend to purchase organized tours. They prefer safe environments.

The senior tourists like driving the back roads and learning about their destinations. They like to 'see and do' and are not limited by time. This group travels by car and bus.

ALBERTA RESIDENT TRAVEL STUDY, MINISTRY OF TOURISM, BRITISH COLUMBIA, 1985

This study reveals interesting trends and profiles relevant to the Yukon and indirectly for the Dempster corridor. British Columbia tries to attract visitors for many of the same reasons as the Yukon and some of these data are pertinent since a large percentage of Canadian visitors to the Yukon and the Dempster are from Alberta. The study identified three categories of users that could by inference be expected to visit the Yukon. These are:

Family Educational Travellers

- married, with children
- like visiting historic places

Grandma and Grandpa on the Go

- like to travel to see natural wonders
- median age is 55
- retired, married or widowed

Young Family Travellers

- married with young children, median age 32
- pursue traditional activities such as lake and stream fishing
- enjoy hiking and nature trails

These visitor profiles are typical of Canadians and reflect national trends. Senior citizens are travelling more, and are demanding quality experiences linked with nature, history and culture. Young families, a product of the familiar 'baby boom' are travelling as a unit more and more, and are seeking opportunities where children can participate.

Albertans enjoy beautiful scenery, nature, wilderness and fishing. Of those surveyed, 74% enjoy swimming, 59% hiking, 46% fishing, 21% canoeing, 20% cross-country skiing, and 17% hunting. This ranked preference list gives some indication of what Albertans might seek in the Yukon.

KLUANE NATIONAL PARK VISITOR SURVEY, 1986

This study concentrated on highway and bus tour visitors. It is an important reference making any demand projections related to highway corridors since the data are relatively recent and the questionnaire was comprehensive. Several findings are relevant to the Dempster Highway planning study.

Bus tour visitors were found to be older, retired and constituted the larger segment of visitors. This group tended to be passing through en route to or from Alaska. Those people travelling in private vehicles were younger, with families, and tended to spend more time in the region. Well educated professionals were prominent. Older visitors travelling in private vehicles tend to have more time to enjoy accessible recreation facilities. The private vehicle travellers were far more likely to seek out information and interpretive opportunities.

The visitors were predominantly from the United States, followed by Canadians and Europeans. Vacationers, (those with planned stops in the Yukon), spent more time in the area than those merely passing through to visit Alaska. The majority were engaged in passive activities such as wilderness sight-seeing, photography, and interpretation, where provided. A significant motivation for vacationers was simply 'seeing the area'.

The following activities were mentioned by visitors to Kluane:

Wilderness sight-seeing	46 %
Photography	24 %
Viewing Wildlife	21 %
Going to visitor centers	30 %
Fishing	9 %
Visiting museums	8 %
Hiking and day trips	7 %
Nature walks, guided walks	6 %
Camping	3 %
Other; boating, hunting, etc..	5 %
All other mentions	4 %
None, just passing through	22 %

ADVENTURE TRAVEL MARKET ANALYSIS, OUTDOOR RECREATION COUNCIL OF BRITISH COLUMBIA, 1988

The report contains statistics pertinent to Dempster Highway planning. Growth in the adventure sector is expected to be 15-20% over the next 5 years. Although the total volume of adventure travel is modest, it can have a significant local and regional impact. The study suggests that about 35 million North Americans are in the market for adventure trips and that 35% of Canadians want vacations involving adventure, outdoor activity and excitement.

The study reaffirms Thorne, Stevenson, Kellogs earlier prediction that there is increasing segmentation of the tourism market, and that planners must anticipate the needs of a greater variety of travellers. There is a trend away from consumption to "meaningful, learning experiences." (Note also that recent tourism studies tend to quote one another, and the source of the original information is often obscure!)

This study identified the following adventure activities in order of importance :

Walking
Canoeing/Kayaking
Rafting
Culture
Nature Observation
Bicycling
Horse Riding
Exotic Transportation

Day trips and overnight or multi-day excursions are included in the analysis. The study also noted the increase in long distance marathon events, in both winter and summer. The strongest growth potential in British Columbia was considered to be in cross-country skiing, back-packing, rafting, and trail riding, followed by nature observation and canoeing/kayaking. Nature tours will be more popular with the 35-55 age group. The greatest future growth was felt to be in the area of "soft adventure", with creative programming to suit the aging "baby boomers". Soft adventure means activities that provide new experiences, but are not necessarily physically demanding.

The study observed that as travellers become more sophisticated in the future there will be a shift towards self-organized touring, that includes the incidental purchase of adventure travel products. This potential trend has a direct bearing on planning for interpretation along the Dempster Highway corridor.

Adventure travellers tend to be younger than the rest of the population, like to have new experiences and try to visit museums where they are available. These people often take longer trips with ample planning time involved. Single sports-minded males tend to take shorter trips, and seek active participation. Package trips of two to three weeks are common for young wage earners.

The study made the interesting observation that resident adventure travellers usually make decisions based on word of mouth recommendations, or magazine articles. This group could be called "entry level" adventurers. Committed adventure travellers were identified as affluent and prone to follow trends as they developed. Expert adventure travellers are interested in developing skills and wish to refine their knowledge.

The modern participants in the traditional activities of hunting and fishing are willing to travel great distances to find wilderness. These males are now frequently travelling with their mates and these partners are frequently interested in nature observation.

The Yukon adventure travel market has been studied by the Department of Tourism and in 1986 the following activities were listed as currently offered:

Canoeing
Fishing
Hiking/Trekking
Wildlife Photography
Cross-country skiing
Guided back-packing.

Potential growth areas were suggested to be:

Mountain Biking
Walking
Rafting
Canoeing
Ski mountaineering.

Both of these assessments apparently miss the growing interest in adventure travel aimed at participation in heritage and cultural interpretation or life-style experiences, such as historic routes, events, or learning how to live off the land.

5.1.3 SUMMARY OF TOURIST, INTEREST GROUP AND AGENCY VIEWS

INDIVIDUAL COMMENTS, 1988 SURVEY BY TALARICO

The comments received from this questionnaire were detailed and very informative. The key concerns and comments are paraphrased below:

- "shortage of large animals,
- appreciated the nature centre at Tombstone,
- Dempster is beautiful and wild-feeling,
- we were unprepared for overwhelming Yukon Wilderness and the lack of access to it. We became very aggravated when we discovered it is next to impossible to venture off the highways for hiking or photography. We are only advocating a system of simple trails. We couldn't really explore the land once we got there,
- nothing to do between Whitehorse and Dawson. It was impossible to locate off-road places to stop and do something,
- At Dawson we tried to get good maps and information about the Dempster, but there wasn't any. They didn't have any topographic maps, and only one poor brochure on the route. We were told we could only get information in Whitehorse,
- once the Dempster is advertised, the flood of visitors will be beyond the capacity of the environment. Already permanent scars on the land from development. No large wildlife to be seen,
- the Dempster should be maintained, not improved,
- one visitor noted mistakes in spelling and information on the signs,
- the lack of information at Tombstone and along the Dempster was a fundamental failure. It is a mistake not to open the Tombstone campground until 11.00AM. The only pamphlet came from the NWT,

- could you have some marked trails and information,
- if development eliminates the wilderness experience I will not return,
- because of lack of info and lack of access the drive is long and boring."

INDIVIDUAL COMMENTS, 1987 VISITOR EXIT SURVEY

Some of the most revealing information is found outside the realm of statistics in the individual comments of travellers. There are several common themes such as weather, road conditions, scenery, wildlife, gasoline prices, services and other. The comments below are representative of the average as well indicating some unique perspectives of interest to the Dempster interpretive strategy.

A selection of comments from the 1987 Visitor Exit Survey follows:

- "the park system is terrific one of the major assets of Yukon,
- I have greatly enjoyed the scenery. Wish there were more wildlife visible from the roads,
- better roads and signs,
- you have a beautiful territory.I hope to come back and spend more time,
- I enjoyed my trip. Beautiful scenery, moose, bear, otter, lakes and rivers are abounding with interesting resort area,
- superb wilderness vistas are the drawing card,
- the roadsides are rather cluttered with litter,
- I'll be back to spend more time and try some hiking ar riding,
- should have information available before you start the trip,
- great hiking, Tombstone Range should be a park, territorial or national,
- I feel that promotion of the Dempster has not been done in the past,
- frequency of scenery, wildlife not as great as expected, particularly bird species,
- fishing access or tips could be made more clearly known,
- the truck drivers scared me on the bad roads,
- Yukon campsites and roads are well maintained,
- National Parks should receive funding for guided nature hikes and other interpretive activities,
- money should be spent to pay interpreters to give free guided nature walks to public,

- not enough native crafts,
- very good except for dust,
- the map issued by YTG was inaccurate and lacked any detail that would have been helpful. A general lack of information on Gov't campgrounds,
- northern Yukon interesting and trip to Inuvik was an experience. A real learning experience. Enjoyed Dawson most of all,
- roads, hard to make stops in narrow stretches, many pull-outs not suitable for large vehicles,
- rest areas very infrequent, generally poor condition,
- good signs to let you know about things on your way,
- took 4-5 months to receive information from Yukon,
- lots of signs to indicate what there is to do, want to come back and see more,
- points of interest are well done, helps in telling my photo story,
- more info on where to spot wildlife would be nice, some more signs explaining which mountain is where, and some signs explaining vegetation would help,
- I find the place full of heritage, wish had more time to look around,
- please pave the Dempster, and I will come back to drive it,
- it was the slide show in Whitehorse that made us take the Dempster. Information centres are excellent,
- the only wildlife were either birds or squirrels. Some signs for areas high in wildlife could be posted,
- Dempster Highway, Top of the World and Skagway, beautiful scenery and all entirely different,
- would not like to see it over developed,
- all efforts should be taken to conserve wildlife,
- need more road signs explaining the geological features,
- stunning beauty, sorry about the burn areas we passed through,
- not particularly interesting, but there may be things to do and places to see I was not made aware of,
- your flowers are beautiful, a real attraction,
- need more pull-off sites for picture taking and flowers,

- it gives one a true picture of a frontier. It is interesting to learn how people survived under these conditions,
- the Dempster Highway was an impossible dream come true,
- have not seen native culture on the bus tour,
- found too much garbage in the Dempster area,
- need more info about side trips for the adventurous."

COMMERCIAL TOURS, INTERVIEWS WITH DRIVERS AND MANAGERS

Atlas Tours and their primary Dempster Highway client, Horizon Tours, were selected to obtain information on the views of commercial groups. Mr. Jules Morgan who drove buses for 7 years on the Dempster was interviewed, as well as Mr. David Littlejohn, manager of tours for Horizon in Toronto.

Horizon passengers are sometimes disappointed with photo opportunities at the Arctic Circle sign and are usually disappointed with Inuvik, commenting often on litter. They expect to see a native village en route and since the tour by-passes Ft. Mcpherson and Arctic Red River, the brief stop in Tuktoyaktuk with its oil exploration staging function is the closest stop resembling a native village.

Horizon clients frequently wish information on wildlife, flowers and weather or seasons. Many ask questions about native life, perhaps reinforced by the fact that they perceive a lack of contact with native culture. Escorts provide a full outline of the points of interest along the route. The existing signs are well received, but more would be appreciated. The lack of a Mad Trapper sign is noted.

The northbound trip itinerary follows a fairly set sequence:

Dawson-Klondike Corners	Stop at Klondike Corners
Tombstone	Stop at interpretive centre and/or stop at pull-out at pass
Blackstone	Identified as excellent stopping point but is perceived as poor pull-out
Windy Pass	No stop at present
Engineer Creek	Lunch stop, barbecue. Since barbecue preparation takes half an hour, a short 10-20 minute easy walk with interpretive information would likely be well received.

Ogilvie River	No stop at present. A stop between Engineer Creek and Eagle Plains would be used.
Eagle Plains	Stop at ridge-top pull-outs. Would benefit from interpretive signs.
Eagle Plains Hotel	Overnight. Lots of spare time, would certainly take advantage of interpretive opportunities.
Arctic Circle	One highlight of trip, half hour stop. People disappointed in group photo opportunities at sign.
Rock Creek	Stop if wildlife.
NWT Border	Half-hour stop, coffee, pictures Often windy and no one gets out. Consider a pleasant stop.
Rat Pass	No stop
Peel River	Stop at high point over-looking river. Photography.
Ft. Mcpherson	Usually do not stop.
Mackenzie River	Stop.
Campground/Ft. Mcpherson	Lunch stop. Lack of tables for lunch.
Inuvik	Two nights in Inuvik. Fly to Tuktoyaktuk. Fly out to Yellowknife.

KLONDIKE VISITORS ASSOCIATION,

Several interesting points and perspectives emerged from the meeting with this group:

- R.V. traffic will be limited by road conditions,
- promotion must accurately reflect road conditions,
- better borrow pit guidelines are needed,
- there is good potential for hut to hut recreational developments, particularly to attract the European market,
- people who travel up the Dempster usually return to Dawson for groceries or accommodation,
- most people perceive the Dempster as a wilderness. The Arctic Circle is an attraction,
- there is a potential to attract Alaska bound travellers back to do the Dempster another year,
- Europeans want to see wilderness. There is a growing European clientele using the northern rivers. Many Europeans fly to Vancouver, then rent R.V's to travel north,
- visitors are disappointed in wildlife viewing opportunities,
- Milepost is the most common source of information,
- access for commercial ventures along the Dempster is very important,
- surveys tend to underestimate the number of cyclists,
- the average age of the visitor seems to be dropping,
- many people travel part way up the Dempster,
- there should be interpretive or rest stops about once every hour,
- there should be readily available orientation to the Dempster available in Whitehorse. There should be improvements to Dempster orientation in Dawson,
- there should be Dempster orientation or signs at Klondike Corners,
- Inuvik usually a disappointment.

CANADIAN PARKS SERVICE, DAWSON CITY, LINDA BROMAR

Linda Bromar is the director of visitor services in Dawson for the Canadian Parks Service. Her comments were:

- the road scares many people away from the Dempster, particularly due to perceived lack of services,
- there is some potential to attract people up the Dempster as a side trip, for example to Tombstone,
- the slide show at the museum gives people a good understanding of the Dempster,
- Dawson is usually visited again after people have travelled up the Dempster,
- most people comment on the condition of the road, the weather and wildlife,
- the oil drums on Eagle Plains should be removed, they are an eyesore,
- the German language receptionist at the Dawson VRC is busy,
- the Japanese tourist is not very visible yet, although promotion efforts have been made,
- Germans are travelling in bus tours now,
- there has been a 10% growth per year to Parks Canada sites,
- bus tour passengers don't have the time to participate in many activities,
- the interpretive program at Tombstone is excellent,
- people enjoy the Keeper of the Arctic Circle,
- visual displays are important, but personal contact is the best,
- there has been significant growth in walking tours,
- photo panels with little caption are very effective,
- visitors are very interested in historic personalities, they are curious about disasters, or seedy characters,
- about 100 bus tours per year come through Dawson,
- approximately 500-700 people per year ask about the Dempster,
- NWT booth opened late this year, so effectiveness not known,
- a slide show on the North Slope park has been discussed, for presentation in Dawson.

INTERVIEW WITH DAVE MCCAULEY

Dave McCaulley lives on the Dempster Highway and maintains the YTG campgrounds at Tombstone and Engineer Creek. His perspective on use and behaviour is invaluable:

- many people rank the Dempster with Denali National Park,
- people complain about the lack of access to fishing,
- people are disappointed more wildlife is not seen,
- there is a need for more pull-outs,
- Swift Tours, catering to birders use the Tombstone campground,
- there is considerable day use at Engineer Creek since it is used as a stop by bus tours (Horizon Tours use this stop),
- Tombstone campground is usually only 50% filled,
- need more frequent campsites.

EAGLE PLAINS HOTEL , STAN MCNIVEN

Stan McNiven, the manager of Eagle Plains Hotel is very knowledgeable about the Dempster Highway and the people travelling it. The comments are interesting:

- people who stay at the lodge are 50% Canadian, 30% American, 20% European (guest book estimates),
- use of the lodge has increased at 15% per year, catering to bus tours and passenger car travellers without camping gear, 80% of lodge clients stay there both ways. There is a 75% occupancy rate in July, for 33 rooms. The existing R.V. park can handle 50 at capacity,
- hotel summer season mid-June to first week of August,
- most people ask about food and gas, then about native life on the route,
- there is a high potential for interpretive talks or programs at Eagle Plains Hotel, a full house could be expected,
- the Keeper of the Arctic circle is well received and is a trip highlight for many,
- Eagle Plains Hotel is considering helicopter tours, for example to the Peel River, Aberdeen Canyon area,
- most people had a very specific objective of travelling the Dempster, many are now returning for a second visit with friends,

- most visitors are well educated,
- birders tend to use commercial tours,
- the Arctic Circle is a major attraction on trips,
- bus tour cater to the 60 plus group,with very small percentage travelling with children,
- visitors are interested in plant and animal life, very few have an awareness of native use or culture in the area,
- Inuvik is perceived as a working town with little to do,the campground condition is considered 'less than great',
- many people feel a trip to Eagle Plains or the Arctic Circle and back to Dawson would have been preferable,
- more pull-outs needed at designated stops,
- short trails are needed,
- there is potential for developing a shoulder season in the fall, catering to photographers,
- travellers like to stop about every 90 minutes,
- multi-lingual signs in some locations should be considered,
- local people (Yukoners or NWT residents) are more prevalent during hunting season,
- there were about 25 groups who travelled down the Eagle River to Old Crow, Eagle Plains is a staging area for these people
- cycling is growing in popularity,
- dust free zones should be considered.

NWT TOURISM AND ECONOMIC DEVELOPMENT, JOHN CULFORD, JOHN CORMIER, DICK HILL, FRANK PILAK

- Dempster is seen as main resource to bring people to Inuvik,
- of 9,000 visitors per year, 80% arrive via the Dempster,
- there is 5% repeat visitor ratio,
- there are perhaps 200 sports hunters annually visiting Inuvik,

- after Peel River, people just want to get to end of road,
- Ft. Mcpherson has only recently begun to plan for welcoming tourists into town,
- commercial adventure travel companies such as Antler Tours are providing full packages from Inuvik, and are doing well,
- there are a few Japanese tourists showing interest in the region now,
- some visitors require language assistance,
- the strongest attraction of the Dempster is that it is a wilderness highway,
- a regional tourism development plan was prepared by McClaren Plansearch, including ideas for the Dempster (This is reviewed elsewhere),
- NWT is in the process of preparing designs for highway signs, following a theme of braids and triangles to help interpret,
- the NWT is planning to prepare an audio cassette tape for interpretation of the Dempster,
- the large parks such as Herschel and the North Slope are a very significant attraction to people in Inuvik. Plans are in place for Campbell Hills Territorial Park,
- campground attendance at existing government sites is low,
- there is a need to lead people along the highway from the Arctic Circle,
- there should be co-operation between NWT and the Yukon to ensure continuity of information and to avoid unnecessary duplication of information,
- the NWT is now collecting resource information to assist with developing interpretive themes.

CITY OF INUVIK, PLANNING DEPARTMENT, MR. TOM DETLOR

- the theme for attracting visitors to Inuvik is "Follow the Dempster to Inuvik" , "Canada's wilderness highway",
- there is a proposal to expand the museum in Inuvik,
- there is an active information booth in the summer,
- attendance at Happy Valley campground is up 78%,
- visitors view the scientific labs at the research station,
- people are increasingly aware that Inuvik is not on the coast, but that tours to Tuktoyaktuk are available,

- hotels are full all summer.

FT. MCPHERSON, JOHN PARKER

- want access to Dempster traffic,
- ways to encourage people past Eagle Plains are needed,
- a new hotel expansion with 9 rooms is planned, and the cafe is open 7 days a week to 11.00 PM,
- a small campsite will be created in Ft. Mcpherson, by the river and will be used by canoeists,
- meeting place to interact with elders,
- the local themes are Gwich'in culture, Dawson patrols, Mad trapper, battle sites, connection to Herschel, H.B.C.,
- there are boat tours available on the Peel River, a pick-up service is also available for canoeists on the Peel,
- there are plans to move an historic log house to a high profile location, convert to information centre,
- signs will be placed around town to help identify features,
- will designate RV parking areas.,

MACKENZIE DELTA TRIBAL COUNCIL, ARCTIC RED RIVER, JANE HANSEN

- tourism could be based on a theme integrating hunting, trapping and critical wildlife habitat,
- training and financing are the issues,
- local control for income generating opportunities,
- perhaps highway should be shut down during migrating times,

5.1.4 LITERATURE REVIEW: RESIDENTS

About 14% percent of visitors to the Dempster Highway are residents of the Yukon. It is therefore useful to understand their motivations and outdoor recreation behaviour relative to an interpretive strategy. Travel on the Dempster is often directly related to outdoor recreation, and the interpretive strategy will be improved if these activities are understood.

Population Composition

The Yukon population is youthful compared with the rest of Canada with only 2.7% over 65 years old. Married couples constitute the greatest part at 70%. The population has a higher male component, due to the employment opportunities in construction and resource industries (Burton, 1978). The recreation profile produced by Burton possibly does not reflect native population characteristics since the sampling did not specifically attempt to reach the native communities.

The 1987 results of the Yukon Bureau of Statistics support the Burton report. The population is still youthful, with a median age of 29.2 and 22.6% of the population found in the 25-35 age categories. There is also a bulge of young children in the 0-4 and 5-9 age categories, and as shown in later comments by residents, the needs of families with young children will have an increasing impact on outdoor recreation facilities close to communities.

The largest sector of the work force is in government, followed by wholesale/retail trade, and transportation/communication. Accommodation and 'other services' make up a large percentage with the mining/exploration and manufacturing/construction sector accounting for very significant employment. These statistics are linked to the kind of outdoor recreation activity sought by various groups of people, but generalizations are not accurate. For example, studies in the province of British Columbia indicate that employee preferences in resource towns are heavily in favour of fishing and hunting activities, with other pursuits present but not dominant.

The government sector in the Yukon may have more in common with typical urban recreationists with a relatively larger percentage seeking non-consumptive or interpretive activities. These gross trends could be kept in mind during interpretive planning in the Yukon and along the Dempster Highway in particular, but there will be exceptions to every projection.

Participation

1. Yukon residents participate in outdoor recreation activities more frequently than other Canadians, even though the absolute levels of participation are low. For those who do participate, the average frequency is once per month. Yukoners enjoy taking vacations more so than their southern counterparts, and 25 % enjoy taking their major vacation in the Yukon, with a large proportion taking secondary holidays in the territory (Burton, 1977).
3. Winter recreation is enjoyed by fewer people, but those who do participate tend to do so intensively. Levels of winter recreation activity are higher in the Yukon than in the rest of Canada (Burton, 1977).
4. Yukoners are highly mobile (Burton, 1977).
5. Resident recreation use is spread out over the four seasons, and even though the actual number of participants is moderate, the number of user days may often result in intensive use of recreation resources. Resident recreation is more diffused than tourist use, since visitors are in the Yukon during a more limited summer and fall season.
6. Resident use may be characterized in many different ways. One method is to look at the type of group that participates. Families tend to go tent camping, boating, driving for pleasure, picnicing, or visiting historic sites, while groups of friends tend to go hiking, mountaineering, hunting, trail bike riding, fishing, or canoeing. People

sometimes travel alone for hiking, fishing, or sight-seeing, while organized groups make up a small percentage who go tent camping, mountaineering, or on nature or heritage interpretation trips (Burton, 1977).

7. Residents may participate in outdoor activities for recreation, cultural, or life-style reasons. The lines between these types of pursuits is sometimes unclear (Paish, 1985).
8. There is a general trend of increasing participation in outdoor recreation activity in the Yukon. Some activities are becoming rapidly more popular, while others are stable or showing slow growth. Traditional pursuits such as fishing are maintaining high participation rates, although there are relatively more people now pursuing canoeing, skiing, rafting and other so-called adventure activities.

As young married couples raise children, they are likely to replace more vigorous pursuits with less demanding ones. For example, as individuals move through their life-cycle, they may switch from mountaineering, to hiking, to day hikes and interpretive walks with their young children.

The review of activity preferences during the last ten to fifteen years is an important step in determining the present and likely future demand for resident outdoor recreation and interpretation activities. The outdoor recreation studies completed during the past decade have identified several aspects of outdoor recreation facilities that residents feel could be improved by development or management. The recent Yukon 2000 project and other broader forums have also clearly shown that residents are concerned about outdoor recreation and wish to see improvements in access, information, and facilities.

Burton's 1978 study identified the need for good trails, and trails in poor condition were considered an issue. Some residents wanted more facilities with better access, while others desired less access. These opposing views present a management challenge to provide opportunities for both types of user groups.

The Burton study indicated that over 50% of the survey population had fishing tackle, tent/camping gear, and hunting equipment. This level of equipment ownership clearly indicates an expressed demand for facilities and access linked to these activities.

The study cited lack of information, and inadequate access as two key shortcomings, at least in 1978. The study showed that 24% wanted better camping facilities (this demand may now be partially fulfilled), 9% wanted more and better trails, 7.5% wanted better road access and 5.6% required better boating facilities. This information is dated, but many of the themes are repeated in later studies and are therefore still relevant.

The 1985 study by Paish identified a number of resident desires, including the provision of interesting programs for nature appreciation, and the enhancement of stops of interest.

The 1987 Yukon 2000 project included citizens comments that improvements in outdoor recreation facilities were needed. Specifically, participants in the public meetings wanted to, "improve access to fishing locations, provide better access to and public education about our wilderness and wildlife resources, and safeguard the Yukon natural environment, and historical and archaeological heritage."

The Yukon 2000 project suggested that facilities and attractions are needed in order to maintain the interest of tourists. A number of specific requirements were identified,

including more interpretive signs, walking tours along highways, native cultural activities, museums, and the development of short hiking trails.

The 1985 Parks Canada Caucus indicated that the cultural and heritage conservation of the Yukon should be emphasized, and that native people be involved to a greater extent in the planning, management, and interpretation of the natural and cultural heritage.

The 1986 Select Committee of the Legislature on Managing Our Natural Resources found that Yukoners were concerned about road access and the impacts on wildlife. Some felt there should be restrictions on ATV use, and hunting restrictions along road corridors.

There was an expressed interest in developing more rest stops for day use at locations with scenic, historic, or natural environment values. There was also mention of restricting motor boats on lakes where feeder and exit streams were not present.

The select committee found that the public:

- need more hut to hut hiking, skiing facilities,
- need more nature interpretation, viewing facilities,
- care should be taken when making access easier, since this may reduce satisfaction for some participants,
- need more day hiking trails, with nature interpretation along the way,
- need more day use picnic areas, and interpretive sites,
- do not need more campgrounds,
- need better mapping and information on trails to improve access opportunities,
- need self-guiding interpretive trails.

These desires may only represent the vocal minority who perceive that their particular needs could be better met. These desires do, however, fall in line with trends throughout Canada, and should therefore be treated seriously. The traditional activities of hunting, fishing, camping may already be perceived as quite adequate without further government involvement, yet these recreationists remain a very large user group.

Concerns about "too easy access" and "over development", mechanized use and its impacts on wildlife, and development where local communities wish to avoid outside use of resources are continuing issues. These issues may temper attempts to satisfy the apparent demand for facilities and access.

More families with young children can be expected to seek outdoor recreation activities and interpretation, while the male 20-40 year age class will remain a dominant user group in many areas. The Yukon may not be subject to the "aging population" phenomenon in the rest of Canada since the work force is characterized in part by young people staying a relatively short period in the Yukon.

5.2 INVENTORY BACKGROUND

5.2.1 List of Some Rare Vascular Plants of the Yukon Found in Dempster Highway Corridor*

*Braya glabella*¹
Braya humilis ssp. *arctica*¹

Calamagrostis purpurascens var. *maltei*
*Calamagrostis robertii*²
Caltha natans
Carex chordorrhiza
*Carex holostoma*¹
Carex livida
Carex rariflora
Carex williamsii
Chrysosplenium wrightii
*Claytonia arctica*¹
*Claytonia ogilviensis*¹
*Cryptogramma stelleri*¹
*Cypripedium calceolus*¹
*Cypripedium guttatum*¹

*Draba ogilviensis*²
Draba paysonii

Eleocharis uniglumis
Epilobium arcticum
*Erigeron mexiae*²

Gymnocarpium robertianum

Juncus triglumis

Luzula groenlandica

Oxytropis arctica var. *arctica*¹
Oxytropis nigrescens var. *lonchopoda*²

*Papaver mcconnelli*¹
*Papaver walpolei*¹
Pedicularis lapponica
Phacelia mollis
Phippsia algida
*Poa porsildii*²
*Podistera macounii*¹
Potamogeton foliosus var. *foliosus*
Potamogeton praelongus

Salix chamissonis
*Salix fuscescens*¹
Saxifraga aizoides
*Scirpus tabernaemontanii*¹

Silene uralensis ssp. *ogilviensis*¹
Smelowskia calycina var. *porsildii*
*Stellaria dicranoides*¹

*Thlaspi arcticum*²

Woodsia ilvensis

* Taken from Douglas et al, 1981, Some rare Vascular Plants of the Yukon

1. Occurring in unglaciated parts of Yukon

2. Endemic to Yukon

5.2.2 Checklist of Dempster Birds

Taken from Frisch, 1987, Birds by the Dempster

Common Loon
Pacific Loon
Red-throated Loon
Red-necked Grebe
Horned Grebe
Tundra Swan
Brant
Canada Goose
Greater White-fronted Goose
Snow Goose
Mallard
Northern Pintail
American Wigeon
Northern Shoveler
Green-winged Teal
Blue-winged Teal
Redhead
Ring-necked Duck
Canvasback
Lesser Scaup
Greater Scaup
Common Goldeneye
Barrow's Goldeneye
Bufflehead
Oldsquaw
Harlequin Duck
White-winged Scoter
Surf Scoter
Common Merganser
Red-breasted Merganser

Black-billed Magpie
Northern Goshawk
Sharp-shinned Hawk
Red-tailed Hawk
Swainson's Hawk
Rough-legged Hawk
Golden Eagle
Bald Eagle
Northern Harrier
Gyrfalcon
Peregrine Falcon

Great Horned Owl
Snowy Owl
Great Grey Owl
Boreal Owl
Northern Hawk Owl
Short-eared Owl

Common Nighthawk
Belted Kingfisher
Common Flicker
Yellow-bellied Sapsucker
Hairy Woodpecker
Three-toed Woodpecker
Black-backed Woodpecker

Say's Phoebe
Alder Flycatcher
Hammond's Flycatcher
Western Wood-Pee-wee
Olive-sided Flycatcher
Horned Lark
Violet-green Swallow
Tree Swallow
Bank Swallow
Cliff Swallow
Gray Jay
Common Raven

Black-capped Chickadee
Boreal Chickadee
American Dipper
American Robin
Varied Thrush
Hermit Thrush
Swainson's Thrush
Grey-cheeked Thrush
Mountain Bluebird
Northern Wheatear

Merlin
American Kestrel
Water Pipit

Blue Grouse
Spruce Grouse
Ruffed Grouse
Sharp-tailed Grouse
Willow Ptarmigan
Rock Ptarmigan
White-tailed Ptarmigan

Sandhill Crane
Sora
American Coot
Semipalmated Plover
Killdeer
Lesser Golden Plover
Surfbird
Common Snipe
Whimbrel
Upland Sandpiper
Spotted Sandpiper
Solitary Sandpiper
Wandering Tattler

Lesser Yellowlegs
Pectoral Sandpiper
Baird's Sandpiper
Least Sandpiper
Semipalmated Sandpiper
Stilt Sandpiper
Buff-breasted Sandpiper
Long-billed Dowitcher
Hudsonian Godwit
Red-necked Phalarope

Long-tailed Jaeger
Parasitic Jaeger
Glaucous Gull
Glaucous-winged Gull
Herring Gull
Mew Gull
Bonaparte's Gull
Arctic Tern

Townsend's Solitaire
Ruby-crowned Kinglet

Bohemian Waxwing
Northern Shrike
European Starling
Tennessee Warbler
Orange-crowned Warbler
Yellow Warbler
Yellow-rumped Warbler
Wilson's Warbler
Townsend's Warbler
Blackpoll Warbler
Northern Waterthrush
Common Yellowthroat
Bobolink*
Red-winged Blackbird
Rusty Blackbird
Brewer's Blackbird
Brown-headed Cowbird
Pine Grosbeak
Rosy Finch
Redpoll, Common & Hoary

Pine Siskin
Red Crossbill
White-winged Crossbill
Savannah Sparrow
Dark-eyed Junco
American Tree Sparrow
Chipping Sparrow
Clay-coloured Sparrow*
Harris Sparrow
White-crowned Sparrow
Golden-crowned Sparrow
Fox Sparrow
Lincoln's Sparrow
Swamp Sparrow*
Lapland Longspur
Smith's Longspur
Snow Bunting

5.2.3 An Overview of the Prehistoric Record in Northern Yukon

Introduction

Most of the north section of the Dempster Highway, from north of the Ogilvie River to the Richardson Mountain divide, traverses the extreme eastern reaches of the Beringian Refugium -- that portion of Northwest North America which remained ice free during the Pleistocene glaciations. Evidence of human presence in unglaciated northern Yukon has been found to date to at least 24,000 years ago. Although elusive and in some cases, controversial, this nevertheless represents the earliest known record of human occupations in the New World.

The record of human occupation in Northern Yukon in the Holocene or Recent period is somewhat better understood. Conventionally, the prehistory of the region is described in three broad stages: (1) an early stage of which microblade technology is the hallmark, generally termed the Paleo-Arctic tradition; (2) an intermediate stage, characterized by the appearance of side-notched points and a generally 'archaic' trait complex, termed the Northern Archaic tradition; and (3) an Athapaskan stage, ultimately traceable to groups identified in the ethnographic record, termed the Late Prehistoric Athapaskan tradition.

There is a growing body of evidence for the existence of an earlier technological tradition in northern Yukon, preceding the Paleo-Arctic microblade complexes, tentatively defined as the northern or Arctic Cordilleran tradition. The recognition of this early technology provides support for the view that the record of human occupation in Eastern Beringia is more complex than previously supposed, comprising what were very likely several migrations over a considerable period of time.

The following briefly reviews the current understanding of the prehistoric record in northern Yukon. The evidence of past human presence is limited almost exclusively to stone tools and the byproducts of stone tool production. Distinctive tool types and techniques of tool manufacture, and how these may change over time provide the basis for archaeological interpretation and definitions of technological traditions. It should be stressed that while a technological tradition may indicate a group of peoples sharing a common history and culture, a technology of tool production may also have been adopted by many different cultural groups.

The Late Pleistocene Evidence

The evidence for human occupation of northern Yukon in the late Pleistocene was initially recognized in the fossilized bone of largely extinct fauna recovered in numerous localities along the Old Crow River (Irving 1978; Morlan 1978). In the Crow River sample, investigators observed bones modified by what was presumed to be human agency: flaking, fracturing, grinding, polishing, scraping and cutting; rare bone tools such as awls, fleshers and wedges, were recovered as well.

The lack of primary context for much of the Crow River sample called into question the interpretation of human agency in the modification of the bone, however. The action of freeze/thaw in a riverine environment and carnivore gnawing were suggested as alternative sources for the modification observed (Binford 1981; Dumond 1982). The ages of the finds have also generated some uncertainty, particularly with the discovery that radiometric dating of the apatite fraction of bone was unreliable. Stratigraphic context and radiometric dating of the collagen fraction of the bone now indicates that the majority of modified bone

from the Crow River deposits probably range between about 25,000 and 30,000 years ago (Morlan 1983).

Recent work at the Bluefish Caves, about 50 km southwest of Old Crow has uncovered in situ evidence of a bone industry corresponding to some of the Old Crow modified bone sample. In particular, the use of thick walled proboscidean bone to produce flakes for use in cutting or scraping activities, analogous to stone flake production, has been recognized in the Bluefish Caves and dated to about 24,000 years ago (Cinq-Mars 1979; Morlan and Cinq-Mars 1982; Cinq-Mars, personal communication, 1988). Stone tools and debris are also found in the Bluefish Cave deposits, in association with the bone of extinct Pleistocene fauna. The sample is too small, however, to permit the characterization of this industry.

Traces of a Pleistocene bone industry resembling the Old Crow sample have also been uncovered in the mucks overlying the gold-bearing gravels in the unglaciated portions of the Klondike. These finds include a caribou antler punch, green fractured proboscidean long bones, a mammoth bone core, and a cut bison skull (Harrington 1980; Morlan and Cinq-Mars 1982). Most of the Pleistocene fossils in the Klondike area are believed to be late Wisconsinan in age (ca. 30 - 15,000 B.P.).

The Late Pleistocene-Early Holocene Record

Reconstructions of the prehistoric record in northern and central Yukon in the late Pleistocene-early Holocene period are largely conjectural, and based for the most part on undated tools and technologies which appear unrelated to the widespread microblade technologies of the early Holocene.

Irving and Cinq-Mars (1974) and Clark (1983) have proposed that certain distinctive technological elements in the archaeological record of the interior Northwest may be grouped in an Arctic or Northern Cordilleran tradition. The most diagnostic elements of this tradition include lanceolate, convex-based points; large, transverse burins, and large blade technology. Similarities observed with presumed contemporary Late Pleistocene Paleo-Indian technologies south of the ice sheets may indicate common technological antecedents for the northern Cordilleran and Paleo-Indian stone tool industries.

The persistence of northern Cordilleran technology in the Cordilleran regions of Yukon and in the District of Mackenzie into the Holocene may account for the failure of the Paleo-Arctic microblade technologies to penetrate much beyond these areas. In part, Clark and Morlan's (1982) preference for the label 'Northwest Microblade tradition' (originally defined by MacNeish 1959a,b; 1964) rather than Paleo-Arctic tradition, may be seen as an attempt to accommodate the evidence of a regionally distinctive development which grew out of both technologies.

Hunters occupying northern Yukon in the late Pleistocene had available to them a wide range of prey species, including mammoth, horse, bison, caribou, moose, wapiti, and sheep. The extreme cold and aridity characteristic of eastern Beringia at the height of the late Wisconsin glaciation suggests, however, that the faunal populations were probably not abundant.

The Early Holocene Period

The early Holocene archaeological record throughout much of the interior Northwest is characterized by the presence of Asian-derived technologies which emphasize the production of composite tools made using microblades. Microblades are small standardized stone blades (about 4 - 6 cm in length, and about 1 cm in width) which were

fitted in a series into the slotted edge of a bone or antler piece to form the cutting edge of a knife, or the piercing edge of an arrow or spear, for example. The advantage of this technique of composite tool production lies in the fact that the working edges are easily replaceable when damaged or dulled, which eliminates the need to manufacture a new tool.

Although considerable regional variation appears to exist in the Paleo-Arctic stone tool industries, other common technological elements include three types of microblade cores (wedge-shaped, conical and tabular); burins (frequently notched); large blades struck from face-faceted cores; and large bifaces (used both as tools and as flake cores).

Available reconstructions of past environment suggest that Paleo-Arctic tradition peoples were primarily adapted to the hunting of large caribou herds and bison in what were then largely treeless environments.

The Mid-Holocene Period

The appearance of the Northern Archaic tradition in northern Alaska and southwest Yukon during the mid-Holocene has been interpreted as an introduction of boreal forest adapted technology and/or populations from an as yet unidentified southern source (Workman 1978; Anderson 1968a,b). Characteristic traits of the Northern Archaic tradition stone tool technology include a variety of notched and stemmed points; large bifaces, including the distinctive semi-lunar form; and numerous end scrapers (some with graver spurs).

The association of Northern Archaic traits and microblades; and of side-notched points with microblade complexes, are viewed by the majority of investigators as evidence of acculturation or trait diffusion in the context of population contact/replacement. Clark and Morlan (1982:36) proposed a reconstruction of events in terms of continuity with change for parts of the interior Northwest, with Northern Archaic as a late phase of the Northwest Microblade tradition which, in certain localities, lacks microblades. In this reconstruction, technological continuity between the early Holocene microblade complexes and later side notched point complexes is recognized.

Northern Archaic/Northwest Microblade tradition populations in the interior Northwest were adapted to the northern forests. Hunting of the now more scattered large game species (moose, caribou, and locally, bison) was supplemented on a regular basis by riverine and lake fishing and the hunting and trapping of smaller game animals (beaver, rabbit). This is essentially the pattern which persisted to the historic/contact period over the interior Northwest.

At about 3,000 - 4,000 years ago, the north slope and coastal areas of Yukon became part of the Inuit cultural tradition. The earliest components, the Arctic Small Tool tradition technologies, have been recognized as far south as the Trout Lake area, in the western foothills of the northern Richardson Mountains. Later Norton tradition sites (dated to about 3,000 to 1,000 B.P. in Alaska) are also present in this area, and to the south, in the Rock River headwaters. Characteristic of Paleo-Eskimo technologies is the production of small, exquisitely retouched, stone tools.

The Late Holocene Period

Late Prehistoric Athapaskan tradition is present northern Yukon at about 1250 B.P. Although several new traits appear in this tradition, there is in fact abundant evidence of essential continuity in technology, settlement patterns and subsistence between Late

Prehistoric Athapaskan and the preceding Northern Archaic/Northwest Microblade tradition.

New technological elements in the Late Prehistoric Athapaskan tradition include tools made on native copper, multi-barbed bone points, and small, stemmed stone arrow points (Klo-Kut points). An emphasis on the use of bone and antler tools, also represented in the abundance of pices esquilles or stone wedges, is characteristic of the tradition as well.

The Archaeological Evidence in the Dempster Highway Corridor

Introduction

A total of approximately 87 archaeological sites have been identified in the Dempster Highway corridor as a result of surveys conducted by Cinq-Mars (1975); Van Dyke (1979); Gotthardt (1981; 1982) and Bussey (1985); and from brief local reconnaissances undertaken by Irving (1968) and Morlan (1970). Significant concentrations occur at the headwaters of the North Klondike River and in the North Fork Pass area; and in the Rock River headwaters. Very few sites have been found to occur outside of these areas. Whether this is a factor of archaeological visibility (almost all sites were located in surface context in montane or submontane areas), or whether the pattern is an accurate reflection of prehistoric land use, would require additional investigation of the highway corridor. Some indication of archaeological potential may be discovered by reference to traditional land use and resource areas.

The majority of known archaeological sites in the Dempster Highway corridor represent lithic scatters, recovered in surface context on elevated bedrock ridges and knolls, and on exposed terraces. Assemblage composition in these sites may range from a few isolated flakes to dense concentrations of several thousand artefacts, primarily flakes and biface fragments. Characteristically, tools comprise less than 1% of most site assemblages in the Rock River corridor. This is in part a factor of quarry/workshop activities at these sites, where the byproducts of stone tool production dominate over the finished tools, which are often transported and used elsewhere. In all cases, the past occupants of the Dempster sites were exploiting the local bedrocks for the manufacture of their tools (principally dark grey cherts in the Ogilvie Mountain area and dark grey silicious argillite in the Rock River headwaters area of the Richardson Mountain foothills).

The workshop/quarry activities represented at most of the Dempster sites has affected the character of the tools produced at these sites. The abundance of raw material appears to have promoted an expedient or opportunistic approach to tool production and use, involving the selection of flakes and shatter with appropriate edges or angles for the task at hand, with little or no modification. As a result formal tool types, which are often diagnostic of a particular prehistoric technology, are not well represented in the sample.

The location of sites, often in what may be termed look out situations suggests a primary hunting focus, probably involving seasonal interception of migrating caribou herds. Caribou fence surrounds were used historically by both Han and Gwich'in peoples who traditionally occupied the Dempster Corridor. The antiquity of this technology is unknown, however. Other game resources include sheep, which are resident in the Ogilvie Mountains and the Mt. Cronin area of the Richardson Mountains; moose may be found throughout these areas as well. At least in the early Holocene, bison may have been present in the foothill areas of the Ogilvie and Richardson Mountains.

Some of the large sites in the Dempster Corridor may represent major campsites utilized by large groups of people engaged in the caribou hunt. These sites probably represent a

variety of activities associated with the hunt, including hide processing, meat drying and tool manufacture and maintenance.

It should be stressed, however, that the surficial nature of the sites in the Dempster Corridor leaves open the possibility that some of the large sites may be also the result of multiple occupations by groups of hunters over several thousands of years.

The following is a speculative reconstruction of the prehistoric sequence for the Dempster Highway Corridor based on the archaeological evidence recovered in the sites in this area. Much of northern Yukon was ice free during the last Wisconsinan glacial period, and the earliest occupations, particularly of the Rock River area, may well have occurred during this period. Because the character of any lithic technology present in Yukon at this time is unknown, apart from traces recovered in the Bluefish Caves (Cinq-Mars 1979; Morlan and Cinq-Mars 1982), the evidence for this early occupation is difficult to recognize. The sequence outlined here assumes, conservatively, that human presence in the western Richardson Mountain foothills is co-incidental with the late Pleistocene - early Holocene period.

Late Pleistocene - Early Holocene

Occupations by groups using a northern or Arctic Cordilleran technology. This technology is characterized by the production of large bifaces, blades from generalized or informal blade cores, transverse burins, and later in the sequence, side-notched or lobate stemmed Kamut points. Dates of about 7500 B.P. on one Kamut point from the Rock River sites suggest that side-notching as a hafting technique characteristic of later Northern Archaic/Northwest Microblade tradition technologies may have originated in resident northern Cordilleran technology, and does not necessarily entail an introduction from southern populations.

Early - Mid-Holocene

Paleo-Arctic or Northwest Microblade tradition technologies dominate. Blade production is not well represented, but certain cores resemble formal types identified in Paleo-Arctic tradition assemblages in Alaska. One classic 'Campus' or wedge-shaped microblade core, also characteristic of Paleo-Arctic tradition technologies, was recovered in the Rock River collections. Donnelly burins and a small range of multipurpose tools seen in other microblade technologies of the interior Northwest also suggest Paleo-Arctic/N.W.M.t relations.

Microblades are rare in the Rock River sites. This may be due to situational factors (lack of suitable raw material or raw material abundance); or may indicate a later stage of the N.W.M.t which saw less emphasis on the production of composite tools.

The presence of large, more or less lanceolate bifaces in the Rock River collections, produced by a technique dissimilar from that used in the production of Kamut points and round based lanceolates, suggests these two might have been produced in the context of different technologies. The Kamut and related forms have been associated with the proposed northern Cordilleran tradition; the remaining lanceolate forms may fall within the range of Paleo-Arctic/N.W.M.t technology.

Mid-Holocene

Bussey (1985:73) has tentatively assigned the majority of sites in the North Klondike area of the Dempster Highway corridor to the Northern Archaic Taye Lake Phase (Workman

1978), based on the presence of large lanceolate and ovate bifaces, thick end scrapers and end scrapers that appear to have been hafted. Gravers and burins are absent in the sample, which is also characteristic of the Tye Lake Phase. The few microblades present in the North Klondike River assemblages are not "typical" examples, and may be fortuitous; microblade cores are absent in the sample. Also typical of the Tye Lake Phase is the absence of stone wedges or pices esquilles and burins.

Although Bussey reports blades in several of the sites in the North Klondike area, her description (1985:60) suggests that these are blade-like flakes rather than true blades (i.e., products of a formal blade technology). The absence of formal blade technology is consistent with a Northern Archaic identity for occupations in the North Klondike River valley.

Late Holocene

The late Holocene period in the Rock River area of the Dempster Corridor saw episodes of occupation by Paleo-Eskimo/Norton groups. At least three implements (point, knife, ulu) recovered at MfVa-13 (Localities 5 and 5A) show highly distinctive workmanship attributable to this technology.

Late Prehistoric Athapaskan tradition technology is clearly represented only at one site (MgVa-12) by a relatively high proportion of pices esquilles, which is typical of sites of this tradition in the Porcupine drainage (Klo-Kut [Morlan 1973]; Rat Indian Creek [Le Blanc 1984]). Bone and antler implements, also characteristic of Late Prehistoric Athapaskan technology, would not be preserved in the surface context of the sites in the Dempster Corridor. Other diagnostic Late Prehistoric Athapaskan tool forms, specifically the Klo-Kut point, small notched points, and the thin end scraper are absent from sites in the Dempster Corridor. This may be attributed the limited focus of activity at the sites, most of which are associated with mountain and foothill hunting of caribou.

The late prehistoric pattern merged into the contact/historic period with seasonal caribou hunting by groups of Gwich'in and Han people. It should be noted, however, that land use patterns documented for the Upper Porcupine Gwich'in in the historic period do not indicate intensive exploitation of the western Richardson Mountain foothills.

At least for the Rock River sites, the apparent scarcity of evidence for Late Prehistoric Athapaskan tradition occupation may indicate a shift in land use patterns in the prehistoric period similar to that interpreted by Irving and Cinq-Mars (1974) for the middle Porcupine basin. In this region, " ... sometime during the post-glacial period, a major change appears to have occurred in the pattern of land utilization ... (involving a) shift from the early northern lookout sites to the later combination of caribou surrounds and large riverine hunting camps " (1974:78-79). Irving and Cinq-Mars speculate that this shift away from an upland focus may have been in response to:

1. A change in the major prey species. If bison is assumed to have been the dominant prey species during the early and middle post-glacial times, it is likely that its extinction (or disappearance from the area) would have resulting in a shift to a different prey species (caribou), accompanied by changes in hunting patterns and preferred localities.
2. Extensive changes in the topography of the Old Crow Flats. It is likely that intermediate stages in the history of this complex lacustrine environment may have restricted game movements to a few corridors across and around the basin, that is, close to the northern lookout site areas. Subsequent increased drainage of the basin could very well have made these hunting stations obsolete.

3. Changes in hunting patterns and technology such as the invention or borrowing of the caribou fence and, possibly, the development of highly organized riverine-crossing caribou interception techniques (1974:79).

Additional investigations in the Rock River portion of the Dempster Corridor would be required to substantiate these observations. Although the environmental factors may not be strictly comparable, the apparent absence of Aishihik/Late Prehistoric Athapaskan tradition occupation observed by Bussey for the North Klondike River sites may indicate a similar shift in land use patterns in this area in the prehistoric period.

5.2.4 Paleontological Record of the Dempster Highway Corridor

In the Pleistocene Ice Ages, while much of the Northern Hemisphere was under a cover of glacial ice, the arid environmental conditions of northwest North America and northeastern Siberia prevented the formation of significant glaciation. During the glacial episodes, global reductions in sea level brought about by the onset of glaciation exposed the floor of the Bering Sea, bridging the two continents. This vast region, which included northwest North America and northeast Asia, and the Bering Land Bridge was essentially continent in itself, and has been given the name 'Beringia' to acknowledge its unique status as a refugium. During the time of the Pleistocene glaciation in the North America, unglaciated Beringia supported populations of arctic-adapted plant and animal species; at least by the terminal Pleistocene, human beings were included in the Eastern Beringian community.

Beringian Fauna of the Late Pleistocene

Toward the end of the Boutellier interval, at about 30 - 40,000 years ago, a gradual and probably fluctuating deterioration of climate began, signaling the return of full glacial or stadial conditions of the Duvanny Yar interval. Severe dry and cold climatic conditions prevailed. Sea level fell steadily, attaining its minimum by about 18,000 years ago. At this time, the fully exposed Bering Land Bridge formed a plain more than 1000 km wide between northwest North America and northeast Asia (Schweger et al. 1982:427).

It is the onset of the severe cold and aridity of the Duvanny Yar interval which undoubtedly brought about the extinctions of at least some of the Pleistocene megafauna. The available evidence indicates that the biota present during the Duvanny Yar interval represent a depletion of the elements comprising the Beringia ecosystem in general during the Boutellier interval (Schweger et al. 1982:430).

The large mammal remains in Eastern Beringia which have been dated to the height of the late Wisconsin glaciation, between about 18,000 and 16,000 years ago

include mammoth, bison, horse, *Symbos* (archaic muskox), possibly muskox, mountain sheep, saiga and caribou. Although these specimens derive from a large geographical area, they represent a faunal community in Alaska and Yukon twice as diverse as that which occurs there at present.

The onset of climatic warming at the beginning of the Holocene and the retreat of glacial ice brought about drastic changes in the geography and environment of Beringia. Rapidly rising sea level inundated the Bering Land Bridge, severing the land connection between northeast Asia and northwest North America. Periglacial lakes, fed by meltwaters flowing from receding glaciers, developed in certain portions of the landscape; elsewhere, ice-dammed lakes were released and modern drainage patterns were established. Warm temperatures and a significant increase in available moisture in Alaska and Yukon initiated the return of forests and the development of modern vegetation communities.

It was with the onset of climatic amelioration, at about 14,000 BP, and with the disappearance of the pockets of steppe-tundra vegetation, that the remaining Pleistocene megafaunal species became extinct. Mammoth do not appear in the fossil record after 14,000 BP, and horse disappear soon after 13,000 BP. *Symbos* was certainly absent from Alaska and Yukon by the Holocene and perhaps earlier. Bison persisted to about 6,000 - 7,000 years ago, at which time they were reduced to localized relict populations. Other species greatly retracted their distributional ranges: wapiti (*Saiga*), large badgers (*Taxidae*) and ferrets (*Mustella*), for example, moved to the south; muskox (*Ovibos*), collared lemming (*Dicrostonyx*) and arctic fox (*Alopex*) retreated to the far north (Schweger et al. 1982:432).

Most species that remained in the Arctic and Subarctic (bison, red deer, some sheep and some carnivores) experienced what has become known as "Holocene dwarfing"; they became smaller and their horns and antlers were greatly reduced in size and complexity. Guthrie interprets this change to indicate principally environmental stress - specifically the reduction of the steppe-tundra vegetation and resulting reduction in available nutrition, which placed a selective disadvantage on those genomes within a species which provided for the elaborate excrescences of social stature. Those individuals which expended less energy on the growth of large horns, for example, were at an adaptive and reproductive advantage in the face of the environmental changes of the Holocene. Virtually the sole exception to this trend was caribou; late Pleistocene Beringian caribou were generally smaller than the living forms (Guthrie 1982:324).

Principal Mammalian Species in the
Beringian Refugium

<i>Spermophilus parryi</i>	arctic ground squirrel
<i>Lemmus sibiricus</i>	brown lemming
<i>Bison priscus</i> +	large horned bison
<i>Bison cf. crassicornus</i> +	large horned bison
<i>Megalonyx</i> +	giant ground sloth
<i>Mammuthus primigenius</i> +	mammoth
<i>Mammut americanus</i> +	mastodon
<i>Equus cf. caballus</i> *	horse
<i>Equus (Plesippus) verae</i> +	very large horse
<i>Arctodus simus</i> +	giant short-faced bear
<i>Ursus arctos</i>	brown bear
<i>Panthera atrox</i> +	lion-like cat
<i>Homotherium serrum</i> +	sabre-toothed lion
<i>Cervalces alaskensis</i> +	stag moose
<i>Alces alces</i>	moose
<i>Bos bunnelli</i> *	yak
<i>Saiga ricei</i> *	saiga antelope
<i>Cervus elephas</i> *	wapiti
<i>Camelops</i> +	camel
<i>Rangifer tarandus</i>	barrenground caribou
<i>Vulpes vulpes</i>	red fox
<i>Alopex lagopus</i>	Arctic fox
<i>Taxidae taxas</i> *	badger
<i>Ovis dalli</i>	Dall sheep
<i>Lupus othus</i>	Alaska tundra hare
<i>Canis lupus</i>	wolf
<i>Felis canadensis</i>	lynx
<i>Bootherium nivicolens</i> +	woodland muskox
<i>Symbos cavifrons</i> +	muskox (archaic form)
<i>Ovibos moschatus</i>	muskox
<i>Castoroides ohioensis</i> +	giant beaver
<i>Ochotona whartoni</i> +	giant pika
<i>Ochotona princeps</i>	pika
<i>Ondatra zibethicus</i>	muskrat
<i>Martes pennanti</i>	fisher
<i>Castor canadensis</i>	beaver
<i>Gulo gulo</i>	wolverine
<i>Lepus americanus</i>	varying hare
<i>Lepus arcticus</i>	Arctic hare

+ extinct

* no longer native to Yukon or Alaska

**Pleistocene Glacial and Interglacial Periods in
North America**

<u>Glaciation</u>	<u>Interglacial Period</u>	<u>Approximate Time</u>
Wisconsinan		80 - 10,000 ya
	Sangamon	125 - 80,000 ya
Illinoian		? 170 - 125,000 ya
	Yarmouth	
Kansan		
	Aftonian	
Nebraskan		? 2 mya

Stadial and Interstadial Sequences in the Wisconsin Glacial Period in the Beringian Area*

<u>Region</u>	<u>Local Glaciation</u>	<u>Period</u>
North Alaska	Donnelly Glaciation	30 - 11,000 ya
Brooks Range	Walker Lake Glaciation	
Cordillera (Yukon)	McConnell Glaciation	
----- Boutellier Non-Glacial Interval -----		
North Alaska	Delta Glaciation	80 - 65,000 ya
Brooks Range	Itkillik Glaciation	
Cordillera (Yukon)	Reid Glaciation	

* After Hopkins 1982:5, Figure 2.

APPENDIX 5.3 INTERPRETIVE STORYLINES

The storylines detail the highlights of each story, relative to the subthemes. They include much of the project research materials of the interpretive inventory. Most stories are written in a technical format. The material is intended as reference. People who would use this information would be technical staff, such as interpreters or commercial operators desiring background information. The written format is not intended to be used verbatim for signs, brochures or other interpretive media.

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: MIGRATION

Any herd of large animals of so many individuals (170,000) must continually move to sustain the seasonal needs of the animals and avoid overgrazing its range. Caribou are always moving. During the July movements of the herd, travel is fastest, but during the migration period, herd movement is most directional.

Caribou have co-evolved with the tundra environment. In summer, the abundant green tundra forage is rich in protein and caribou are only forced to suspend feeding by harassment from mosquitoes and parasitic flies. In some years, if harassment is severe, animals can lose weight through July. Although escape from insects is possible south of treeline, the northern tundra offers vast regions of favoured cool, windy areas able to support the large herd. But the tundra is not ideal winter range. Tundra is typically poor in energy rich lichens and lies exposed to windblown, hardpacked snow. Northern boreal forest, on the other hand, provide abundant lichens and stable snow conditions. To exploit each of these habitats, the caribou must move between these areas.

To simplify the complex, the Porcupine Caribou seasonal movements between wintering and summering ranges can be considered as three migration corridors. The Dempster Highway intersects two of these routes: the Richardson Mountains route and the Old Crow route via the Ogilvie Mountains.

In spring, the pregnant cows show the earliest urge to get north to the tundra, for calving. The deep snow conditions often force the cows to travel single-file with the lead animal breaking trail. Both the Ogilvie and the Richardson Mountains have wind blown slopes by late winter. They offer easier snow conditions for travel. The parturient cows usually reach the tundra calving grounds by early June. Leaving the wintering grounds any time from March to May, the spring migration can represent as much as 3 months. However, individuals have been reported to make the distance in as little as two weeks. Movement tends to be greatly retarded by late spring melt. The maternal bond between mother and calf tends to break during spring migration with bull calves remaining with the bull groups in the south. Some calves do celebrate their first birthday with their mothers on the calving grounds.

The bulls travel northward after the cows, joining them on the coastal plain by early July. The caribou follow land contours in their movements. A number of areas along the Dempster are predictable crossing areas, largely because of the land contours. In a number of places, worn trails of the caribou are visible on scree slopes.

Fall migration is most often triggered by an atmospheric change, usually expressed by storms and the first major snowfall of the season. Snow conditions are not a limiting factor to travel, as they are during spring migration, so travel routes tend to be more diverse. The same three migration routes are used. No caribou is loyal to any route, using different routes in different years or changing routes during the same season. A return to more favourable weather conditions can cause the caribou to reverse their southward migration. If September and October remain clear and cool, caribou may linger and winter north of the Porcupine River (Urquhart 1986).

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: WINTER RANGE ECOLOGY

Caribou animate an otherwise bleak and barren winter landscape. Silently, they move in and out of the spruce forests and plains, like ghost shadows in the frozen air, feeding and then suddenly moving on. They are the Dempster in winter.

From North Fork Pass to the Peel Plateau, the Dempster Highway intersects the winter range of the Porcupine Caribou herd. Their range encompasses the area of northeast Alaska and northern Yukon south to Dawson. Biologists have chosen to delineate three primary areas of wintering: the Ogilvie and Richardson Mountains in Yukon and the Chandalar area of Alaska. Since surveys began the Yukon winter range tends to support the majority of animals. No scientific formula predicts where the herd will winter, nor how many caribou will winter in which areas, however, regional distribution has been associated with snow conditions. Some caribou remain on the Arctic coast for the winter, hardly moving off the calving grounds while in other years they could range southwards to Dawson.

The wintering period follows a migration from summer range on the northern tundra, to the shelter and foods of the spruce forests. Animals winter as bands with bulls tending to segregate from the cows and calves. Fall migration is the time when the caribou are least segregated.

Caribou belong in a cold and snowy environment. Their hooves are shaped for stability on slippery surfaces, for digging in snow and like snowshoes, for "floating" over the snow. The hollow hairs of their coat insulate them from the frigid temperatures to lows of -50° C. Their physiology is specially adapted for the cold environment. They recycle their urea and have a specialized glucose system (Russell and Martell 1984).

Caribou are linked to lichens. Caribou can ferment lichens into usable winter energy, separating them from all other large ruminants. Their adaptation to use lichens as a major forage source in winter allows them to exploit the subarctic environment.

Caribou can smell lichens under the snow. Using their front hooves as shovels, they dig down into the snow for the forage creating a bowl shaped depression or crater. Crusty or deep snow requires more effort in digging.

Social dominance in winter is often expressed in the competition between animals for the preferred feeding craters. The larger antlered animals have the best vantage for controlling the crater. Pregnant cows enjoy the position of highest dominance in late winter when the large bulls are antlerless.

Lichens are not the only winter food of caribou. Pregnant cows require more protein for their developing fetus'. The green foods, like the base of sedge leaves, horsetails and evergreens, are a good winter source of protein.

Along the Dempster Highway, certain regions offer a variety of predictable snow conditions and food resources for caribou. Distribution tends to be north of North Fork Pass, an area of deep winter snows. Early in the winter, animals move freely in open areas. In years of deep snow, the Chapman Lake region (within the valley

basins of the Ogilvie and Hart Rivers) offers the shallowest snow. Constant wind in the Richardson Mountains also provides shallow snow refuge during deep snow winters. However, it is the spruce forests of Eagle Plains that provide abundant lichen food. This region has deeper snow in many years and caribou tend only to exploit this region in years of shallower snow accumulation.

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: WOODLAND CARIBOU

The Dempster Highway intersects the summer range of the Hart River herd, a herd of about 1500 woodland caribou (Farnell and Russell 1984). Unlike the barren-ground caribou of the Porcupine herd, the Hart River herd does not undergo major migrations. Their summer and winter ranges are distinct, but travel between them tends to be altitudinal rather than latitudinal. Migration distances are comparatively short distance and localized.

Pregnant cows are the first move to the summer range of the upper Klondike River, each seeking a traditional and isolated calving site. They migrate up steep slopes to remote mountain tops, cirque basins or steeply confined side slopes. Predators tend to be less of a risk in these places. Calves are born in late May. The bulls also will summer in the upper Klondike drainage staying within their segregated bands from the cows. Ridgetops and late snowbeds offer welcome relief from the insects in the summer. The mountaintops of the North Fork Pass area and their side slopes are not uncommon places to view caribou.

In winter, the animals move down to the lower elevation spruce forests, well east of the Corridor. Even during movement between ranges, the Hart River animals are seldom in bands larger than 30 animals. This may be as much a function of the small herd size as any thing else.

These woodland caribou are slightly larger and heavier than the Porcupine animals, but the differences are not always obvious. Behavioural differences separate the Porcupine and Hart River animals yet members of the two herds commonly overwinter in the same area (Farnell and Russell 1984). Radio collared animals from both herds revealed an intriguing story. Collared Hart River animals, whose collective numbers are less than the annual rate of increase of the vast Porcupine herd, were located in wintering groups of the larger herd. Porcupine animals were also collared. Despite sharing the same winter range simultaneously, none of the collared animals mixed during calving. Each went to their respective calving areas (Farnell and Russell 1984). The calving period of the Hart River herd is about two weeks earlier than the Porcupine calving. This discovery of loyalty to the calving areas, despite a sharing of winter range, supports the theory that caribou herds are best identified and defined by their calving range.

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: RUT

The breeding period or rut is one of the few times in the yearly cycle of the caribou that all segments of the herd mix. Biologists often take advantage of this natural mixing of the herd to estimate herd composition.

During pre-rut, the bulls strip the velvet off their antlers, which have been growing since the greening of spring, by thrashing in the willow bushes and buck brush. Sparring is common but not serious. During the rut, this behaviour is intensified. The bulls do not eat. They take on a behaviour of bush gazing - standing still with a transfixed gaze. Their necks swell adding a regal appearance to their dominant profile. Vocalizations are loud snorts and coughs. Fighting between males is vigorous, with the victor proving a dominance and the assumed right to breed with the receptive cows. One bull tends to one cow at a time, following her while bearing antagonistic displays towards intruding suitors. Bulls can lose considerable weight during the rut. Natives will not hunt bulls during October and November because they consider the meat unfit to eat.

Rutting tends to occur in open areas. One year, a majority of the Porcupine Caribou herd rutted in the Chapman Lake area. Although the timing of the rut is constant between years (mid October to late October with the Porcupine herd), the location of the rut is not.

The dominant bulls drop their antlers shortly after the rut. Subadult bulls will retain their antlers longer into the winter period, subadult cows retain theirs for most of the winter and pregnant cows retain their antlers until after the calving period in June.

Perhaps as a consequence of the rut, bulls tend to have a higher mortality rate than the cows (Russell pers. comm.). For the Porcupine Caribou herd, the sex ratio is 60 bulls to 100 cows. In some heavily sporthunted herds, the sex ratio can be as low as 30 bulls to 100 cows.

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: PREDATORS

The most commonly associated predator of caribou is wolves. When you consider the whole year, wolves are the most significant predator of the Porcupine caribou. During the spring and summer season, grizzly bear and golden eagles are the predominant predators (Urqhart 1986). Subadult golden eagles are not confined to a nesting areas like the breeding adults and they are not involved in the reproductive cycle, allowing them to travel far with the herd and hunt young calves. Grizzlies are surprisingly agile when pursuing caribou. Calves are most prone to predation by bear during their first few weeks of life after which its an even race. Bear predation after this period tends to be by ambush.

Wolves rank as the third most prevalent predator on the calving grounds. Breeding wolves will take advantage of the herd only if it is within their den region, while non-breeders have the option to travel far to hunt. Wolf numbers in the summer range are low, likely as a result of legal and illegal aerial hunting in Alaska and rabies which periodically sweeps through the wolf population. Wolves are essentially the only predator of the herd from November to April when bears emerge from their dens and golden eagles return from their wintering grounds. Wolves may become a more important predator of the herd should wolf numbers increase.

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: LEGENDS

Gwich'in people have a special relationship to caribou. It stems not only from their extensive use of the animal but to the time of legends when Gwich'in and caribou lived in peaceful intimacy, despite being hunters of other animals. The time came however when people separated from them and it was agreed that people could then hunt the caribou. Part of this old relationship is said to remain today so that in every caribou, there is a bit of the human heart, and every human has a bit of caribou heart. Both will know a little of the other's thinking and feelings. This then is said to explain why sometimes caribou hunting is easy and other times very difficult. No other animal is so highly respected in Gwich'in culture with the exception of the bear (Helm 1981). The following are two examples of legends pertaining to caribou.

The Little Boy In the Moon

This legend tells about a difficult year when the caribou could not be found. A young boy with considerable power is able to draw the caribou to the hunters. One of the caribou is marked with red ochre and he asks that the fat of this animal be given to him. The following day the caribou come and many are hunted. The chief kills the marked caribou but does not bring the fat to the little boy. He cries and when his mother complains to the chief that he did not honour the boy's request the chief tells the woman to send him to the moon. The boy does go to the moon but before leaving he makes provision for his parents so that they will never be without caribou meat. The rest of the group dies from starvation.
(based on a story from "The Athapaskan/Tlingit Family", Council for Yukon Indians)

The Man Who Travelled With Caribou

This story is about a Northern Tutchone man who travelled with the caribou for such a long time that he turned into one. During this transformation he acquired the caribou spirit and stayed with them. Eventually he was rescued and returned to human life but only by the power of another spirit helper, the golden eagle. He could not get close to people however for he was still half caribou and the smell of humans was very offensive to him. Only over a long period of time could he gradually get used to humans again.
(based on an account in "My Old People Say", National Museums of Canada)

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: HUMAN DEPENDENCE, PAST AND PRESENT

The Porcupine caribou herd has flourished in the past because of its isolation, the small number of native and other people who hunted the herd, and the care of the resource which resulted from traditional conservation practises. Not since the turn of the century when large numbers of caribou were killed to feed whaling crews overwintering on the Arctic coast has the herd been subjected to any great slaughter (Berger 1977).

Although Gwich'in people could not have survived without small mammals, birds and fish, the caribou was of central importance. The caribou provided food and raw materials used for shelter, tools, and clothing, and the foundation for many stories and legends. For generations it has been the mainstay of the Gwich'in, particularly for the Vuntat, Tukkuth, and Tetlit people. The Vuntat generally hunted the herd in the fall as it passed through the Old Crow Flats from its summer range on the north slope. The Tukkuth intercepted the herd as it crossed the upper Porcupine River. The Tetlit Gwich'in primarily hunted animals at their wintering grounds, around the headwaters of the Peel River.

Today the herd is principally hunted by Gwich'in people from Old Crow, Fort McPherson, and Aklavik, and also by native people from Kaktovik and Arctic Village in Alaska. Han and Northern Tutchone people also hunt caribou but on a less regular basis. In 1977, an estimated five hundred caribou were being taken by each of the above communities (Berger 1977).

Sites for Interpretation:

Blackstone Uplands, Rock River

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: MANAGEMENT

The characteristics of the Porcupine herd demand unique management considerations. By definition of the range, the herd is international. Within Canada, the herd ranges between two territories. The herd has supported a traditional Gwich'in lifestyle for thousands of years which has persisted into today's world. The Dempster Highway provides easy access for hunters to the herd, hunters of both subsistence and sport intent. The range of the herd is vast with some areas representing regions of intense industrial interest for oil and gas development.

How can so large a herd requiring so much subarctic wilderness ever be adequately managed? There have been several initiatives to safeguard the herd's well being.

In 1985, the within-Canada Porcupine Caribou Management Board was established. Representation on the Board is equally divided between subsistence users of Gwich'in and Inuvialuit origin and government personnel. The Board's purpose is to advise the appropriate ministers on issues concerning the conservation of the herd and its habitat.

In 1987, an agreement was struck between Canada and the United States entitled, "Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd." As an advisory board, its mandate is to conserve the herd and its habitat through international cooperation and to give the interests of the users significant consideration. Appropriate action is to be taken by the Board to ensure the conservation of the herd. The eight member Board is comprised of national and regional wildlife managers and users.

Large portions of the range of the herd are under some form of protection. The Arctic National Wildlife Refuge includes the majority of the Alaskan range of the herd. Protection of the core calving grounds of the herd in Alaska ("10-02 Lands") is still being decided. Some of the summer range of the herd in Canada was protected by the creation of the North Yukon National Park.

Regulated access and hunting corridors on the Dempster Highway have been established to aid in the conservation of the habitat and the herd. In Yukon, from the Klondike River region north to the border, two protection corridors are in place. A 16 km wide corridor (8 km either side of the highway) prohibits off-road vehicle traffic (except on two designated roads). A 2 km wide corridor (1 km either side) prohibits sport hunting. In NWT, there is no protective corridor but a provision exists for the government to close hunting in the area at any given time, if warranted.

Subsistence hunters are not regulated by law through virtue of their constitutional rights. Sport hunters are regulated by regional game laws which vary with the different jurisdictions.

THEME: TRUE NORTH
SUBTHEME: CARIBOU

STORY: STATUS AND VULNERABILITY

Since intensive census surveys were initiated, the herd has increased slowly through the 1970's (Farnell et. al in prep.). Since 1983, the herd has been increasing at a rate of 5% annually (D. Russell pers. comm.). For a herd 170,000 strong, this is about 8500 more animals each year. The factors responsible for this growth are not well understood: predation rates on juveniles seen to be low, calf survivorship has been good and hunter take has been around 2-3% per year.

The vastness of the herd's range means that it may continually come under threat by the pressures of industrial or human interests. The range is not so small that it can be neatly tucked away within a park's boundaries. And the question will always be asked as to how much development can the habitat or the herd withstand?

One of the most significant and continued interests in the lands used by the caribou herd has been oil and gas potential. The oil reserves of Prudhoe Bay, Alaska in the 1970's sparked interest in a pipeline across the northern Yukon coastal area (summer range for the herd). A Dempster lateral pipeline was considered, to run petroleum products from the Beaufort Sea south to a pipeline following the Alaska Highway. The establishment of the Dempster Highway itself sparked concern about the welfare of the herd: the negative effect on traffic on caribou wanting to cross the highway and the added hunting pressures the highway would bring. Petroleum interests continue in the northern Alaska in the Arctic National Wildlife Refuge.

The Dempster Highway was built as a road to resources and at the time of construction the impetus was to aid oil and gas exploration. Thirty years later, the highway carries the same purpose. It is a working highway.

As Thomas Bergerud eloquently stated, "The ultimate question for caribou is the same as that once posed for bison - can the land be theirs to wander?"

THEME: TRUE NORTH
SUBTHEME: BERINGIA

STORY: DEFINITION

Beringia defines a specific geographic region which escaped glaciation when other areas of similar latitudes were ice-covered. Beringia includes Siberia, the Bering land bridge and its extension eastward into central Alaska and central and northern Yukon. During the glacial periods, the ocean levels withdrew, exposing the Bering Land Bridge. This continuous land mass allowed the movement of species of flora and fauna, including human movements. The term Beringia was applied to the region by the botanist Hulten in 1937 for explaining the distribution of certain groups of plant species (Ritchie 1984).

The vegetation of the period would have reflected the cold and arid climate of the glacial periods. On the basis of pollen found in sediment, researchers speculate that during the Wisconsin or most recent ice age, Beringia was largely a shrubby open tundra (Schweger 1982). The vegetation environment was not likely the same everywhere but a mosaic of habitat types reflecting differences in water and elevation (Schweger 1982). As a continuum, this mosaic may have gradated from moist meadows of sedge, grass and herbs in the lowlands, to tundra on the drier terraces and pediments and to sparse vegetation in the dry uplands.

The large mammals associated with the Beringian tundra include: woolly mammoth, steppe bison, Chersky horse, woolly rhinoceros, cave lion, saiga antelope, muskox and reindeer, to name a few (Verechagin and Baryshnikov 1982).

Today's vegetation communities have no resemblance to the Beringia habitats. Scrub birch is believed to have appeared in Beringia 14,000 B.P., spreading in distribution with the warming and wetting climatic change, replacing the herb tundra on the middle and lower slopes of the Richardson Mountains (Schweger 1982). Spruce colonized Beringia later, once the climate offered sufficient moisture and warmth. The fell-field habitat with its open discontinuous vegetation, as of the mountaintops of Windy Pass, may be the only surviving Beringian habitat (Lafontaine and Wood in press). This dry tundra habitat continues to be xeric and cool, possibly existing as it did 20,000 years ago (LaFontaine and Wood in press).

(See Appendix for "Paleontological Record of the Dempster Highway Corridor".

THEME: TRUE NORTH
SUBTHEME: BERINGIA

STORY: GEOLOGY

Beringia is the land bridge between Alaska and northeastern Asia which existed during the period of low global sea levels. During glacial times, lower sea levels prevailed because the available water was frozen in the ice sheets leaving the Beringian land bridge above sea level. Beringia was above sea level during the Tertiary. The Bering Sea first opened about 12-15 million years ago associated with tectonic movements and opened several times since. It opened about 3.5 - 4 million years ago, during the interglacial about 100,000 years ago, and again 14,000 and 10,000 years ago.

During both glacial periods prior to 100,000 years ago and the Wisconsin which reached its maximum about 20,000 years ago, tundra conditions probably prevailed throughout most of Beringia (Hutton 1968).

THEME: TRUE NORTH
SUBTHEME: BERINGIA

STORY: WEATHERING

The rugged ridgetops of the Northern Ogilvies are typical of unglaciated areas. These castle-like tors are residual masses of rock which remain when the rest has weathered away. The weathering process requires a long time and is evidence that this area has undergone, unlike most of Canada, an extremely long period of weathering without the intervention of glacial ice.

Weathering is the process by which rocks are broken down by water, wind, temperature changes and organisms. Water, the primary agent in this breakdown, percolates into cracks and joints. It expands as it freezes, thereby widening cracks and shattering fractured rock.

The fine grained sedimentary rocks of the central Ogilvies with fine jointing and bedding planes shatter and appear as huge rounded piles of rubble. The limestone to the north characterized by a coarser jointing pattern weathers as large blocky rubble. Water dissolves the calcium carbonate of the limestone resulting in the pitted surface of the tors and occasional caves. More resistant blocks remain along the ridgetops as tors. Weathered rubble called colluvium covers all the steeper slopes.

Pediments, the long gradual lower slopes of the unglaciated areas reflect the underlying rock surface which was weathered over time by water percolating down slope. Deeply weathered bedrock is exposed by road cuts on Eagle Plains.

During glacial times, powerful winds from the huge ice sheets were a more dominant agent of erosion, helping to carve the barren landscape of Beringia.

THEME: TRUE NORTH
SUBTHEME: BERINGIA
STORY: REFUGIUM

During the glacial maximum, Beringia remained beyond the ravages of the ice. From a biological view point, Beringia served several functions: it allowed for the survival of species during the glacial periods, it became a source of species abundance for dispersal into the newly exposed areas as the glaciers retreated and it allowed for speciation or evolutionary divergence of species which were isolated from other populations south of the continental glacier.

About 33% of the terrestrial mammal fauna in Yukon are Beringian in origin (Youngman 1975). Many species are endemic to Beringia. Faunal examples of Beringian speciation are numerous. There are subspecies of red-backed vole, siberian lemming, grizzly bear, mink and moose (Youngman 1975). The glaciers separated Beringian species from species south of the glacier. Comparative examples are the collared pika of Beringia and the Rocky Mountain Pika; the arctic ground squirrel and the columbian ground squirrel to the south; and the siberian tit, found only in the northern areas and the boreal chickadee (Cannings unpubl.). The valley glaciers in the southern Ogilvie Mountains isolated pockets of unglaciated areas from Beringia proper. These areas likely also served as centres for speciation. Examples are subspecies of singing vole, arctic ground squirrel and varying hare (Youngman 1975) as well as a number of plant species (Porsild 1951).

Entomologists studying the distribution of northern insects suspect that the insect fauna of the high Arctic originated from Beringia sources (LaFontaine and Wood in prep.). By comparing the number and kinds of species in the northern glaciated areas to the same of Beringia, it is apparent that the refugium still has a greater faunal diversity than the glaciated areas and that colonization of these latter areas is the result of dispersal from Beringia.

Some species with poor dispersal are endemic to Beringia. Many species of moths and a number of butterfly species have first been described from the Dempster (Lafontaine and Kononenko, Lafontaine et. al. 1983, Lafontaine et. al. 1982, Troubridge et. al. 1982, Troubridge and Philip 1982, Tshistjakov and Lafontaine 1984). One species of moth (*Acsala anomala*) has evolved with rigid particularities to the dry tundra of Beringia, as found at Windy Pass (Lafontaine et. al. 1982). The females have only vestigial wings and are flightless, hindering dispersal by flight. They crawl through rocks of the scree slopes while the males bask in the sun. Their larvae feed specifically on the black foliose and crustose lichens also found on these rocky slopes. A recent discovery was made of one of Yukon's only worm's (Smith et. al. in press). This worm was found in the unglaciated area of the Richardson Mountains continuing to live in an environment which probably mimics that of Beringia.

At least 6 fish species of the upper Peel River drainage are considered relic populations of Beringia (Bodaly and Lindsay 1977). The upper Peel River was blocked by ice on its lower sections. Water backed up and eventually connected with the Yukon River waters. Recent study of protein analysis of fish shows that long-nose suckers of the Peel and Yukon Rivers are similar while fish from the Eagle River are different from both (Dillinger et. al. in press). Long-nose sucker in Chapman Lake suggest a long period of isolation (Dillinger pers. comm.).

Discoveries of new species and new information about distribution and species similarities and differences continually emerge from work and collections within Beringia. Much is still unknown and theories of long standing may be swept aside by the evidence of new finds. Anyone can be a discoverer. The species have always been there, but the easy access to these areas, as provided by the Dempster Highway, plays a large role in revealing the significance of Beringia as a refugium.

(See also Appendix, "Paleontological Record of the Dempster Highway Corridor).

THEME: TRUE NORTH
SUBTHEME: BERINGIA
STORY: HUMAN OCCUPANCY

For many years scientists have undertaken research to document the role of the Bering Land Bridge between northeastern Asia and northwestern North America. Archaeological surveys carried out in Siberia and in Alaska and Yukon have attempted to trace the human migration from the Old World and to establish the time period of the first peopling of the New World.

Detailed studies of glaciation in Alaska clearly indicate that the drainage basin of the Yukon River was never glaciated. The large refugium area of Yukon's interior plateau could have been reached by following the Peel River, the Porcupine River, or the Teslin and Tanana rivers. Geologists agree that soon after deglaciation an ice-free corridor ran up the Mackenzie valley, making it a possible route to the south (Leechman 1946).

The most northerly route possible into the Yukon interior followed the Yukon River to the Porcupine, up the Bell River to its headwaters and over the Rat River portage to the Mackenzie River. This is the same route used by the Gwich'in prior to European contact and by the Hudson's Bay Company to reach their western posts from the Mackenzie River (Leechman 1946). A second possible route may have followed along the Yukon River to the Pelly River, across to Frances Lake, down to the Liard River and over to the Mackenzie River. As the interior of British Columbia was thought to be ice-free soon after the Mackenzie Valley, this could have been used as a continuation of the route south (Leechman 1946). A third possible route may have followed the Yukon River to the headwaters of the Tanana River and along a broad open valley to Klwane Lake, Lake Laberge, Teslin Lake, and south into British Columbia (Leechman 1946). A coastal route was also very possible.

According to some archaeologists the term "migration" is misleading in reference to the peopling of North America, implying a "deliberate journey from one place to another" (Leechman 1946). The Beringia theory describes a slow and gradually expanding diffusion of people into the area. Movement may have occurred as people's knowledge of an area grew, and the area occupied by them would have expanded as the group increased in size over the years. Archaeologist Douglas Leechman (1946) has calculated that a group averaging less than two miles per year could reach the bottom of South America from the Yukon in 5,000 years.

Site for Interpretation:

Windy Pass, Rock River, Arctic Circle, Tombstone Mtn. Viewpoint

THEME: TRUE NORTH
SUBTHEME: TUNDRA AND PERMAFROST

STORY: PERMAFROST

Permafrost is quintessentially a northern phenomenon. Understanding of the northern tundra environment requires understanding of how permafrost shapes the landscape.

The details of soil composition such as soil texture and moisture content, or location particulars like aspect and fire history, have a profound influence on the nature of visible permafrost features. A permafrost environment is not static and changes that occur to permafrost as a result of seemingly quite minor changes in the heat balance produce a dramatically varied landscape along the Dempster Highway Corridor. Occasionally, permafrost is exposed at the head of a recent slump or excavation. Most often, however, we only know that the ground is frozen by noting related surface features.

Thermokarst, ground collapse due to melting permafrost, is seen along the highway, often caused by the disturbance of road construction. Large ice wedge polygons have been exposed next to the highway in the Blackstone Uplands. Extra heat absorbed by the ground, due to stripping of the vegetation or just through the roadbed, has caused melting of the huge masses of ice. The polygonal pattern of the collapse shows clearly where the ice is melting out.

Thermokarst ponds, roughly circular pits filled with water from melting ground ice, are plentiful in the Blackstone Uplands and north of the Richardsons (French Heginbottom 1983). They indicate the presence of large amounts of ground ice. Ponds and lakes are constantly changing shape as the surrounding banks thaw and collapse. Drunken forests with trees leaning over thawing ground are common.

The motorist will notice an abundance of landslide scars along the highway. Active layer detachment slides are common in the Engineer Creek area (Rampton 1980) when the saturated active layer becomes detached from the slippery permafrost base. Retrogressive thaws slumps can be seen in the Blackstone Uplands (Rampton 1980). These slides, common in permafrost areas, are induced by changes in heat and moisture balance.

A less spectacular, but no less important, type of mass movement of permafrost environments is solifluction. Solifluction takes place on moderate to steep slopes resulting in lobe like forms which "flow" slowly downhill (centimeters per year).

Earth hummocks are another common permafrost landform visible along most of the highway from the Blackstone uplands to Eagle Plains and east of the Richardsons. The irregular ground surface can turn an anticipated pleasant stroll into an exercise session. The hummocky ground is the result of frost action in fine textured sediments (French and Heginbottom 1983).

Rock glaciers, ice cored or ice cemented rubble, are found in many cirque valleys of the southern Ogilvie Mountains. (Hughes, Rampton and Rutter 1972, Hughes and Van Everdigen 1978).

Other interesting features found along the Dempster corridor include closed system pingos (Hughes and Van Everdingen 1978) and seasonal frost mounds (Pollard and French 1983 1984). These mounds are formed by hydrostatic pressure between frozen layers causing doming of the ground surface. Polygonal peat plateaus occur in some wetter areas (French and Heginbottom 1983).

THEME: TRUE NORTH
SUBTHEME: TUNDRA AND PERMAFROST

STORY: WIND AND SNOW

Linking the words northern and climate evokes a picture of severe winters and desolate windswept landscapes. The winter climate of the Dempster conforms admirably with this picture. Although technically a Boreal climate rather than a true Arctic climate, (which is found beyond the treeline) the winter climate of the Highway Corridor is dominated by "arctic air streams coming from the pack ice of the Arctic Ocean". These airstreams control the weather and exclude any air flow that may import heat from the south (Hare and Thomas 1979). Not surprisingly, cold air masses may cause -40° C temperatures that last for weeks on end (Calef 1984).

More than half the annual precipitation comes as snow (Calef 1984) and snow accumulation constitutes an ongoing road maintenance problem. Cold temperatures in the Richardson Mountains are often associated with high winds and road closures due to drifting or white-out conditions are common. The steep valleys of the North Klondike River are prone to avalanches.

In summer and fall the major influence on climate is a westerly airflow. The southern Ogilvie Mountains are a major obstacle to warmer air from the south. They form therefore the border of warmer more continental summer weather similar to Dawson City. Temperatures as warm as 30° C are possible. The strategic location of the Ogilvie Mountains makes them the focus of frequent summer storms.

Although summer precipitation is quite low along the highway, the average low temperatures keep evapotranspiration rates low as well. As a result, one sees a seemingly moisture rich landscape in an area of low rainfall. The available moisture combined with long summer days transform the Dempster Corridor into a verdant landscape for the short summer season.

THEME: TRUE NORTH
SUBTHEME: TUNDRA AND PERMAFROST

STORY: ANGLE OF THE SUN/INSOLATION

Tundra and permafrost are a response to cold average annual temperatures. In broadest terms, the north is cold because incoming radiation from the sun is exceeded by heat loss from the ground to space.

To understand the extreme nature of northern climates - the sort of climate that expresses itself through tundra and permafrost - you need to understand the reasons for the midnight sun of summer and the darkness at noon of winter. The earth is inclined of its axis approximately $23 \frac{1}{2}^{\circ}$ from the plane of its orbit. During northern summer, the top of the globe is inclined toward the sun. The sun sinks only a short distance below the horizon and daylight hours are long.

If you travel far enough north you experience 24 hour-a-day sunlight for some part of the summer season. Eagle Plains, for example, enjoys a potential $20 \frac{3}{4}$ hours of sunlight on every day in June. Inuvik, at 68° N latitude has 24 hour-a-day sunlight on every day in June and some part of July. Conversely, during northern winters the hours of sunlight decrease until, at Inuvik, the sun does not rise during December and most of January. The long winter nights are an opportunity to view the spectacular northern lights.

The solar radiation of long summer days does not counterbalance the almost continuous cooling during long winter nights. The angle of the sun is always oblique at high latitudes and, although low angle sun makes for stunning visual effects in the Ogilvie and Richardson mountains, it is not a very efficient heater of the earth. Rather than striking directly, the sun's rays reflect off the earth and atmosphere and return to space having left relatively little energy in the ground. The highly reflective characteristics of ice and snow - called the albedo - also tend to minimize the effectiveness of the summer sun.

Mean annual temperatures of -10° at Inuvik and -6° at the Klondike highway camp at the southern end of the Dempster reflect the negative heat balance of this northern land.

THEME: TRUE NORTH
SUBTHEME: TUNDRA AND PERMAFROST

STORY: VEGETATION

The most spectacular feature of the tundra vegetation is the expansive blooms of wild flowers. This experience is best enjoyed with a first hand approach by the traveller. The colours visible from the shoulder of the road pique the awe of any traveller.

The northern growing season is brief. The frosts of winter past have barely subsided in June when they commence again in late July. Plants concentrate their flowering activities in this brevity making the tundra seem to burst alive with vivid energy in a moment. With so short a season to grow, flower and produce seed, many tundra plants are perennials, living for many years and flowering each summer. For other plants, it is too much to flower each summer and they flower only every other summer. The evergreens, like low bush cranberry and heather, take a different tactic; by virtue of their persistent stems and leaves, they have only to flower and seed each year.

Some flowering plants, like the woolly lousewort, challenge the snows of late winter, often appearing up through the snow cap. These plants, like so many other tundra and alpine flowers, have a dense hairiness or pubescence which traps in the heat creating a warmer microclimate. Air temperatures are cold and the wind can be both dessicating and chilling. To avoid these influences, many plants grow close to the ground, decumbent, or grow in mats or cushions off the same root stock. Some plants store substantial amounts of hard earned food energy in large, starchy roots. The root provides a boost in food energy to the emergent flower in the spring when timing is so critical. Another tactic some plants express is to forgo growth propagation by seed and to add on vegetatively, growing larger each season off the same root stock or horizontal stem.

Most tundra plants tend to be low growing, but the sheltered draws allow a calm environment for lush growth of tall plants like delphinium and Jacob's ladder. Delicate plants, like the shooting star, also do well in the lee of the wind.

The cottongrass tundra provides the most striking image when the sedges are in seed and the white, fuzzy seed heads give the tundra the appearance of a white meadow.

THEME: TRUE NORTH
SUBTHEME: TUNDRA AND PERMAFROST
STORY: TRADITIONAL TRAVEL

Several modes of travel were used throughout the area depending on the season and the condition of the trail. Overland travel was most extensively used. Many families carried what they needed on their backs or on skin toboggans which they pulled using a tumpline. Dogs were not indigenous to the area and were later brought or traded inland, likely from Russian traders on the coast. These animals were used to pack supplies using dog packs. Dog pack travel was most suitable on summer overland trails. As more dogs became available and new technology was introduced, dog sled travel was used. Few opportunities allowed for passengers. People continued to travel by foot and on snowshoes. Women usually carried their babies with them on their backs, sometimes under their parkas and held in place with a beautifully decorated baby belt. Transportation by water was not used extensively, however moose skin boats were common on the Peel River from the mouth of the Wind River downstream.

Site for Interpretation:
Blackstone Uplands

THEME: TRUE NORTH
SUBTHEME: TUNDRA AND PERMAFROST

STORY: EFFECTS ON HIGHWAY CONSTRUCTION

Permafrost terrain causes unique problems for road and building construction. As long as the ground remains frozen it can provide a stable base for building. Any changes to the heat or moisture balance can cause ice rich ground to collapse, subside, or heave.

Building the Dempster highway was a learning process. Traditional road building technique requires stripping of the road right of way. A section of the highway in the Blackstone Uplands cleared in this way began to thermokarst before the gravel was laid and had to be abandoned. For the remainder of the highway, a thick gravel pad was laid over the undisturbed vegetation to minimize temperature fluctuations. Trenches were dug uphill from the highway to channel water seepage in the active layer of the soils. Another recent technique used in permafrost areas involves laying an insulation or moisture barrier in the roadbed. This was used as a test section near the Eagle River bridge (French and Heginbottom, 1983).

Along many rivers (including the north Klondike, Rock and Vittrekwa Rivers) large accumulations of ice called icings or aufeis persist throughout the summer (French and Heginbottom 1983; Rampton 1980). Icings occur where water, trapped between the permafrost table and descending surface ice during winter, is forced to the surface as overflow. Culverts and road crossings often initiate icing development. Huge culverts are used to minimize the problem. Bridge construction in high use permafrost can be a major problem. The Eagle River bridge is suspended on pilons anchored deep in stable permafrost.

Permafrost imposes similar constraints on building construction. In Inuvik, houses are built on pilons and gravel pads insulate the ground surface. Water distribution and waste disposal is piped in insulated conduits called utilidors which are suspended above the ground surface.

THEME: TRUE NORTH
SUBTHEME: TUNDRA AND PERMAFROST

STORY: TUSSOCK COMMUNITY

The cottongrass tussocks are a major component of the Blackstone Uplands and Richardson Mountain plains. Tussock-forming sedge species grow in mounds or clusters with each year's growth of leaves collecting and adding to the cluster. Eventually, the tussock takes on a large size, some being one third of a metre high and equally wide. Walking on the tussocks is any thing but comfortable and fast.

Tussocks create their own micro-community. Permafrost is close to the surface. Cottongrass is able to withstand cold, wet roots and grow in this environment. As the tussock grows, it serves as a substrate or rooting medium for other plants, becoming decadent with a diversity of plants growing on the tussock. Low bush cranberry, bog cranberry, lousewort and weasel snout commonly grow on tussocks. The community of tussocks provides sheltered areas between the tussocks and a warm microclimate.

The flowering bud of the tussock cottongrass is nipped by willow ptarmigan and bog lemmings and voles "mow" the fresh leaves of spring's growth. Tussocks offer nesting areas to birds. This is especially important in a habitat defined by the absence of trees. A lapland longspur may find a concealed side cavity among the hanging leaves. Young willow ptarmigan scurry through the tussocks with some cover from terrestrial predators. Since the habitat is of low relief, a tussock can offer the best vantage or perch for predating jaegers, eagles or short-eared owls.

The tussock community is just one example of the detail of the tundra, but an important one.

THEME: TRUE NORTH
SUBTHEME: TUNDRA AND PERMAFROST

STORY: FRAGILITY

Northern ecosystems are characterized by slow growth, low productivity and low diversity. The flexibility or plasticity of northern ecosystems to respond to change is limited. Response time is long and alternatives are restricted. The fragility of the north is also expressed by the negative impact of southern industrial activities on northern systems. There are a number of vivid examples.

North American caribou, including the Porcupine herd, have been affected by the radio-active fallout of the Chernobyl accident in the Soviet Union. Global atmospheric air currents carry the radio-active chemical beyond its source and it is transported to Earth through rainfall. Lichens derive their nourishment and moisture from the atmosphere. They are natural vectors of the radio-active fallout to caribou. Lichens have a very slow metabolism, therefore they are very slow at completely consuming or turning-over the contamination (Allaye-Chan et.al. 1988). (Cesium has a half life of 30 years). This means that the effects of radio-active wastes, in this case the contaminants from Chernobyl, will affect lichens and the associated northern system (caribou) for years to come.

The winter diet of the Porcupine herd is 70% lichens. Caribou concentrate the lichen radio-activity. Studies have shown that caribou levels of contamination were high after the above ground testing of nuclear weapons and the British nuclear accident in the late 50' and early 60's. The Chernobyl accident increased contamination of radio Cesium by 10 (Allaye-Chan et. al. 1988). Collections from the Porcupine herd revealed levels of Cesium varying between 55 - 145 Becquerals/kg (Allaye-Chan et. al. 1988). Wolves and other predators accumulate radio-activity by a factor of 10 above caribou levels. No studies on human levels have been conducted for some time, although many northern native communities depend on caribou as their chief food source. Collections across North America have determined that radio-activity levels increase from west to east: the Porcupine herd has some of the lowest figures and the George River herd in Labrador and northern Quebec has some of the highest levels (Allaye-Chan et.al. 1988).

The synergistic affects of industrial activities in the South have generated a global warming trend to which the North will not be immune. From surveys of the winter range of the Porcupine herd, plant biomass is average to high compared to the winter ranges of other caribou herds (D. Russell pers. comm.). The availability of this food source in winter is limited by snow conditions (snow depth and snow hardness). The deeper or crustier the snow, the more energy it requires of the caribou to secure this needed food energy. One of the effects of the global warming trend that we are expecting is an increase in moisture at higher latitudes. In 50 years, the winter range of the Porcupine herd could experience higher annual snowfalls, limiting caribou food intake in winter.

The case of DDT pesticides and its decimating effect on Peregrine Falcon populations is another example of a northern summer resident of the North effected by activities in the South. Wintering peregrines contacted the organo-chlorine contaminant on their wintering grounds. The toxin manifested itself on the summering grounds of the falcons, through thin egg shells and weak young. Different races or breeding populations of peregrines winter in different regions. Some races, such as the tundrius of the North Slope, have not recovered from the

effects of DDT while the anatum race nesting in the Dempster Corridor appears to be coming back strongly.

The wintering grounds of other breeding birds of the Dempster Corridor, such as shorebirds, waterfowl and songbirds are also affected by southern industrial activities. Wintering grounds have disappeared or become affected by agricultural activities. Management of these migratory natural resources must now look beyond their immediate jurisdictional borders and be cooperative with agencies of other nations and continents.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: GRIZZLY

This regal beast of wilderness habitat creates a paradoxical situation: photographers, naturalists and sightseers marvel at grizzly bears and seek them out for a close up look, yet at close range the bear too often becomes a feared and dangerous threat to human safety and its destruction or removal from an area is demanded. Bear/human encounters have a nasty ring to them. And few will argue that grizzlies are not dangerous. The fact is, bears and people do not get along. Each is territorial. Each is aggressive. Each is dangerous to the other's survival. And that is basically why grizzly bears continue to roam freely and naturally in only the last vestiges of North America's wilderness. In pre-firearms native culture, the grizzly bear was believed to have great power and everything was done to placate and to show respect to the bear, else the consequences would be more grievous.

In North America, the grizzly previously ranged as far south as Mexico and east to Manitoba (possibly Newfoundland), (Craighead and Mitchell 1982). Its current range includes Alaska, Yukon, Northwest Territories, British Columbia, and western Alberta, with small isolated populations continuing to exist in Montana, Washington, Idaho, Wyoming and Colorado. Historically, bears were killed out of fear, for a hunting trophy, as a food source or destroyed to save livestock. These same reasons continue today, in addition to killing for reasons of nuisance habits of bears (e.g. campground garbage scavengers, threat to camper safety).

Grizzlies require a large home range. The abundance of food and its quality affects how much space is required. A mature bear knows its range with a strong familiarity, making traditional seasonal movements to areas of predictable food sources. A bear of the Dempster area requires a larger range than its southern cousins because the northern ecosystem has low productivity. Greater distances must be covered to encounter different habitat types offering different food sources. A female grizzly may habituate to a 300-400 square kilometre area. A male uses up to five times this area (Smith pers. comm.).

The low availability of high animal protein food in northern systems may be a key factor in limiting northern grizzly bear population productivity (Johnston et al. 1985). Northern grizzly populations reproduce slowly. A female is not sexually mature until 7 years old. A female in the Ogilvie Mountains managed to produce yearlings once every 5 years (Smith pers. comm.). To produce young every other year would be a good average. Its fairly obvious from this that reductions in bear numbers through hunting or poaching would not have to total many animals before it would have a long term impact on the population size.

Grizzly bears are omnivorous. A bear's energy needs change seasonally and the bear changes its food habits to meet these needs. A full elaboration of bear foods can be found elsewhere. One important food to grizzly bears in the Dempster corridor are berries. Berries are a source of high energy food available to bears in late summer and fall prior to the denning season. This period is a critical time for weight gain for hibernation. During those years when the berry crops fail, bears must seek the equivalent energy in other food sources, often travelling more and on occasion not achieving the necessary food intake.

Bear hibernation is an intriguing mystery. Body temperatures do not decrease appreciably. The heart and breathing rates are reduced. During the 7-8 month period that northern grizzly bears hibernate, they do not feed, urinate or defecate, yet some females are able to give birth.

There is no fixed criteria for suitable den sites. A bear usually digs its den each year. In mountainous areas, southerly slopes at about 1200 m elevation are suitable, but the site will depend on many factors. Dens are usually in areas of snow accumulation. Dens may collapse following bear emergence in the spring or may persist.

Breeding occurs in late May/early June. At this time, mature males are very mobile seeking receptive females. An interested male stays with a female for about 2 weeks until she comes into estrous. Challenges between males over females are common. There are many reports of breeding males killing the female's accompanying cub. The reasons for this are speculative. By killing the offspring, the female may come into cycle and be receptive or the genetic stock of the offspring may be considered a threat to that of the male.

All the Dempster area is grizzly country, from the spruce forests of the lower highway to the tundra of the Richardson Mountains and beyond to the MacKenzie Delta. Although the animal may not be visible, its signs are often there: tracks on the shoulder of the road, tree scratchings and rubbing posts, digs for roots on the river bars and the hillsides and scat. A hiker and camper should always be on their guard. Yukon Renewable Resources has substantial information on how to behave in bear country.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: DALL SHEEP

Dall Sheep are a thin-horn sheep and the most numerous type of wild sheep in North America (Hoefs et al. 1985). There are about 100,000 thin horn sheep in North America: 85,000 are the white Dall sheep and the balance are the darker Stone sheep (Hoefs et al. 1985). Thin horn, expressly Dall sheep, are able to inhabit areas beyond the Arctic Circle, making them a truly northern sheep.

Within the Dempster Highway Corridor Dall Sheep occur in four distinct areas: Mount Cronin in the southern Richardson Mountains, and in three different areas of the Ogilvie Mountains which could be considered as the north, central and southern Ogilvie Mountains (Hoefs 1978, Yukon Game Branch 1979, Stewart 1980a, 1980b). There are two other populations of Dall sheep in the Richardson Mountains but they are beyond the Highway Corridor (Hoefs 1978, Barichello et al. 1987).

One area of sheep use visible from the highway is a lambing area in the southern Ogilvie Mountains. Nursery bands of ewes and lambs and young rams (<2 years old) use the mountain slopes in June and again in August. During the June nursery period the ewes are sensitive to disturbance.

The sheep habitually use the same range each year. Lambing and nursery areas are often where spring green-up occurs early. The emergence of the first green growth and succulent flowers of the season, such as Richardsons anemone and mountain avens are an important food source and represent a major contributor to lamb survivorship (Heimer 1987). Sheep mortality can be highest with the young age groups of lambs, with the death rate declining as the animals mature.

Older rams (>2 years old) socialize in segregated groups throughout the year. They briefly join the ewes during the rut or breeding season in November and December. Dominance in the social hierarchy is ranked by horn size, among the males. Homosexuality is normal and only the dominant ram breeds with the ewes. (Ewes also have horns which mark their age. Some people confuse the horns of a ewe with those of a nanny goat).

Sheep are highly successful in exploiting a poor quality range where few other herbivores could survive (Geist 1971). In the wind swept and arid environment of the alpine, the forage is a poor quality, being hard, abrasive and dry. Sheep can not digest this food directly but their rumen bacteria breaks it down and ferments it. The fermentation breakdown products are what actually nourishes the sheep. The qualifying provision for this digestive system to succeed is that the forage must be of sufficiently high protein content for the rumen bacteria to survive. If the bacteria die, so must the sheep. For this reason, some sheep found dead in the winter may also have a gut full of forage. The molar teeth of sheep are also adapted to the alpine forage. They grow continually and so can accommodate the abrasive powers of grinding dusty and gritty food.

Good sheep range often means an available food source in an area which offers a good vantage of approaching predators and a ready escape terrain, such as a steep rock face or scree slope. Winter range is often windswept slopes where forage is exposed and available. Sheep are loyal to their home range and rather than

disperse from an area they will pass down this range loyalty from one generation to the next (Geist 1971).

The greatest predator of sheep is man. Wolves can also depend heavily on sheep. Coyotes, wolverine, grizzly bear, golden eagle and lynx are other predators of the mountain monarchs, particularly the young.

Visible from the highway in the central Ogilvie Mountains is a traditionally used sheep lick. The minerals of Engineer Creek create a licking areas for the sheep, who frequent the river valley bottom most heavily in mid-June during the hours of 10 a.m. to 2 p.m. (Stewart 1980a). Although licks have traditionally been called "salt" licks, more recent work suggests that the driving influence of sheep to lick is the acquisition of magnesium and calcium rather than salt (Heimer 1987). During spring green-up, the forage plants cause a high level of potassium to be ingested which offsets the magnesium and calcium balance, creating an ionic imbalance in the sheep's physiology. This ingestion of spring green-up plants is about the same time that sheep concentrate at licks. Licks are also important to lactating ewes as a calcium source or to any sheep after the winter period. Calcium is lost from the bone in winter and is required in the spring and summer for milk production and skeletal reconstruction. Licking replenishes the body calcium needs (Heimer 1987). Rams may go to the licks earlier while ewes are still tied to the lambing cliffs.

Dall Sheep are a disturbance-tolerant species. They have a strong affinity to their respective ranges and will continue to function in these areas as long as they are not killed and their ranges remain habitable.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: MOOSE

During the last century, they have been expanding their northern range (Coady 1982). Moose of the Dempster area inhabit the boreal forest and less commonly, tundra. A year round resident to the Dempster area, moose may make elevational changes with the seasons to avoid deep snow in the winter. Moose winter in the birch forests of the Eagle Plains and the river valley bottoms.

Moose are browsers, but on occasion graze in open meadows.. In summer, they commonly browse on willows shoots or feed in ponds, often submersing their entire head to reach the aquatic plants. On especially hot days, the same ponds may offer welcome relief from the heat. Willow may represent climax habitat such as on the shrub tundra of the Blackstone Uplands, or it may represent seral growth as in the riverine areas or in burn areas.

Seral growth (regenerating forest) is lush and highly productive. Wild fires play a significant role in boreal forests, by redistributing growth nutrients for a young and productive regenerating forest. In a mature spruce forest, the forest canopy closes and undergrowth is minimal. A wild fire opens this canopy allowing light to the understory where young growth (sometimes of willows) is nourished from the nitrogen in the burnt soil. During the initial years of this seral growth, if willows proliferate, moose stand to do well in the area.

Breeding behaviour is synchronized within a 2-3 week period in mid September. The calving period of late May is also synchronized. In some regions of Alaska where there has been excessive bull-only hunting, the male:female ratio can become so skewed that many receptively fertile females do not get bred during peak rut because the few males can not find them. The female will have a second heat and breeding will occur later in the rut. This will affect a later date of birth (Coady 1982).

The calf/cow bond lasts through the winter. With the delivery of another calf in the spring, the cow may chase the now yearling off or continue to accept it until the fall rut. A cow that has fed well throughout the summer may produce twin calves.

Moose population size fluctuates naturally. Hunting can compound the lows of these cycles. Natural predation by wolves in the winter and bears during calving then takes on a very significant role in keeping the low moose population down.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: WOLVERINE

Traditional northern native beliefs considered the wolverine to be one of the greatest animal spirits and the most demanding of respect. The dangerous powers meant the wolverine had to be treated with strict accordance to tradition. Trappers curse the animal for robbing their trapline of valuable marten, mink or lynx. Urban dwellers in a wilderness setting yearn for the life experience to catch a glimpse of this elusive and mysterious creature.

Wolverines inhabit the northern boreal regions and northern tundra of Canada. Within this zone, they use a range of elevations and it is not uncommon to see one on an alpine ridge nor in the valley bottom.

The wolverine is a solitary predator of the weasel family, needing large expanses of wilderness for survival. A male wolverine uses an area of 2000 square kilometres for hunting and maintenance while a female uses smaller areas of 400-500 square kilometres (Wilson 1982). As with other wilderness animals, there is no exact formula to calculate range. What is important in defining the land requirements of wolverine is the availability of both food and denning sites (Banci 1987). Large tracts of undeveloped and diverse habitats offer the most ideal ranges. The Dempster is good wolverine habitat.

Wolverines are omnivores, eating anything from carrion, berries, and mice to sheep or caribou. Respected for their voracity and strength, wolverines hunt solo, not hesitating to kill prey as large as caribou. Wolverines may cache their uneaten food and then scent it. Their scent is foul and strong. Tales abound of wolverines vandalizing cabins and field workers' food caches, spraying the contents with urine and leaving a most odorous scent.

Wolverines have low productivity. This is particularly significant in the North where food is available but limited or available only over large areas of travel. The net effect is that females may only breed every other year in areas of the Yukon (Banci 1987).

By virtue of its solitary nature, elusive existence and large range size, the wolverine is an exemplary species of wilderness.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: WOLF

To the aboriginal hunting societies of North America, the wolf epitomized a skillful and courageous hunter with a strong social alliance. The traits of the wolf were admired and incorporated into traditional rituals, ceremony and beliefs. It was an animal of respect (Lopez 1978).

In other cultures, the wolf has a history of being maligned. In the middle ages, the wolf conjured up an image of evil, darkness, savagery and hate. Werewolves were commonly burned at the stake for their sins of lust and unhuman acts. Children who were not born normal and were misunderstood, such as mentally retarded or autistic children, were condemned to life as wolf-children, enduring all the hardships and aches of a human thought to be unhuman. These beliefs were deep rooted. The wolf represented evil in the darkest form (Lopez 1978).

One anomaly to this image is the tale of Ramulus and Remus, the founders of Rome, who as twin sons of Mars were banished to the wilderness where they were raised by a benevolent wolf-mother.

The current world range of wolves is reduced from the original range - with the species eliminated from many parts of Eurasia and the lower States. Considering the extent of habitat types of their past range, as a species wolves showed immense skill of adaptability, inhabiting cold arctic tundra environments and warm, southern grasslands. Wolves range throughout the Dempster Highway area.

Referring to the significance of the social structure of wolves, one of Murie's strongest impressions, after years of study in Denali, Alaska, was the friendliness of wolves towards each other (Lopez 1978). The social structure is the cohesion of the pack, which also represents the hunting strategy. The rearing of cubs is an integral part of the social structure where the parents bond strongly to the young, taking time with them for play and caring.

Wolves kill the old and weak in ungulates, but so do they kill in excess, leaving the prey to waste and so do they kill animals in their prime. Wolves with young tend to be stationary during the summer, hunting in the den region. Subadults, on the other hand, may travel with caribou herds throughout the year. Wolf hunting techniques vary with the pack and the quarry. Sheep may be a relatively difficult ungulate prey to capture with predictable regularity (Sumanik 1987). Attacking sheep, wolves may force them from a steep cliff or catch them at the base of a cliff. Their jaws have strength enough to crush the bones of a moose, getting at the bone marrow. The only part of the prey that is ignored is its stomach.

Rabies are an important mortality factor in northern Alaskan wolves, related to the cycles of rabies in Arctic Fox. The only enemy to wolves is man. Wolves are listed on Appendix II of the Convention On International Trade in Endangered Species of Wild Fauna and Flora (C.I.T.E.S), meaning the species is "not threatened with extinction but could become so unless trade is restricted".

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: FALCONS

The Peregrine Falcon or "Bird of Kings," (Frisch 1987) or Peregrine Falcon is a species which looked like it was threatened with extinction but which is now showing a strong come-back. Pesticides, such as DDT, used in agriculture applications concentrate in the upper end of the food chain, the position which peregrines occupy. Contaminated insects are consumed by passerines (perching birds) and shorebirds which are preyed on by peregrines. With each progressive link in the chain, the level of pesticide contamination magnifies. The pesticide manifested itself with peregrines through thin egg shells which crushed under the weight of the incubating parent. The net effect was failed productivity. Those races and populations of peregrines which winter in areas continuing the use of DDT remain affected.

Peregrine falcons are revered for their agility of flight and their striking tactic of stooping on their prey. From a stationary look-out perch or high in the sky, a peregrine can dive on its prey, attaining speeds of 160-300 kmph, and knock its prey a killing blow or clench it in its talons. Other acts of skilled flying include aerial food drops between two birds in flight. Food transfers of this kind can occur during courtship and incubation when the male brings food to the female, or during training of the fledglings. With the adults, it is not uncommon to see one bird roll over on its back in flight to take the food offered from the bird above. Peregrines in the Dempster area prey heavily on shorebirds, also hunting ducks, smaller falcons and songbirds.

Breeding peregrines make pair bonds. The male usually arrives back at the nesting area prior to the female. Each pair will use the same general area for breeding annually, yet alternating the specific eyrie (falcon nest) each year. In the Dempster area, peregrines nest on ledges of large rock cliffs adjacent to water. Falcons do not build a nest but scratch a rock ledge, usually with the provision of a protective overhang, on which to lay the eggs or use a golden eagle stick nests. Each parent incubates the eggs and cares for the young, although the larger female may spend more time at it. The period of courtship, incubation and rearing is an especially sensitive time for the birds. Peregrines can not endure much disturbance at the nest site. Failed breeding, brought on by disturbance, may cause the birds to avoid the area the following year.

Robert Frisch called the Gyrfalcon the "King of Birds" - for its size, the largest of our falcons, and for its grace of flight. The gyrfalcon is a year round resident to the North. Its winter home includes here among the Ogilvie and Richardson Mountains. Winter food is limited to ptarmigan which makes the cycle of ptarmigan and gyrfalcons closely linked. A recent study in the Ogilvie Mountains has shown that if there is too little food (i.e. ptarmigan) during courtship, in late March and April, the female will not lay eggs (Barichello pers. comm.). It is her clue that there is not enough food to go around and make the effort of breeding a success.

Perhaps a strategy of staying the winter, gyrfalcons are able to get with their breeding program early, relative to other falcons. Gyrfalcons lay their eggs in April when air temperatures still hover well below the freezing level. By the time the eggs have hatched in May there are other prey items available. Ptarmigan remain

important but are offset by ducks, shorebirds and arctic ground squirrels (Barichello pers. comm.). The timing of the young fledging from the rock ledge in late June coincides with the emergence of the young of their prey. Even an unskilled hunter should be able to attempt a meal of an unaware young ptarmigan.

The concentration of peregrine and gyrfalcons in the Dempster area has been cause for concern (Mossop et. al 1978, Nelson 1977). The accessibility of the nest sites from the highway and the sensitivity of the birds during early periods of the breeding program are a management challenge.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: GOLDEN EAGLE

The density of golden eagle nest sites in areas of the Dempster corridor are some of the highest in Yukon and possibly North America (Mossop in prep.). In the Dempster area, golden eagles build large stick nests on rock cliffs in the mountainous areas. The nests may be used repeatedly but there are often alternates. Breeding need not take place each year. One theory for the annual change of nest use is to avoid parasite epidemics. By breaking the cycle of use, so to is the parasite cycle broken.

Golden eagles usually lay two eggs but very often only one young survives - that being the first born and thus the larger of the two. Golden eagles are large aggressive birds, with wing spans of up to $7\frac{2}{3}$ ft. The young are aggressive among themselves, the larger one usually killing the younger either physically or forcing it out of the nest. The young are also aggressive towards the adults. This may be one reason why the young are soon left alone in the nest, fed by a quick food drop from a parent.

Golden eagles, unlike bald eagles which will scavenge for food, prefer to kill their food. On their nesting grounds, they prey predominantly on arctic ground squirrels, ptarmigan and rabbit. In years of ptarmigan or ground squirrel scarcity, golden eagles and gyrfalcons compete for the same food resource.

Golden eagles have a broad and long wing span suited to soaring slowly on geothermal uplifts. They can also cut the wind and dive on their prey or do it in play.

The young of golden eagles are a long time in the nest, relative to the large falcons. Although the eagles arrive back from the south (in years of high prey abundance some eagles may overwinter in the North) in April and May to begin breeding, the young require about 2 months for development between hatch to fledge (Mossop et. al. 1978). Young hatching in late May/early June will not fledge, on average, until August.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: ARCTIC GRAYLING

The most distinguishing feature about Arctic Grayling is the enlarged dorsal fin.

Ubiquitous in its continental range, grayling inhabit the clear waters of large, cold rivers, rocky creeks and lakes (Scott and Crossman 1979). They inhabit most, if not all, of the rivers of the Dempster area. A warm springs tributary of the Ogilvie River serves as an overwintering site for grayling (Von Finster pers. comm). The mouth of the tributary is used as a congregation area before and after spawning for 100-200 fish. Areas of aufeis also offer overwinter areas as ground water which causes the ice build-up continues to flow throughout the winter.

Grayling are spring spawners. Immediately after break-up, grayling move from their overwintering areas of deep water and congregate at creek mouths prior to migrating upstream to spawn. The creek water must be cold and clear. During courtship, the large dorsal fin of the males becomes erect and is used to defend territory among males. To spawn, the male drifts beside the female, folds his dorsal fins over her back almost to clasp her, both arch and the eggs and milt are released into the gravels (Morrow 1980).

The entire diet of grayling, through all life stages, is insects. Grayling are surface feeders, taking advantage of the many hatches of emergent aquatic insects. The extent of territoriality is influenced by the abundance of food.

The ease of capture of grayling, their relatively late maturity and slow growth, and their need for clear (silt free) water makes them vulnerable to over exploitation.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: WHITEFISH & INCONNU

Broad whitefish are a northern fish, distributed in the fresh and brackish waters of arctic drainages of north west North America and northern Eurasia (Scott and Crossman 1973). In the Dempster area, they are especially common in the Eagle and Peel Rivers.

Broad Whitefish are anadromous. Adults overwinter in brackish water, as in the Mackenzie Delta, or the deep waters of the rivers. Spawning takes place in the fall but the migration upstream to the spawning beds may begin as early as June (Morrow 1980).

Characteristic of arctic fish, growth is slow. An eight year old fish may only be 40 cm long (Morrow 1980). Adults attain weights of 2 kilograms. Whitefish are bottom feeders, feeding on midge larvae, snails and crustaceans.

THEME: TRUE NORTH
SUBTHEME: CREATURES OF WILDERNESS

STORY: ROBERT FRISCH (1930-1985)

Robert Frisch was an untiring naturalist who preferred to spend his life hiking the mountainous areas of northern Yukon, being a part of the wild, natural world. His probing mind and ambitions as an unrelenting naturalist continually led him off into the mountains, particularly in the Richardsons and Ogilvies, where he made calm observation and fastidious notes.

One of Bob's greatest contributions to knowledge of the Dempster area was his treatise on the bird fauna of the area, Birds by the Dempster. He was responsible for the first discovery of breeding nest sites of surfbirds in Canada. He and his wife, Julie, spent hours in the mountain tundra habitat dragging and searching for nesting surfbirds. He thought the surfbirds should be there. And they were. He later discovered more nests, both in the Richardsons and the Ogilvies.

Bob was a botanist who made major contributions to a treatise on Yukon plants, authored by John Trelawny and contributed to William Cody's Flora of Yukon, yet to be published. Although he would not perhaps have called himself an entomologist, the flightless crane flies which crawl on top of the snow during warm spring weather were cause enough for Bob to get down on his hands and knees with a magnifying glass to inspect them.

Bob saw the birds and plants and perhaps insects not as species on a checklist but as entities with personalities. He noted their mannerisms and described them through metaphors.

Bob was an endearing man. To come to know Bob was to feel the comforts of a warm heart and a patient, humble listener. It was also to know the spark of focused physical and intellectual energies, driven by a commitment.

THEME: TRUE NORTH
SUBTHEME: PATTERNS IN THE LANDSCAPE

STORY: MOUNTAIN BUILDING

The spectacular scenery of the Dempster Highway is due in part to the mountains through which it passes. The mountains are the result of geological processes associated with continental plate movement and erosion.

The southern Ogilvie Mountains are the most rugged mountains of the Dempster Corridor. Collision of the North American Continental plate with the island arc plate during the Jurassic resulted in extensive thrust faulting in the Ogilvie Mountains. Distinct breaks in slope on the mountains along the North Klondike valley mark the location of faults where older rocks now overlie younger rocks (Templeman Kluit 1979, Abbot pers. comm.).

The rugged Tombstone Range is syenite intrusion associated with cretaceous igneous activity through the Canadian Cordillera. The syenite is probably derived from continental coastal rocks which were forced down as the North American plate collided with the island arc, and partially melted (Templeman Kluit 1979). This relatively recent rock is more resistant than the surrounding quartzite and therefore after erosion by water, glaciers and wind the Tombstones stand above neighbouring mountains.

Limestone, shales and other clastic sediments of different ages are found through the central and northern Ogilvie and the Richardson Mountains. Most of these rocks were deposited on the western margins of the North American continental plate. During the late Proterozoic, limestones and shales accumulated on the Continental Shelf. Other marine sediments, mainly fine clastic sediments, continued to accumulate until Cretaceous time. During the Cretaceous, all these sediments were thrust faulted as the plates moved against each other resulting in the distribution of older limestones interspersed with younger sediments at the surface.

Some of the limestones are host to oil and gas. Others contain abundant fossils which record the type of environment in which they were deposited. Many of the landscape patterns are due to the distribution of these sedimentary rocks which weather in a variety of shapes and colours.

THEME: TRUE NORTH
SUBTHEME: PATTERNS IN THE LANDSCAPE

STORY: AUTUMN COLOURS

By late August and early September a change sweeps over the landscape. The tundra and alpine plants react to the frosty nights and the shortening day length. Preparing for the onset on a long, cold winter, the plants send their food energy out of their leaves and down to the roots for storage. The composition of the leaf pigments change and a veritable kaleidoscope of colours is revealed. No one could have orchestrated it more beautifully.

Driving the highway towards Inuvik, the progression of the intensity of colours becomes more advanced; the buck-brush hillsides turn shades of burnt-orange, willows and aspens turn a snappy yellow, the leaves of fireweed turn wine and bearberry changes to vivid red. The first frost of the season in early August shows up in the sedge leaves whereby the tips are nipped and it is only a matter of time before the plant shuttles its nutrients down to the roots.

A heavy snowfall or strong winds will send the leaves scurrying, shaking the fall images for the bleakness of winter's black and white colour.

THEME: TRUE NORTH
SUBTHEME: PATTERNS IN THE LANDSCAPE

STORY: DELTA BRAID

The patterns of the landscape of the MacKenzie Delta reveal a myriad of channels and lakes stretching out to the horizon. The expanse and pattern of this largest delta of Canada is best appreciated with an aerial view. The productivity of the river system is expressed by the thousands of waterfowl and shorebirds which nest in the area, the hundreds of schools of fish which inhabit the freshwater and estuarine areas and the diversity of marine, aquatic and terrestrial mammals. The human inhabitants live by the prosperity of the delta and have incorporated the pattern of the delta into their crafts. The delta braid is sewn on clothing, especially parkas, each braid pattern being unique to its creator. A major component of the NWT Dempster interpretive project, the MacKenzie delta and delta braid is a story best told in NWT (Hill 1988).

THEME: TRUE NORTH
SUBTHEME: PATTERNS IN THE LANDSCAPE

STORY: ENGINEER CREEK

Engineer Creek has an orange stain and in some areas is milky white. A number of warm sulphur springs and iron rich springs discharge into Engineer Creek over a distance of 25 km. The iron hydroxide gives the brown tinge to the water and the oxidation of dissolved sulfide into fine particles of sulfur gives the blueish milky colour. The water is not safe to drink. By the time the water reaches Engineer Creek Campground, the water is potable despite its unappetizing colour.

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: HAVE ALWAYS LIVED HERE

STORY: CREATION MYTHS AND LEGENDS

There are as many different accounts of how the world and people came to be as there are cultures in the world. Many northern Indian people share the story of Crow, also known as Raven, the creator or reshaper of many natural events. The Crow stories are important to northern Indian people for making sense of the world and they are similar in many respects to the Christian story of Genesis.

It was Crow who created the world out of its watery state, and out of loneliness, he created people. Crow is also a trickster able to outsmart many creatures, including himself. The quality of being a trickster is not only amusing but part of Crow's creative ability. It was through trickery that he was able to steal the sun, moon, and stars away from an old man who kept them locked away in a box. In Crow's world the absence of daylight kept the animals awake all the time chatter endlessly. He needed the daylight to quiet the animals.

The Crow stories are really a series of over twelve independent anecdotes, describing how Crow reordered the world and made it habitable for all creatures. Crow Makes Light, describes how he is able to steal light, which has been kept in a box, and allow it escape to the sky for the benefit of everyone. Crow Makes the World describes how he tricks an animal (the animal differs in many versions) to dive to the bottom of the sea and bring up the sand needed to create the earth's surface. In the Gwich'in version of this story, Beaver is the animal capable of reaching the sea bottom (Cruikshank 1978). Crow Makes People explains the creation of people and the roots of the moiety/clan system. Out of loneliness he carves a man and a woman from poplar tree bark and then breathes life into them. One becomes Wolf, as in the Wolf Clan, and the other is Crow, as in the Crow Clan. All their descendents take on the clan affiliation of the mother. Stories such as this one show how traditions were formed, and through storytelling, are passed on to the next generation. Several versions of the Crow story series have been recorded in My Stories Are My Wealth (Sidney, Smith and Dawson, 1977).

Other stories or legends are used as pedagogical tools for teaching accepted behaviour. Many of these stories describe a journey to the spirit world of a particular animal to learn about appropriate behaviour for that animal (Cruikshank 1978). Others describe the exploits and journeys of heroes with superhuman characteristics.

Mythology is passed on primarily through story telling. Some stories, though still part of the story telling process, relate to specific landforms and explain the names of these sites. The story of Beaver House Mountain, a large landform that resembles a beaver lodge, describes the time of the giant beaver, though much larger in mythology than in reality (Colin, N. per. comm.). There are many stories related to place names throughout the northern portion of the Dempster Highway Corridor. Most of the original names are Gwich'in and describe not only events or activities related to a site, but today stand as a reminder of extensive traditional use of the area by Gwich'in people.

Some of the Gwich'in place names can be found on current topographical maps, however work is underway to continue to document more native place names. It

would appear that all the major rivers, most mountain ranges, and many mountains from Tombstone Mountain north have Gwich'in names, with some overlapping Han names in certain areas.

Sites for Interpretation:
Beaver House Mountain

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: WE HAVE ALWAYS LIVED HERE

STORY: ANCIENT INDIAN AND PALEO-ESKIMO CULTURES

Evidence of human presence in the unglaciated areas of northern Yukon has been found to date to at least 24,000 years ago, representing the earliest known record of human occupations in the New World, although these finds are still somewhat controversial. Very little archaeology has been done in the Dempster Highway Corridor to substantiate this early record, or to formulate any patterns of land use and provide a very clear understanding of the technologies developed by early inhabitants of the area.

A total of approximately eighty-seven archaeological sites has been identified in the Dempster Highway Corridor as a result of surveys conducted by Cinq-Mars (1975), Van Dyke (1979), Gotthardt (1981, 1982) and Bussey (1985), and from brief local reconnaissances undertaken by Irving (1968) and Morlan (1970). Much of the evidence represents lithic scatters found on the surface and located on elevated bedrock ridges, knolls, and terraces, suggesting use of these sites as possible lookouts. Others represent quarry sites where tools were manufactured from local raw materials. From the location of the elevated sites and based on the abundant evidence of tool making, hunting is considered to have been the prime activity of the people using the area.

The area appears to have been most intensively used during the Early Holocene period (12,000-6,000 B.P.) when mammoth, bison, and caribou were likely hunted. Two technological traditions are tentatively identified in this period. The earliest, named the Northern Corderilleran tradition, is characterized by large stone spear points and blade tools. Elements of partly contemporaneous Asian-derived microblade industries (variously defined as Paleo-Arctic or Northwest Microblade tradition) in the Rock River headwaters may indicate the movement of a new population into the area, or contact and the sharing of ideas concerning technology between two populations.

The spread or establishment of boreal forest during the Mid Holocene Period brought a change to the area and the development of a technology characterized by a variety of stone tools associated with the Northern Archaic tradition or later Northwest Microblade tradition technology. This technology was well suited to the hunting of scattered large game species such as moose, caribou and bison. In addition it supported activities related to riverine and lake fishing and the trapping of small game animals. This essentially was the pattern of activity which persisted to the historic/contact period.

Within the Mid Holocene period, at about 3,000 to 4,000 B.P., the north slope and coastal areas of the Yukon became part of the Inuit cultural tradition. The earliest components, the Arctic Small Tool tradition technologies have been recognized as far south as the Trout Lake area of the northern Richardson Mountains. Later Norton tradition sites (dated to about 3,000 to 1,000 B.P. in Alaska) are also present in this area and to the south in the Rock River headwaters. Characteristic of Paleo-Eskimo technologies is the production of small, exquisitely retouched, stone tools.

The Late Prehistoric Athapaskan tradition is present in northern Yukon after about 1500-2000 years ago. Elements of the preceding Northern Archaic/NWMT technologies persisted into this tradition with the addition of new technological

elements such as tools made from native copper and an emphasis on tools made from bone and antler. Evidence suggests that during this period the area was probably used on a seasonal basis by neo-Eskimo people and ancestral Gwich'in.

(See Appendix for "An Overview of the Prehistoric Record in Northern Yukon")

Sites for Interpretation:

Rock River

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: WE HAVE ALWAYS LIVED HERE

STORY: PRE-CONTACT CULTURES

The Porcupine caribou herd has always been the mainstay of Gwich'in people. It has formed much of the lifeways, technology, and spiritual belief of those who relied on the herd on a regular basis, as well as attracting other groups into the area on specialized hunting expeditions. For the Vuntat, Tukkuh, and Tetlit Gwich'in, life without the caribou just could not be. The Gwich'in are the most easterly Indian groups to have a clan or moeity system although clans are less important the farther east one goes. General consensus suggests that there is an anomaly of three clans associated with the Gwich'in. The reason for the third clan is unclear (Helm 1981). Clans played a ceremonial role, particularly during feasts and potlatches.

Gwich'in families lived their lives around an annual cycle of seasonal movement primarily based on the migration patterns of the caribou, and on fish runs, root gathering and berry picking. For much of the year they lived in extended family groups, but on occasion, such as at caribou surrounds, caribou river crossing kill sites, and at locations where fish traps were used, many families gathered to share the work. These were particularly social times when important ceremonies were held.

Several different caribou hunting techniques were developed by the Gwich'in. Prior to the introduction of the rifle, large numbers of caribou were hunted using a caribou surround. These were constructed with branches, deadfall and trees, formed in the shape of an enormous old fashioned keyhole. Caribou were driven to the opening of the surround and on to the corral at the end, where they were speared or snared. Some groups used natural surrounds such as enclosed valleys for the same purpose. Other times people were used to form the surround. Large numbers of caribou could also be hunted at river crossings along the migration routes. Hunters, in canoes, paddled alongside the swimming caribou and speared them in the water (McClellan 1986). Regardless of the technique used, a great deal of effort was required to butcher the animal, dry the meat, and tan the skins. Everyone participated in the tasks including small children. Other animals were important as well. Moose were snared using a large braided mooseskin snare set on a game trail. Small animals such as rabbits, beaver, and muskrats were hunted on a daily basis using deadfall traps or babiche snares (Helm 1981).

Fish traps were another means of obtaining a large supply of food. They were constructed by several families from brush and willow sticks which were woven together. One trap used by Tukkuh Gwich'in people was ten feet long, five feet high, and shaped like a submerged canoe. The fish were herded into the upper end of the trap where they were speared or taken out with a dip net (Charlie, C. per. comm.). Several species of salmon were fished along the Porcupine River using basket style fish traps or fish weirs. Fish hooks were made from bone and used to catch whitefish and lake trout. Gill nets were used for all species, including grayling and inconnu (Helm 1981).

Gwich'in summer clothing was made from tanned white caribou skin and dressed caribou fur for winter. Men and women wore a tunic and leggings handsomely decorated with fringes, dyed porcupine quills, soapberries and red paint. Several types of housing were made depending on the season. Summer houses were made

from summer caribou skins stretched over a conical shaped willow frame. Skins from caribou taken in the summer were thinner than winter skins, allowing the light in. They were also lighter to carry. Winter houses were made from the thicker skins which covered a rectangular shaped frame. Dirt was added to the roof and around the sides. Fires were built in the centre with a smokehole over top (Thomas L. per. comm.).

Sites for Interpretation:
Blackstone Village

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: WE HAVE ALWAYS LIVED HERE

STORY: ABORIGINAL TRADE

Trade was an integral part of Gwich'in life. Where one group had access to salmon, another had whitefish; others had an abundance of moose while another group had only caribou. Some had access to special tool making materials, or access to material of ceremonial value such as red ochre. Gwich'in also traded with their neighbours including the Han, at fish camps along the Yukon River, and with the Inuit and the Northern Tutchone.

Trading was an informal process of exchanging goods but it did take on a formal element when relations were strained. Trading partnerships were established between the Gwich'in and the Inuit. This partnership held during hostile times, even through warfare no harm came between two partners (Coates 1980). These partnerships were based on wealth-ranking, age, and where appropriate, clan affiliation (Helm 1981). The Inuit exchanged walrus hides, used for boats and seal skins, for inland furs such as wolverine, used by the Inuit for parka trim and copper used for making copper tools. Unlike southern Yukon, Gwich'in trade did not include ceremonies, gift giving, or inter-marriage (Tanner 1965). Tetlit Gwich'in did practice potlatching in later years, but this is thought to have been passed on from the Han to the Tetlit Gwich'in sometime during the gold rush (Slobodin 1962).

Tetlit Gwich'in supplied red paint (sometimes known as red ochre) to many groups in the area. One source has been identified at the headwaters of Rock River. Long before the gold rush, Tetlit Gwich'in families travelled to Han fish camps to exchange red ochre for salmon, which was not available in the Peel River (Cruikshank 1974). As well, ochre was exchanged for whitefish from the Tukkuth at Whitefish Lake (Charlie, L. per. comm.). Gwich'in used red ochre to paint their faces before dancing (Murray 1910).

Several well known gathering sites were located on the Peel River where on occasion other groups such as Nakotcho families from the Arctic Red River met Northern Tutchone people in the area and exchanged goods. A Slavey group from Fort Good Hope met Tetlit Gwich'in families at the mouth of the Peel to drum-dance and stick gamble, and they probably traded too (Colin, N. per. comm.)

In 1839, John Bell observed a gathering of Tetlit and Tukkuth Gwich'in [which he called Mountain Indians] engaged in trading in the Rat River pass. He was told that this was an annual custom at this site (Wright 1976).

As hunting was the prime activity throughout the area it is likely that organized trading sites like the one observed by Bell, or the trade excursions to the Yukon River, were more the exception than the rule.

Sites for Interpretation:
Eagle Plains viewpoint, Rock River

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: WE HAVE ALWAYS LIVED HERE

STORY: TRAVEL ROUTES AND LANDMARKS

The entire length of the Dempster Highway either crosses, runs parallel to, or is part of an old trail. Major travel routes took Tetlit Gwich'in to winter hunting areas at the headwaters of the Peel River, or west across mountain passes to the interior plateau. Their most heavily travelled route led from summer fish camps along the Peel, up river to Trail Creek, and then overland to avoid the Peel River canyon, around Caribou Born Mountain to the mouth of the Hart River in summer or, to the mouth of the Wind River in winter (Slobodin 1962). The Wind River route continued south to the Little Wind and over the divide to the Blackstone, up the Seela Pass, and over to the Yukon River (Colin, N. per. comm.). This was the route that the N.W.M.P. used for their patrols to Fort McPherson (North 1978).

Tukkuth Gwich'in travelled extensively along the upper Porcupine River with trails which linked Whitestone Village, and Johnson Creek Village, to Rock River and over the Stony Creek pass to the Peel River. Tukkuth also travelled to Blackstone Village in the Blackstone Uplands (Charlie, L. per. comm.).

Northern Tutchone travelled into the Peel River headwaters area by various routes from their main encampments at Ethel Lake, Fraser Falls and McQuesten. Some family groups followed the Rae River to the Hart River, others followed the Nadala River to the Bonnet Plume or followed the Cranswick River over to the Arctic Red River. Northern Tutchone also hunted in the Tombstone Mountain area, which was reached by following the Beaver River to the Rae River (Peter, A. per. comm.).

At present, little is known about Han travel routes in the Dempster Highway corridor. It is likely that families travelled from the Yukon River, over the Seela Pass to the Blackstone River. This route was also used by the Tetlit Gwich'in.

To travel through this area without the aid of maps or marked trails required considerable knowledge of the landforms. Many Gwich'in place names describe the physical characteristics of certain landforms. For example, Engineer Creek has a Gwich'in name that means "stinky water", and the Gwich'in name for Tombstone Mountain means rocky sharp peaked mountains". Other names describe events such as Caribou Born Mountain, a calving area for caribou. Places were also named according to legends related to the area. Beaver House Mountain, Noisy Creek (near the Bonnet Plume), and the Shiltee Rock (downstream from Fort McPherson) are examples of important landmarks with legends associated to that particular area. All of these features helped mark the way for travellers.

Sites for Interpretation:

Many, including Beaver House Mountain, Chapman Lake

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: EARLY CONTACT

STORY: EXPLORERS

Alexander Mackenzie of the Northwest Company was the first Euro-Canadian to descend the Mackenzie River, in search of a river to the Pacific from the northern interior. Although he was able to learn about the existence of this river, he was unable to persuade any native people to accompany him. They reported hearing stories of giant and hostile people living along this river, who possessed magic powers. No amount of coercion on Mackenzie's part could change any one's mind. He left the area disappointed, and so named the Mackenzie, "the River of Disappointment". Fortunately the name did not stick (Wright 1976).

John Franklin was the second Euro-Canadian to explore the Yukon portion of the Arctic Coast. In 1825, he was sent to map the Arctic coastline. The expedition, was based at Great Bear Lake. The explorers descended the Mackenzie River to the Delta in two boats. One boat was sent east to map the coastline to the mouth of the Coppermine River and the other group, led by Franklin, sailed west to continue mapping, and to rendezvous with a British ship commanded by Captain Beechey, which was travelling around cape Horn and north along the Pacific coast. Beechey was to map the northern coast of northwest North America. Franklin's boat was forced to retreat because of pack ice and he was unable to complete the last 100 miles of his survey, or to meet the ship. On this leg of the expedition Franklin met a large group of Inuit camped along the coast and on an island just off shore. He named the island, Herschel, after the well known British chemist and astronomer, Sir John Herschel (Coates 1988). On his return trip up the Mackenzie River, Franklin mistakenly followed a tributary instead of the main river. He named the tributary after Sir Robert Peel, British Home Secretary and later Prime Minister.

In 1837, the Hudson's Bay Company sent Peter Dease and Thomas Simpson (cousin to Governor George Simpson) to complete Franklins' survey. They travelled down the Mackenzie River from Fort Chipewyan to the Delta and continued west. They were stopped by pack ice some distance beyond the extent of Franklin's expedition. Unable to continue on by boat, Simpson completed the survey on foot (Wright 1976). Several local explorations were undertaken by Hudson's Bay men as part of their duties as post traders. For an account of these, see story entitled "Fur Trade".

Comte de Sainville, a gentleman explorer from France, was the only privately sponsored explorer to reach northern Yukon during this period. In 1893, he travelled the Peel River to the mouth of the Bonnet Plume, mapping geological features, including the burning seams of exposed lignite at the mouth of the Bonnet Plume, and the locations of several Tetlit Gwich'in camps (Graham 1935).

Sites for Interpretation:

Fort McPherson, Arctic Red River, Eagle Plains viewpoint

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: EARLY CONTACT

STORY: SCIENTISTS AND SURVEYORS

Several decades after the establishment of the Hudson's Bay Company in the north-west, Robert Kennicott, an American naturalist, arrived to undertake scientific research. The project was financially backed by the Smithsonian Institution and the Audubon Society as part of a research program to begin zoological and ethnographic studies in north-west. Travel and c was provided by the Hudson's Bay Company (Wright 1976).

Kennicott spent three months at Fort McPherson before travelling to Lapierre House and on to Fort Yukon, where he would spend half a year collecting specimens. He departed in 1862 with a collection weighing 3,000 pounds (Wright 1976). Kennicott's enthusiasm for his project sparked the interest of several Hudson's Bay men who, following his departure, continued to send specimens to the Smithsonian Institution for over ten years (Wright 1976). Several traders, all former friends of Kennicott, published articles on northern native people in an annual report of the Institution.

In 1887, R. G. McConnell, on behalf of the Geological Survey of Canada, undertook the first survey in northern Yukon. McConnell, a Dominion Land Surveyor, was part of the Yukon Expedition along with William Ogilvie and George Dawson. The expedition, headed by Dawson, was sent to survey some of the major travel routes through the territory. McConnell's survey work took him up the Stikine River along the Liard to the Mackenzie River to Fort Simpson, and then on to Fort McPherson. From there he travelled down the Peel River, up the Rat River, and over the pass to Lapierre House. While en route he met William Ogilvie (Green 1982). Ogilvie was on his way home after completing his survey of the Chilkoot Pass and the Yukon River to 141st meridian. McConnell hired five Gwich'in packers to assist him across the Richardson Mountains. They were paid \$7.50 each for the journey (Coates 1980), (McConnell 1890).

Sites for Interpretation:

Fort McPherson, Eagle Plains Viewpoint

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: EARLY CONTACT

STORY: THE FUR TRADE

As a result of receiving favourable reports on the abundance of fur along the Peel River from John Franklin's reports, the Hudson's Bay Company sent John Bell to explore the area in 1839. Bell was also to inform the local inhabitants of the impending establishment of an HBC trading post in the area. Prior to the expedition Bell had been in charge of Fort Good Hope, the most northerly post on the Mackenzie at the time (Wright 1976). Bell ascended the Peel River to the Snake River, mistaking it for the main current and, continued on to its headwaters. That same summer he explored the Rat River as far as the portage. This route became the Hudson's Bay main supply route into the northern Yukon, for over twenty years. At the portage Bell met a group of Tukkuth Gwich'in (he called them Mountain Indians) engaged in trading with Tetlit Gwich'in, who informed him that this was an annual rendezvous site for them.

Bell returned to the Peel River area from Fort Good Hope the following year. Alexander Isbister, an HBC clerk, was also sent to assist in the construction of the post on the Peel River. A site was chosen ten miles above the mouth of the Rat River, near a large encampment of Tetlit Gwich'in. For many years it was known as, Peel's River Post. Isbister ran the new post and retraced many of Bell's explorations, incorporating Bell's notes in his account and mapping the routes. Alexander Isbister's account was published and remains the earliest written record of the area, along with Bell's notes (Wright 1976). Meanwhile, Bell continued to explore the Rat River to the Bell and along the Porcupine River, almost to the 141st meridian. In 1844, he made the journey a second time, and continued on to the mouth of Porcupine where it flows into the Yukon River.

Lapierre House, also called Small House, was constructed on the Bell River in 1846. It served as a supply house for goods destined for Fort Yukon. Supplies were packed over the pass from Fort McPherson to Lapierre House by Gwich'in packers. After spring break-up supplies were transported by boat to Fort Yukon. Lapierre House, because of its proximity to caribou herds, was an important supplier of meat to the Fort McPherson post.

IN 1847, Alexander Hunter Murray was sent to establish Fort Yukon at the mouth of the Porcupine River. While on his way north he met and married Anne Campbell, daughter of the Chief Trader at Fort Chipewyan. Anne, who was the first white woman in the Yukon, accompanied her husband as far as Lapierre House, where she remained while Fort Yukon was under construction. That winter, aided by a Gwich'in woman, she gave birth to the first non-Indian child born in the territory (Wright 1976). The Murrays spent three years at Fort Yukon, where two more daughters were born.

Trading continued at Fort Yukon for twenty years until 1867, when the United States purchased Alaska from Russia, forcing the HBC to relocate to Canadian soil. The new post was called Rampart House, but by this point, the Hudson's Bay Company trade was beginning to decline in the area. Competition came from two fronts. American whaling ships were trading on the Arctic coast and private American traders were moving from Alaska into the interior Yukon. By 1893, Rampart House and Lapierre House were closed, leaving the Yukon without an HBC trading post. Fort McPherson however, continued to operate.

Sites for Interpretation:
Fort McPherson

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: EARLY CONTACT

STORY: EPIDEMICS

In 1865, a scarlet fever epidemic spread throughout the Mackenzie valley, along the Arctic coast and along the Porcupine and Yukon rivers. The illness was brought in by boat crewmen supplying trading posts along the Mackenzie River. As there were no replacements for the sick crew, the Hudson's Bay Company sent the infected boat on to Fort McPherson, where the illness was brought over the Richardson Mountains with the supply expeditions (Coates 1988). Fort Halkett, on the Liard River, was the only post to escape the epidemic because the crewmen were too sick to travel there (Wright 1976).

Reverend Robert McDonald, travelled from Fort McPherson to Fort Yukon doing what he could for the many who were ill. The HBC calculated that 170-200 people at Fort Yukon alone died from the disease. Many fled the posts to escape the illness, but in so doing, they dispersed the illness further to many more family encampments. Some encampments were entirely wiped out by this epidemic (Wright 1976).

Moses Tizya of Old Crow remembered hearing about the epidemic from his father, John Tizya. His father recalled that prior to 1865, there were so many people travelling together in winter, they had to make four trails, and still the groups were very large. Scarlet fever, he said,

"killed all the people off.... Everybody die off", (McClellan 1987).

Sites for Interpretation:

Fort McPherson, Eagle Plains (Old Crow)

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: EARLY CONTACT

STORY: MISSIONARIES AND LINGUISTS

Fierce rivalry existed between the Roman Catholic Church and the Anglican Church as they attempted to expand their influence throughout the north. Funds for Anglican missions were raised by the Church Missionary Society, which had organized to promote the expansion of the church throughout the non-Christian world. The Oblates of Mary Immaculate was a similar Roman Catholic organization. Fort Simpson was the only Anglican mission open in the north-west in the 1860's. However, all along the Mackenzie River the Oblates had established missions at most Hudson's Bay posts (Wright 1976). In 1861 Reverend William West Kirkby of the Church of England was the first missionary to visit the Yukon. Encouraged by the Anglican traders at Lapierre House and Fort Yukon, Kirkby sent Reverend Robert McDonald to begin work at Fort Yukon the following year. That same year Father Seguin (OMI) unsuccessfully attempted to establish a Roman Catholic mission at Fort Yukon.

McDonald was of Metis/Ojibway background from Manitoba's Red River settlement. He was well suited for the task he was about to undertake (Peake 1975). He had already spent nine years with Ojibway people in Manitoba and he had a gift for languages (Wright 1976). McDonald established his base at Fort Yukon but travelled many miles visiting Indian camps in the region. In 1864, he decided to leave the north because he was seriously ill. William Carpenter Bompas was chosen to replace him and began his long journey to the north from England in 1866. However McDonald was treated with medicinal herbs by some Gwich'in women while enroute to Fort McPherson. He recovered from his illness and was able to return to Fort Yukon. Bompas was then assigned the position of missionary-at-large on the Mackenzie River and carried on McDonald's practice of holding services at Indian and Inuit encampments (Wright 1976). McDonald remained at Fort Yukon until 1872, when the mission closed and was relocated to Rampart House. After a year at Rampart House he moved his base to Fort McPherson (Coates 1979, McClellan 1988). In 1875, he was appointed Archdeacon.

McDonald married Julia Kutug McDonald, a Nakotcho woman from Arctic Red River, and together they translated the Bible, The Book of Common Prayer, a book of Tukudh (Gwich'in) Hymns and other religious material into the Gwich'in language (Tlen 1986). For the translations McDonald developed a Gwich'in orthography based on the Roman alphabet (McClellan 1988).

With the closing of Rampart House and Lapierre House in 1893, Gwich'in families dispersed back to familiar territory and lived in many small encampments. Although missionaries were still travelling in the area, contact with them became increasingly sporadic.

Site for Interpretation:
Fort McPherson, Eagle Plains (Old Crow)

THEME: OUR HOME, OUR NATIVE LAND
SUNTHEME: GOLD RUSH

STORY: GOLD RUSH ROUTES

Over fifteen hundred Klondike stampedeers chose to forego the shorter, but arduous route over the Chilkoot Pass, for the long overland route from Edmonton which was advertised as "the back door to the Yukon". This route was promoted by Edmonton businessmen as the patriotic "all Canadian route", that was not only good all winter but passable by horses in just ninety days. One enthusiast reported that the Klondike could be reached from Edmonton by canoe or dog team in six weeks and hastily printed this in several papers. The article caught the attention of the Mayor of Hamilton, who set out in a party organized by the same enthusiast who did not accompany the group (Berton: 1972).

The Edmonton route, though promoted as a single trail, in reality consisted of many trails, including two main overland trails, and one water route with several branches. The shortest route left Edmonton overland to the Liard River, following the old Hudson's Bay route to Fort Selkirk. The second route was overland to the Peace River, along the Peace and overland to the Liard River, picking up the HBC route. The third was termed the "all water route" with a brief overland section at the beginning, to get to the Athabasca River.

Several alternative routes were possible on the "all water route" down the Mackenzie River. During the rush of 1898 more than one hundred boats, of all manner of design, were either made, carried, or dragged to the beginning of navigation at Athabasca Landing, a Hudson's Bay settlement north of Edmonton. The first contingent of about eighty men, left the Mackenzie at the Liard River, taking the Hudson's Bay route. A second group of about ninety-five, continued on to the Keele, taking its course and over the McMillan Pass to the Stewart River. The remainder continued to the Peel River. Some turned up the Rat River and portaged over the McDougall Pass, then floated down the Bell to the Porcupine River, and continued down to the Yukon River. Others travelled up the Peel River to the Wind River or the Bonnet Plume River, and overland to the Stewart River. From there boats and rafts were constructed for the journey down the Stewart to the Yukon River. Another insignificant route followed the Porcupine River to the Miner River, and overland to Dawson.

Of the routes that left from Edmonton, the Liard River route, though the shorter of the alternatives by a thousand miles, was the most difficult. An estimated seven hundred and sixty six men, nine women and four thousand horses set out on one of the overland routes. Only one hundred and sixty men reached their destination, no women completed the journey and all of the horses died en route. Thirty-five stampedeers died on the route from Edmonton, most of scurvy (Berton 1972). One man in despair left a sign on the trail before taking his own life that read,

"Hell can't be worse than this trail. I'll chance it", (Berton 1972).

Of an estimated eight hundred and eighty-five men who took the longer, water route, five hundred and sixty-five were successful in reaching their destination (Berton 1972). Several men died of scurvy at Destruction City and Wind City and the ex-Mayor of Hamilton died of scurvy in a small cabin on the Peel River (Berton 1972).

Sites for Interpretation:
Fort McPherson

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: GOLD RUSH

STORY: GOLD RUSH PERSONALITIES, SITES, and STORIES

At Fort McPherson and along the Porcupine River and the Peel River, and at the McDougall and Stony Creek passes, stampederers were forced to take refuge from the approaching winter. Some sites were lone cabins occupied by one or two men, others were a collection of hastily built shacks, sporting homemade Red Ensigns and Amercian flags. A few were somewhat more organized communities. Those who ascended the McDougall Pass in larger boats were forced to stop at the beginning of a series of rapids to cut their boats down in size to travel as lightly as possible. The debris left from this reconstruction gave the site its name, Destruction City. Between fifty to a thousand people wintered in the area huddled in tents, cabins or in caves, scooped out of the banks and surrounded by the piles of goods left behind by those who went on ahead without their burden. All manner of goods was available in this camp, save footwear. Boots did not survive the punishment of the rocks in the river when stampederers pulled their boats upstream. Four men died from scurvy in the camp (Berton 1972). A few struggled further up the river as far as Shacktown near the western end of McDougall Pass and wintered there. Fewer still lightened their outfit again and continued on to the Bell and the Porcupine River. Jim Wallworth was one of several who continued on. He dragged his steamboat, Daisy Belle, from Shacktown to the Bell River with the aid of thirty sled dogs (berton 1972).

A group of seventy stampederers, travelling in fifty boats on their way to the Stewart River, wintered four miles up the Wind River at Wind City. Life at Wind City was documented by the group leader, G.M. Mitchell. He recounted taking a glass of brandy to the wife of a Tetlit Gwich'in Chief [Frances], who was suffering during a difficult labour. In return the chief brought seven sleighs of fresh meat to Wind City just in time to save many inhabitants from scurvy and starvation (Berton 1972). The stampederers who died at Wind City were buried in nearby mine shafts dug by enthusiastic residents of Wind City in search of gold in the area (Burton 1972). The remainder survived the winter by purchasing fresh meat from Gwich'in hunters camped nearby. Andrew Bonnet Plume, a Gwich'in guide, led the expedition as far as the headwaters of the Stewart River (Graham 1935).

Mitchell was unable to proceed to Dawson with the others at breakup. He had seriously injured his knee when falling a tree, which would have been his demise had it not been for the care given him by the Gwich'in (Graham 1930). His knee was operated on by two women, Jane Vitisik and Flora, the wife of Chief Frances (North 1978). The incision was cut with a freshly made flint knife. During a two to three hour operation they were able to insert a caribou bone pin in the knee and sew the incision with caribou sinew. Every few days the knee was treated with hot poultices of herbs and bark (North 1978). The operation allowed Mitchell to return to the Mackenzie River and make his way home, with full use of his leg save for some stiffness.

Through the somewhat lucrative experience of selling meat to stampederers at Wind City, the Gwich'in began to sell meat to Dawson butcher shops. Blackstone City, originally a Tukkuth Gwich'in fishing and hunting camp, became an important stopping over point for Gwich'in market hunters en route to Dawson. It was also located in an excellent hunting area for sheep, moose and caribou which were hunted for Dawson butcher shops (Henry, J. per. comm.).

Sites for Interpretation:

Eagle Plains, Blackstone Uplands, Fort McPherson

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: GOLD RUSH

STORY: TRADING POSTS

Throughout the Klondike Gold Rush, and for some years after, Dawson remained the main supply center for northern Yukon. It drew Indian people from many miles away, including the Tetlit Gwich'in who usually traded at Fort McPherson. The quantity of goods available at Fort McPherson had become meagre by this time, with fewer supply boats travelling down the Mackenzie than in earlier years. Some goods were obtained from American whaling ships along the Arctic coast by a few Gwich'in families who chose not to partake in the Gold Rush, but continued to trap. Most families obtained supplies from Dawson and spent part of the year there (Colin, N. per. comm.). It was not until 1911 that a group led by Chief Julius made their way back to Fort McPherson. John Firth, a Hudson's Bay trader at the post had seen few Gwich'in there since the gold rush. The local clergy had never met Chief Julius' group previously (Slobodin 1959).

Andrew Kunnezzi, a Tetlit Gwich'in, spent a number of years working in the Dawson area at various jobs, including deckman on the steamboats. He established a small trading post in the Blackstone Uplands which he supplied from Dawson. Stock was limited to a few canned goods, shells, tea, tobacco, clothes, and calico handkerchief scarves, hence the name Calico Town (Kunnezzi. per. comm.). The "town" consisted of one log house. Kunnezzi, intending to expand Calico Town to several cabins, had cut logs from a timbered area some distance from the house. It required considerable effort on his part to haul the logs to the site (Henry, A. per. comm.). Some families travelling through stopped and camped at the post, but before the cabins were built Calico Town closed. Andrew Kunnezzi moved back to Fort McPherson to set up a trading post in that area (Colin, N. per comm.) Calico Town was used by other families over the years, who hunted in the area until spring breakup and then moved back to Fort McPherson. It was eventually destroyed in a fire (Kunnezzi. per. comm.).

Sites for Interpretation:
Blackstone Uplands

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: GOLD RUSH

STORY: MARKET HUNTING

The Han people, who had camps along the Yukon River, had supplied fresh meat, particularly moose, to the mining settlement of Forty Mile. During the Klondike Gold Rush, the practice of market hunting, particularly for Indian people, developed into a booming and profitable business.

Food resources were limited in the Dawson area during the Gold Rush. In the summer of 1899 water levels in the river were low and prevented some supply boats from reaching Dawson (Wright 1972). That same summer the caribou did not make the usual crossing north of Dawson and fish supplies were meagre (Wright 1972). Animal habitat had been destroyed throughout the Klondike by carelessly set forest fires, consequently supplies of fresh meat had to be brought in from considerable distances (McCandless 1985).

The Tetlit Gwich'in were first involved in market hunting during the winter of 1899. Stampeders wintering at Wind City bought fresh meat from a nearby Gwich'in hunting camp. At that time a caribou sold for four dollars per carcass and moose sold for six dollars. As the winter progressed and the demand increased, the prices rose (Coates 1979). Before this standard of payment became established, some of the stampeders had traded useless articles to the Gwich'in for meat, but later they were forced to pay up (Slobodin 1963).

Several groups of Tetlit Gwich'in began to take sleighs of fresh caribou and sheep meat to Dawson by dog team from their winter hunting grounds, at the headwaters of the Peel River. The meat was sold to Dawson butcher shops which also stocked moose meat, ptarmigan, grouse, and rabbits in great abundance, according to an 1899 report by Inspector Harper of the NWMP. At that time domestic meat was brought up the Yukon River from outside suppliers. After the completion of the White Pass and Yukon Route supplies of domestic meats increased. By 1906 moose and caribou sold for an average of thirty cents per pound, pork sold for forty cents, and beef at sixty cents per pound. (McCandless 1985)

A portion of the Han community of Moosehide, located three miles downstream from Dawson, was occupied for a part of each year by many Tetlit Gwich'in families until 1910 (Slobodin 1959). The young Tetlit Gwich'in men who participated most actively in the social life of Dawson, including the pool halls, theatres, brothels and so on, came to be known as the Dawson Boys. These men were successful market hunters. In town they dressed in black suits and Stetson hats, and sported gold watch chains. They spoke English very well (Slobodin 1959). Their arrival in Dawson from the north was a colourful event, with their heavily loaded sleighs and their beautifully decorated parkas and mukluks. In 1938, the survivors of the Dawson Boys made one last commemorative trip to Dawson by dog team (Colin, N. per. comm.).

The practice of market hunting began to decline in the early 1940's. In 1947, an amendment to the Yukon Game Ordinance prohibited the selling of wild meat. As the majority of market hunters were Indian men, this change and the resulting loss of income affected them most.

Sites for Interpretation:

Blackstone Uplands

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: GOLD RUSH

STORY: NORTH FORK HYDRO PROJECT

Several hydro and thermal projects were constructed in the Klondike area in the early 1900's to supply power and water to enormous electric dredges. The North Fork project consisted of an eighteen foot wide ditch dug from the mouth of the North Fork of the Klondike River to a power plant, located sixteen miles away (Green 1977). The project was initiated in 1909 by the Granville Power Company, one of several companies controlled by gold baron, A.N.C. Treadgold.

The North Fork ditch was eighteen feet wide at the bottom, and twenty three feet wide at the top. Huge shovels dug the ditch, at a rate of three hundred feet per day. (Ibid) The ditch was designed to carry 15,000 miner's inches of water, triple the capacity of a neighbouring project, the Twelve Mile Ditch.

The Twelve Mile Ditch was a more ambitious project sponsored by the Yukon Gold Company, to supply power to its dredges. Water was taken from the Tombstone and Little Twelve Mile rivers, on the east side of Tombstone Mountain, along the valley wall of the Twelve Mile River, and south to Bear Creek by ditch or open flume. It came to be known as the "million dollar ditch" and operated until the early 1930's (Gates, M. per. comm.).

In 1912 Joe Boyle gained control of the North Fork project through a lease arrangement with the Northern Light Power and Coal Company, which was supplying water and power to Dawson from North Fork. Boyle offered the same services through his company called Canadian Klondyke Power. Problems in maintaining an adequate supply of power occurred during the winter when water in the ditch froze. Supplemental power had to be brought from a thermal power plant at Coal Creek, located north-east of Dawson. Boyle solved the problem by filling the ditch to capacity, allowing a thick layer of ice to form on the surface, then dropping the water level. The ice cover and the addition of three electric heaters kept the water from freezing in the ditch (Gates pers > comm.). Canadian Klondyke Power eventually went into receivership a few years after Boyle left the territory. In 1922, it was taken over by Yukon Consolidated Gold Company. The power plant was expanded in 1935 to take a third generator.

The North Fork project supplied power and water to the dredges until 1966, when falling gold prices and increasing production costs brought an end to the big dredging operations in the Klondike. The plant continued to operate for another year until it was finally closed. Then the Northern Canada Power Corporation began to supply the city of Dawson with diesel generated power.

Sites for Interpretation:
North Fork Dam

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: MOUNTIES, BORDERS AND BOUNDARIES

STORY: NATIVE SOVEREIGNTY

According to Euro-Canadian history, native sovereignty derives from the Royal Proclamation of 1763 . In it the British Crown made several fundamental commitments to Indian people in Canada, stating that the extinguishment of Indian rights to any lands would occur through a treaty process, that the collective national status of Indian peoples would be protected, and that treaties signed would be legally binding. The British North America Act of 1867 passed these responsibilities on to the Dominion of Canada. The Proclamation did not apply to Rupert's Land which had been granted to the Hudson's Bay Company by its charter in 1670. The company had complete control over this land until 1869 when it was turned over to the Canadian government, after which the Proclamation of 1763 applied. Rupert's Land did not include the Yukon. The right of the Hudson's Bay Company to trade in the territory may have been provided through a charter signed in 1821 which expanded the area originally granted to the Company . This charter remained in effect until 1859 and gave only limited rights to the HBC pertaining only to trade. Some debate ensues as to whether this charter in fact included applied to the lands that later became part of the Yukon Territory (McClellan 1987).

Whether such a charter applied or not, Yukon Indian people have not relinquished title to the land by conquest or treaty. Legally the land still belongs to its original inhabitants. Concern over Indian sovereignty emerged in 1902 when Chief Jim Boss of the Lake Laberge (Ta'an) people engaged lawyer T.W. Jackson to write to the Department of Indian Affairs, regarding compensation for lands being alienated by non-Indian people, and for loss of game in Ta'an hunting areas during the gold rush stampede years. The letter also stated that many Indian people had died from "want and starvation". In response Chief Jim Boss was told that a few reserve lands had been established in the Yukon, and that the NWMP would look after the needs of any destitute people including medical care (Yukon Indian News 1981). In 1932 , Chief Joe Squam of Teslin requested ownership of his family's traditional land at Wolf Lake and was refused (Coates and Morrison 1988). It was not until the 1973 Calder Case of the Nishga, that the federal government reconsidered its position on aboriginal title and initiated a land claims policy and process for negotiating settlements. As a part of this process a comprehensive land claim policy statement was taken to Ottawa by Yukon Indian chiefs in 1973. At the same time oil and gas interests in the Beaufort Sea area and other development pressures added considerable urgency to achieving a settlement in the Yukon. By 1979 land claim negotiations were underway. The proposed building of a gas pipeline through the Yukon, and the completion of the Dempster Highway project were considered by the Council for Yukon Indians to be prejudicial the claim (McLeod 1979).

Just one year after oil discoveries were made in the Mackenzie valley in 1920, Treaty Number 11 was signed with Indian people living in the Mackenzie valley area. The Peel River Preserve, established in 1923 to protect a large hunting and trapping area, was part of the extinguishment process there.

Sites for Interpretation: Other media.

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: MOUNTIES, BORDERS AND BOUNDARIES

STORY: GOVERNMENT

The discovery of gold at Bonanza Creek on August 16, 1896, brought thousands of stampeders to the Klondike valley within a matter of months. The few Canadian officials in the Yukon were located at Fortymile, but they soon perceived the need to move upriver to establish a new headquarters at the mouth of the Klondike River. William Ogilvie and Charles Constantine were the senior officials in the area. They advised the authorities in Ottawa that provision must be made immediately for a civil government, a gold commissioner and registrar, civil courts and other services to cope with a community of ten thousand or more.

Most of the political and administrative arrangements for the Yukon were made by the Minister of the Department of the Interior, Clifford Sifton during 1897 and 1898. Major James Morrow Walsh was appointed Chief Executive Officer or Commissioner of the Yukon Territory, although as yet it did not exist in law as a Territory. T. H. McGuire was named as Judge of the Yukon Provisional District. Together with legal and mining officials they hurried to the Klondike in the summer and fall of 1897, knowing little about the people or places they were to govern.

The Yukon Provisional District was established by Order-In-Council in 1896. It defined boundaries on the south and east giving shape to the territory we know today (only minor changes have been made since then). The District was still part of the Northwest Territories, where prairie politicians had recently won full powers of responsible government in territorial matters, after decades of bitter struggle with the federal government. During the winter of 1897-98 the territorial cabinet at Regina sent an official to Dawson to sell liquor licences believing that regulation of the liquor trade was a territorial responsibility. Commissioner Walsh disputed the territorial official's authority and declared the licences to be invalid. The dispute was before the new Yukon Court when a bill was introduced in Parliament to separate the District from the Northwest Territories, thereby solving the jurisdictional argument and creating the new Yukon Territory (Franks 1967, Morrison 1968).

The Yukon Territory Act assented to on June 13, 1898, was considered by Clifford Sifton to be an interim measure to govern the Yukon. The Act confirmed the boundaries prescribed for the Yukon Provisional District the previous year. The Commissioner was designated again as the Chief Executive Officer appointed by the Governor in Council to administer the territory, with the assistance of an appointed advisory Council. No provision was made for any form of elected representation for the people of the territory. No mention was made of Yukon Indian people in the Act either. The rights and protection of Indian people were defined by the Indian Act of 1876 as amended in 1898 again in later years. It would be many decades before all the people of the Yukon would have equal rights and privileges to participate in governing the land where they lived.

Sites for Interpretation:

Other media

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: MOUNTIES, BORDERS, AND BOUNDARIES

STORY: THE LOST PATROL

Dawson was the communication and supply centre of the northern Yukon. It had regular mail delivery, summer and winter (though less regular in winter), and a telegraph line providing a vital link to southern headquarters. Patrols between Dawson, Fort McPherson, and Herschel Island began in the winter of 1904-05 to provide a communication link between these smaller posts and Dawson. The patrol route was selected by Sergeant F. Fitzgerald, who was based at Herschel Island but responsible for McPherson as well (North 1978). The four hundred and seventy-four mile route from Dawson to Fort McPherson followed a Tetlit Gwich'in trail, which the people were still using. The first fifty miles of trail out of Dawson was kept open by a horse and sled.

Native guides were commonly used on all patrols to McPherson, the "lost patrol" being the exception. Most of the guides were Gwich'in who were staying in Dawson at the time. Richard Martin and his brother John guided several patrols. During the patrol of 1908, John Martin shot nine badly needed caribou en route, in conditions in which the NWMP constables could not even travel. Often the patrols met Gwich'in families on the trail, and if their supplies were low, they would purchase meat from them. Over the years, the Dawson to McPherson patrols were also guided by Andrew Kunnizzi, Charley Rivers, Stephen Bonnetplume, Jacob Njootli, Sam Smith, Peter Alexie, and Charles Stewart. Constable Sam Carter accompanied a patrol guided by Richard Martin on his way from Dawson to his new posting at Herschel Island. Carter offered to guide the patrol of 1910-11 from McPherson to Dawson, based on his knowledge of the route from this previous trip.

The first leg of the 1910-11 patrol began at Herschel Island and it consisted of Francis Fitzgerald, who had been promoted to Inspector, Constables George Kinney and Richard Taylor, and retired Constable Sam Carter who acted as guide. They left Fort McPherson on December 21, 1910, with thirty days of supplies and three dog teams (North 1978). Several days into the journey they lost their way on the Trail Creek portion of the route. Eventually they met Esua George, who was hired for five days to guide them over the divide to the Peel River (North 1978). At this point Esua George left the party and the patrol continued on to the Wind River and down it, until they lost the trail for a second time. They spent nine days searching for the divide which would take them over to the Hart River, before turning back for Fort McPherson. If all had gone well they would have just made it back. Extreme wind obliterated their trail, the temperature dropped, and they did not have enough food supplies to last through any further delays. This time there were no Gwich'in families on the trail and they eventually perished some twenty-five miles from Fort McPherson. Corporal W.J.D. Dempster, stationed at Forty Mile at the time, led the search for the missing patrol. He was accompanied by Constable J.F. Fyfe, ex- Constable F. Turner, and Charles Stewart, a Gwich'in guide.

As a result of the tragedy several precautionary steps were taken. A food cache was established at John Martin's cabin near the Blackstone River. A cabin was built on the Trail River route and supplied with basic staples. The trail was blazed in difficult spots. Lobsticks were cut to mark the route near where Fitzgerald's patrol had searched for nine days for the divide to the Hart River. Thereafter all patrols were required to have a native guide.

Sites for Interpretation:
Blackstone Uplands, Fort McPherson

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: MOUNTIES, BORDERS AND BOUNDARIES

STORY: THE SETTLEMENT OF OLD CROW

Old Crow, with a population of 277, is Yukon's most northerly community. It is the present home of the Vuntat Gwich'in and several Tukkuth Gwich'in families. The Vuntat Gwich'in have traditionally hunted and fished in the Old Crow Flats, while the Tukkuth Gwich'in utilized the upper Porcupine River area. Each year Vuntat Gwich'in and some Tukkuth families gathered at a site seven miles up the Porcupine River from Old Crow, known as Klo kut. It was an important fishcamp and also was the place where the caribou herd crossed the river. Families gathered here at the end of summer to organize the fall caribou hunt. Klo kut has been used for generations and recently a community meeting was held at the site (Netro, G. per. comm.).

The arrival of the Hudson's Bay Company in the 1840's altered the traditional land use patterns of many Gwich'in. Vuntat and Tukkuth Gwich'in families began to travel down the Porcupine River to Fort Yukon to trade. The post closed in 1867 with the U.S. purchase of Alaska and was relocated further up the Porcupine, first to Howling Dog, and then to Rampart House. Eventually the HBC closed its northern Yukon posts. Rampart House remained closed until 1906 when Dan Cadzow, a private trader, opened a store there (Balikci 1963). In 1911, smallpox broke out at Rampart House. The epidemic spread up the Porcupine River and seriously reduced the Vuntat and Tukkuth Gwich'in population along the river (Cruikshank 1974). It did not reach Lapierre House, Whitestone or Johnson Creek villages (Thomas, L. per. comm.). The survivors moved from Rampart House to Old Crow at the mouth of the Old Crow River. Old Crow had been a small fish camp and rendezvous site for families travelling between Old Crow Flats and Rampart House.

The first permanent building at Old Crow was owned by John Tizya, who had a nearby fish camp (Thomas, pers. comm.). In 1912, two traders, O. Schultz and B. Johnson, built the first store there. They operated their business until fur prices declined in the 1920's and the store was closed (Balikci 1963). Supplies for the store were brought by power boat from Fort Yukon. The Jackson brothers, Frank and Jim, reopened the store, and operated it until they sold out to the Northern Commercial Company and relocated to Lapierre House. Meanwhile Joe Netro, a Tukkuth Gwich'in, operated a small store in his home and a store at Whitestone Village. He later bought the store from the Northern Commercial Company, and it remained under his management for many years. After the Jackson brothers closed their store at Lapierre House in the mid thirties they relocated to Old Crow and opened another store. They left the community for Fort Yukon in the late forties. The depletion of fur resources in the upper Porcupine River which caused the Jackson brothers to close their operation at Lapierre House, also brought many Tukkuth Gwich'in families from Whitestone and Johnson Creek villages to Old Crow, where they and their descendants remain today (Charlie, C. per. comm.).

In 1928, the R.C.M.P. moved their post from Rampart House to Old Crow (Charlie pers. comm.). For many years Old Crow students were sent to the Carcross Residential School, and later to Whitehorse to attend school. The building of a government day school in the community allowed children to remain in Old Crow for the early grades, but for years many students still had to go to Whitehorse for high school. Today the school accommodates students of all ages.

In 1988 Old Crow elder, Charlie Peter Charlie, was honoured with the Order of Canada for his outstanding contributions to his community.

Site for Interpretation:
Eagle Plains Hotel

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: ORDERS AND BOUNDARIES

STORY: BISHOP STRINGER AND HIS BOOTS

Isaac O. Stringer became the second Bishop of Yukon in 1905, succeeding Bishop Bompas. He first arrived in the north in 1893, and spent four years as a travelling missionary between Fort McPherson, Herschel Island, and other small settlements in the area. He eventually established a permanent mission on Herschel Island to deal with the problems created among local Inuit by American whalers in the area (Coates and Morrison 1988). Stringer remained at Herschel Island until 1901 when he left on an extended holiday. In 1903, he returned to the Yukon as the minister at the Old Log Church in Whitehorse, where he remained until his duties as Bishop took him to Dawson.

He was returning to Dawson in 1909 from a trip to his northern missions when he became lost while attempting to cross the Richardson Mountains. The journey began by canoe from Fort McPherson. Stringer and his companion, C.F. Johnson, a principal at the Carcross Residential School, lost their way while approaching the Stony Creek Pass. As they attempted to cross the divide a snow storm obliterated the view. They wandered further south to Vittrekwa Creek, and following it, made their way back to the Peel River. They ended up some miles up river from where they started out (Colin, N. per. comm.). They had been lost for three weeks (Whyard 1983). As they weren't sure whether to go north or south on the river, they chopped a hole in the ice and threw a log in to determine the direction of the current. Realizing now that they had gone in a circle they made their north to Fort McPherson. On the way they met a group of Tetlit Gwich'in camped on the river. The Indians did not recognize the emaciated travellers at first. One of the group was sent to Fort McPherson and brought Hudson's Bay trader John Firth to help Stringer and Johnson back to the fort (Colin, N. per. comm.). While lost, the two men had run short of supplies and were forced to boil parts of their skin foot wear. This provided some nourishment which allowed them to keep going. Each man had lost fifty pounds on the journey. (Whyard 1983) Thereafter Bishop Stringer was known as " the Bishop who ate his boots."

Sites for Interpretation:
Fort McPherson

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: MOUNTIES, BORDERS AND BOUNDARIES

STORY: THE MAD TRAPPER

The events leading to the shooting of Albert Johnson on February 17, 1932, began on Christmas Day 1931 when William Nerysoo walked into the R.C.M.P. detachment at Artic Red River to complain that Albert Johnson had sprung some traps he had set in the Rat River area (North 1972). Albert Johnson had moved north to eek out a living prospecting in the summer and trapping in the winter. He built a cabin eight miles from the confluence of the Longstick and Rat River, where the Gold Rush settlement of Destruction City was located. The nearest white trapper, James Hogg, trapped at the headwaters of the Bell River. William Vittrekwa, Jacob Drymeat, and William Nerysoo were Gwich'in trappers in the area (North 1972).

Before the registration of trap lines in the Yukon, Indian people trapped in areas they or members of their family customarily used. Although there was a certain amount of fluidity in this arrangement, customary use of an area meant that those outside of the family required permission from the original users to trap there. The arrangement worked well for generations until white trappers entered the area, ignorant of this informal land tenure (McCandless 1985). The R.C.M.P. were quick to resolve conflicts between white and Indian trappers, but lacked the power to remove a troublesome trapper from an area. After amendments were made to the Game Ordinance in 1938, the R.C.M.P. were able to enforce their decisions regarding trapline disputes (McCandless 1985).

The complaint registered by William Nerysoo was acted upon the following day when two constables travelled to Johnson's cabin by dog team. Receiving no response to Constable King's questioning, the two men went to Aklavik for a search warrant and reinforcements. On returning, Constable King knocked on Johnson's cabin door and was shot through the chest. King was raced back to Aklavik for medical attention and a party of nine men and forty-two dogs was sent to arrest Johnson (North 1972). After a siege of some twelve hours, in bitterly cold temperatures, the cabin was dynamited and Johnson escaped. At this point the nine men retreated to Aklavik and a second posse was gathered. This group took a two-way radio on one of the dog sleds (North 1972). After considerable searching, the posse picked up and followed Johnson's old trail. In the meantime, Johnson had doubled back to the beginning of the old trail to allow himself the opportunity to hunt unnoticed. An Indian person in the area, hearing a shot, reported it to the posse. Constable Millen was shot and killed when the posse met up with Johnson at this point. Following this tragedy, and because of the constant effort required to keep the posses and their dogs supplied while trying to keep up with Johnson's pace, a plane was dispatched from Edmonton to assist in the manhunt. Additional volunteers were also recruited. This was the first occasion when a plane was used to assist in an R.C.M.P. manhunt (North 1972).

The final break in the search came when some Gwich'in people spotted strange snowshoe tracks east of Lapierre House. Peter Alexie was sent to meet Inspector Eames, who was responsible for the search, with the news. The plane, piloted by the legendary "Wop" May, continued to ferry in supplies and to search for Johnson's trail. When he found it he radioed directions to the trackers, thus helping them avoid Johnson's many blind leads. Johnson eventually crossed the Richardson

Mountains, headed south-west to escape being seen at Lapierre House, then continued to the Bell River, and south along the Eagle River. Meanwhile Inspector Eames and his party flew to Lapierre House. The plane was used again to pick up the trail. Eames' party followed Johnson's trail on the Eagle River until Johnson, confused by some ski tracks, turned back and both parties met. In the last shoot out Sergeant Hersey was wounded and Albert Johnson was killed.

Sites for Interpretation:

Eagle River

THEME: OUR HOME, OUR NATIVE LAND
SUBTHEME: MOUNTIES, BORDERS AND BOUNDARIES

STORY: EARLY AVIATION

The first planes to land in the Yukon were part of the First Alaska Air Expedition. They arrived in Whitehorse in August 1920 en route to Dawson and Nome. As early as 1926, several Yukon businessmen from Whitehorse and Mayo pioneered the first commercial enterprise in the Yukon to use aircraft. It was called Yukon Airways and Exploration Company, and operated for three years. Despite many set backs and a series of crashes the company led the way for the development of air transportation in the territory. In 1927 Yukon Airway's plane, the Queen of the Yukon, piloted by Andy Cruikshank, delivered mail to Dawson and Mayo. A special Yukon Airway's stamp was affixed to the envelopes to cover the cost of the service (Coates and Morrison 1988).

The plane used in the Mad Trapper search, a Bellanca, was leased from Western Canadian Airways in Edmonton and flown to Aklavik by W.R. May. "Wop" May had been a legendary pilot in the First World War, and had gone on to accomplish several "firsts" in northern aviation. Together with C.P. "Punch" Dickins, he inaugurated the first regular mail and passenger run from Edmonton to Aklavik in 1929. Later May was a major player in the R.C.M.P.'s first manhunt by air (North 1972). During the search for Albert Johnson, he piloted a plane from Aklavik into the Barrier River area of Rat River in a matter of hours. To make the same journey would have cost the posse three days of valuable manpower and severely taxed their sled dogs. However the plane was not without its special problems. Several times it was grounded because of fog, and with extremely low temperatures a great deal of effort was required to keep the engines from freezing. At one point in the air search deep snow prevented the plane from obtaining enough speed for take-off. May solved this problem by tying the plane to a tree and revving the engine, at which point he had someone cut the ropes. The plane was just able to take off (North 1972).

Air travel continued to expand in the north throughout the thirties. Regular scheduled passenger and mail service was offered between Whitehorse, Mayo, and Dawson. Planes were also being used by large mining and exploration companies such as Treadwell Yukon in Mayo, providing access to new mining areas. In 1934, the White Pass and Yukon Route established its own airline called British Yukon Aviation to complement its other diverse interests in the transportation industry, which included everything from horse drawn stages to steamboats to airplanes (Coates and Morrison 1988).

Aviation played a central role in the Firth River gold rush of 1948. Harry Gordon-Cooper was one of many small groups of adventurers who chartered planes into the Firth River area. Representatives of several large mining and exploration companies were there as well with their own company aircraft (Gordon-Cooper 1978).

Sites for Interpretation:
Eagle River, Eagle Plains Hotel

THEME: ROAD TO THE ARCTIC CIRCLE...AND BEYOND
SUBTHEME: DEMPSTER HIGHWAY
STORY: ROAD TO RESOURCES

The creation of the Department of Northern Affairs and National Resources in 1953 was part of a growing awareness of the importance of the north in Canada, and the federal government's commitment to its development and protection. The concept of development at the time focused on what had made the Yukon famous - i.e. its non-renewable resources.

During the winter of 1954-55 several D9 cats were used to develop a winter road from Flat Creek to Eagle Plains. Interest in the Eagle Plains and Peel Plateau area grew, and several exploration companies began to battle with the problem of access into the potentially rich oil and gas resources in the area. The need for a road, at least as far as Eagle Plains, began to receive recognition. By 1955, the "Dempster" highway project had become part of a long-term plan of the Department of Northern Affairs, though low in priority.

The 1957 federal election brought a Conservative government to power under John Diefenbaker and Alvin Hamilton was appointed Minister of Northern Affairs and National Resources. Hamilton's brought the "Dempster" highway project to the attention of Prime Minister Diefenbaker. Hamilton, with the support of Yukon M.P. Aubrey Simmons, envisioned:

"...making every corner of the Yukon accessible. We can't develop without access. I see a network of trunk roads branching out from Dawson City. The great development possibilities in the north-west corner certainly justify road investments into the Mackenzie River Delta area," (McLeod 1979).

Prime Minister Diefenbaker's opening speech of the 1958 federal election campaign focused on the need for road development in the north, which he likened to John A Macdonald's vision to link the country from east to west by rail. In outlining his party's national development strategy on a northern roads program, Diefenbaker stated:

" We intend to start a vast roads program for the Yukon and the Northwest Territories which will open up for exploration vast new oil and mineral areas-thirty million acres! We will launch a seventy-five million dollar federal-provincial program to build access roads. THIS IS THE VISION!... We are fulfilling the visions and the dream of Canada's first prime minister -Sir John A Macdonald. But Macdonald saw Canada from East to West. I see a new Canada. A CANADA OF THE NORTH." (McLeod 1979)

The "Northern Roads Program" was allocated one hundred million dollars over a ten year period to open new areas for the exploration of oil and mineral potential, and seventy-five million dollars for joint federal-provincial development of roads (McLeod 1979).

Sites for Interpretation:
Dempster Corner, Tombstone Mtn Visitor Centre

THEME: ROAD TO THE ARCTIC CIRCLE...AND BEYOND
SUBTHEME: DEMPSTER HIGHWAY

STORY: OIL & GAS EXPLORATION AND CAT TRAINS

Exploration of the Eagle Plains and Peel River Plateau area began in the winter of 1954-55 and continued in earnest until 1963. Conwest Exploration Co. Ltd. was the first company to develop a cat train route into the area. It led from Flat Creek to the North Fork Pass, along the Blackstone River and across to Chance Creek (Henry, J. per. comm., McLeod 1979). Several D9 cats were driven in a self-contained convoy, including a bunkhouse and cook shack which was pulled on skids. Seven people were fed and housed in the bunkhouse (Gould, J. pers. comm.). One cat was required to haul their fuel. It took 8 days for the cat train to put in the road to Ogilvie River. Once the route was established it took 3 1/2 days to make the same journey. Supplies continued to be brought in throughout the winter (Henry, J. pers. comm.). Joe Henry, a Tukkuth Gwich'in man who grew up in the Blackstone area, was responsible for determining much of the route. As he had considerable knowledge of the area he snowshoed ahead of the cats, leading the way and locating the most suitable route. He recalled the North Fork Pass as being one of the more difficult sections to get through.

Winter roads continued to be developed during the 1950's by other exploration companies with interests in the area. In 1956, Western Mineral Resources applied for federal assistance to construct a winter road from Flat Creek to the Peel Plateau but their request was refused. In 1957, the Peel Plateau Exploration Company was also exploring actively in the area. Yukon M.P. Aubrey Simmons began to lobby for government aid for winter roads to exploration areas. As a result, a new category of development roads was added to the Northern Roads Program which would now qualify them for government assistance.

In 1959, Western Mineral Resources discovered oil in the Peel Plateau (Coates and Morrison 1988). Their discoveries led to the capping of five wells, three containing gas and two containing oil. They developed a similar winter route into the area but by now, the first thirty miles of the "Dempster" highway had been constructed. Federal assistance was allotted to maintain a winter road from the end of the highway to Mile 50. That same winter a trail was developed from Mayo leading two hundred miles north to Hungry Lake. It cost the exploration company \$500 to \$1,000 per mile to develop the road and install temporary bridges and culverts to make the route passable for trucks. That winter supplies and equipment were transported into the area. The route was developed by Arctic Oilfield Transport Ltd., a joint venture of the White Pass and Yukon Route Corporation and Proctor Construction Co. Ltd. for Amerada Petroleum.

Standard Oil was able to utilize part of the "Dempster" highway leading to their operation in the Eagle Plains area. They conducted exploration work throughout the 1961-63 season but none of their discoveries had commercial value.

Sites for Interpretation:
Blackstone Uplands

THEME: ROAD TO THE ARCTIC CIRCLE...AND BEYOND
SUBTHEME: DEMPSTER HIGHWAY

STORY: ROUTE SELECTION

Based on aerial surveys done in 1957, consideration was given to three possible locations for an all-weather road to Eagle Plains. Slight consideration was given to a route originating from Dawson and continuing to the Hart River by way of the Klondike River. The Department of Public Works (DPW) also investigated the winter road built by Arctic Oilfield Transport Ltd. from Mayo to Hungry Lake which was referred to as the Mayo-Wind River route. The established Flat Creek to Eagle Plains route, which would connect with the Whitehorse to Dawson Highway, was also scrutinized (McLeod 1979). Both of these latter routes were the same distance.

In the investigation several considerations were taken into account. The Mayo-Wind River route appeared to have better road construction material than the Flat Creek-Eagle Plains route, but the latter was considered better for alignment and grade. Of the bridge structures required for each route, eight hundred feet more were needed on the Mayo-Wind route. The Mayo route was beginning to emerge as the more difficult area in which to locate the highway (McLeod 1979). After flying over the routes a second time, and interviewing people familiar with the area, DPW selected the Flat Creek-Eagle Plains route. The following year a location survey was undertaken as far as the Ogilvie-Peel area and approval was given to survey the road through to Fort McPherson (McLeod 1979).

When Joe Henry heard about the possible construction of an all-weather road through his trapping area where he had led the cat trains, he applied for work with the highway survey crew. Once again, wearing his snowshoes, Joe was out tramping a route for the survey crew and engineer Allan A. Wright. Joe worked on the highway as far as Eagle Plains and then he retired. By this point he felt he was getting too old for that kind of work (Henry, J. per. comm.).

Sites for Interpretation:

Dempster Corner, Tombstone Mtn. Visitor Centre

THEME: ROAD TO THE ARCTIC CIRCLE . . . AND BEYOND
SUBTHEME: DEMPSTER HIGHWAY

STORY: HIGHWAY CONSTRUCTION

In 1959, the Government of Canada agreed to build a road to Eagle Plains over the next 6 years. The budget for the first year of construction was \$1.9 million. Initial contract work was considered "shoddy" (MacLeod 1979). Prince Phillip toured the highway construction in a reconnaissance flight in '59 and commented on the destructive practices used for borrow pits - being numerous, small, close to the road and deteriorating from permafrost melt (MacLeod 1979). These practices were soon corrected and care was taken throughout the construction stages. In the Richardson Mountains, borrow pits are well back from the highway and the side of extraction is not visible from the highway. This contrasts with more recent work during the realignment of sections of the highway in 1984. Had Prince Phillip flown over the area he could again have raised the same concerns. In a valiant effort to right a wrong, the government leveled these borrow pits to induce plant recolonization and conducted two years of revegetation using willow transplants and application of fertilizer and grass seeds.

By 1961, only 72 miles had been constructed. There was no further construction until 1969. The road was being built to service the mineral industry and when oil and gas explorations on Eagle Plains showed poor results, the impetus for the highway as a priority subsided.

In 1968, large reserves of oil and gas were discovered at Prudhoe Bay on the Alaska arctic coast. There was lengthy discussion and projection about getting the petroleum out of the north and pipelines across the northern Yukon and down the MacKenzie valley were considered. The impetus for the highway to reach the MacKenzie Delta revived the construction of the highway.

By 1970 the highway reached the Ogilvie River. In 1971 construction continued northward but also started in the north to extend southward and meet the northbound. The road was built from Inuvik and from Arctic Red River. These sections, like so much of the highway, were built with pioneering knowledge and technologies for a permafrost influenced environment and had to be completely rebuilt.

Building the section through Eagle Plains, great care was taken to protect the frozen ground. To disturb the vegetation layer meant a thaw of the permafrost and slumping or degradation, consequently, no heavy equipment was allowed on the virgin ground, except in winter when the ground was frozen. Trees were cut by chainsaw (signs of this are still visible along the roadside) in summer and left in the centre of the clearing. In winter, roadbed material was dug from borrow pits and loaded into trucks. These trucks were specially designed with their warm engine exhaust piped back to the box to prevent the gravel from freezing - a practice still continued today. The truck backed up to the end of the roadbed and dumped their loads which were then leveled. A 5 foot pad was laid over the fill sections.

By 1979 the two sections meet and the highway became a throughway to communities which had never before experienced a road link to the outside.

THEME: ROAD TO THE ARCTIC CIRCLE ... AND BEYOND
SUBTHEME: DEMPSTER HIGHWAY

STORY: MOVIE SET - NEVER CRY WOLF

Adapted for silver screen from the book by Farley Mowat, much of the filming of Never Cry Wolf took place on the Dempster. Included in the movie are views of Tombstone Mountain and the tundra area of Chapman Lake. Hollywood wolves were kept in pens down by Tombstone Campground. A cabin and cache and were built and set up in the Blackstone Uplands, looking quite weathered and rustic. The government was concerned with land use and the traffic of the movie crews on the tundra so they requested the crew build and use a boardwalk for all filming at the cabin. The set was gone almost as quickly as they had arrived, leaving no sign of their presence.

Other areas of filming this movie which might be familiar to the traveller include the Skagway Road, Carcross and Atlin Lake.

THEME: ROAD TO THE ARCTIC CIRCLE . . . AND BEYOND
SUBTHEME: ARCTIC CIRCLE

STORY: SIGNIFICANCE

Between the Arctic (66 32'N) and the Antarctic Circle, the sun rises and sets daily. Beyond the Arctic Circle, the sun remains in the sky at midnight in midsummer and never rises in midwinter. As one goes north, the effect intensifies until at the pole the sun is continually in the sky for 6 months and continually below the horizon for an equivalent amount of time.

The reasons for this have a simple explanation. During the northern winter, the Northern Hemisphere is tilted away from the sun and the Earth's curvature creates a shadow centered on the North Pole. This shadow area starts to form during fall equinox, reaches a maximum size by midwinter (December 21) and vanishes by spring equinox. For the balance of the year, the Northern Hemisphere is tilted towards the sun and the north polar area is in continual sunlight. Because the Earth's axis is about 23.5 degrees, the Arctic and Antarctic Circles lie at 66.5 degrees.

The Arctic Circle is not a climatic boundary and does not denote homogeneous habitat. Treeline occurs north and south of the circle. Trees grow north of the circle on the Firth River or the MacKenzie Delta while in the Hudson Bay area the treeline is well south of the Circle.

THEME: ROAD TO THE ARCTIC CIRCLE . . . AND BEYOND
SUBTHEME: MACKENZIE RIVER

STORY: DESCRIPTION AND EVOLUTION

The MacKenzie River is the largest river in Canada draining 18 million square kilometres. Its length including that of its longest tributary, is 4600 kilometres which places it among the ten longest rivers in the world (Environment Canada 1972, Heginbottom 1978).

The MacKenzie River basin occupies approximately one third of Canada. Part of the Western Cordillera, the Interior Plains and to the east, part of the Canadian Shield all lie within the basin.

Large lakes within the MacKenzie drainage system include Great Bear Lake, Great Slave Lake and Lake Athabasca. The lakes provide water storage capacity moderating the effects of extreme spring snowmelt discharge. In spite of this, maximum spring discharge may be fifteen times low winter flow (Environment Canada 1972).

The three largest tributaries are the Peace, the Athabasca and the Liard.

THEME: ROAD TO THE ARCTIC CIRCLEAND BEYOND
SUBTHEME: MACKENZIE RIVER SYSTEM

STORY: LIFEBLOOD OF THE DENE

The people of the Mackenzie Valley are part of the Athapaskan language and culture group. This is a very large and dispersed culture, found throughout Alaska, Yukon, western Northwest Territories, and in parts of British Columbia. Included in this group are the Navaho of southwest United States. Within the Mackenzie Valley, several Athapaskan languages are spoken; Gwich'in (Tetlit and Nakotcho), Hare, Slavey, Dogrib and Chipewyan. Collectively these groups refer to themselves as "Dene", meaning "the people".

The importance of the Mackenzie River to the Nakotcho Gwich'in, Hare, Slavey, Dogrib and Chipewyan is best told at the Mackenzie River. A project similar to the cultural component of this study is being sponsored by the Government of the Northwest Territories and will provide information on the traditional use of the river and its importance to the Dene people of today. Of relevance to this study is the importance of the Peel River which is a tributary of the Mackenzie, to the Tetlit Gwich'in.

While Fort McPherson is the main community of the Tetlit Gwich'in people today, traditionally this group established fish camps further upriver (on the Yukon portion of the river) and used the headwaters of the river and tributaries for their winter hunting grounds (Slobodin 1962). The mouth of the Wind River and the Bonnet Plume were important gathering places where families went in spring to make skinboats for the trip down the Peel River (Colin, N. pers. comm.). The last time a skin boat travelled this route was 1923 when the chief paddled down the Peel River (Slobodin 1962). After the First World War, when prices for muskrat and beaver increased, many Tetlit Gwich'in began to hunt these animals on the lower portion of the Peel River or at the Mackenzie Delta (Slobodin 1962). In the mid forties some people moved back upriver to hunt marten, but with changes to the Yukon Game Ordinance in 1938, they were unable to use their traditional hunting areas in the Yukon.

Today, several Tetlit Gwich'in families hold Yukon trapping licences for trapping areas in the Yukon. Some of these trappers gain access to their areas by travelling their "grandfathers' route" up the Peel River (Colin, N. pers. comm.). Other families continue to exploit the Mackenzie Delta using the river to gain access to that area. Despite many changes in land use and lifestyles, the Peel River, with its many fish camps and boats dotted along its banks, continues to be an important travel route for Tetlit Gwich'in, and a vital link to continuing traditions.

Sites for Interpretation:
Peel River

THEME: ROAD TO THE ARCTIC CIRCLEAND BEYOND
SUBTHEME: MACKENZIE RIVER SYSTEM
STORY: EURO-CANADIAN ENTRY ROUTE

The early explorations of Alexander Mackenzie of the Northwest Company in 1789, and later explorations of John Franklin, and John Bell of the Hudson's Bay Company, succeeded in extending the fur trade along the entire length of the Mackenzie River, establishing it as a major transportation corridor to new trading areas. The construction of a Hudson's Bay post on the Peel River in 1840 led to further exploration into the interior of the north-west. Subsequently the Company established Lapierre House on the Bell River and Fort Yukon at the mouth of the Yukon River. Supplies for these posts, as well as for Fort Norman, Fort Good Hope, and Fort McPherson were brought down the Mackenzie River by York boat from Fort Simpson. Fort Simpson, known as the Depot, was the supply centre for the Mackenzie District, and the home of the Chief Trader who was responsible for the fur trade in the whole district (Wright 1972).

Supplies for Lapierre House and Fort Yukon were transported from Fort McPherson to Lapierre House over the Rat River portage and taken by boat downstream to Fort Yukon. This route remained the entry way into the Yukon interior for over twenty years (Wright 1972).

All Euro-Canadian travel into the area was dependent upon the supply routes established by the Hudson's Bay Company. HBC supply brigades carried the early missionaries and scientists. Food and shelter was also available only from the Hudson's Bay Company. Arthur Harper, Leroy McQuesten, and Albert Harper heard favourable reports from HBC traders regarding the Yukon district. They were the first prospectors to float down the Mackenzie River in 1873 and travelled over the Rat River portage to Lapierre House and on to Fort Yukon, sampling the river gravels for gold "colours" en route. They noted "fair prospects" on the Peel River, but they continued on to Ft. Yukon. These men were pioneer traders and prospectors in the Yukon district, helping to lay the foundations for the Klondike Gold Rush several decades later (Wright 1972).

The Mackenzie River route to the north-west continued to be the principal corridor to the northern interior for Euro-Canadians and Americans until the purchase of Alaska by the United States in 1867. After that American traders and many others travelled up the Yukon River from St. Michaels on the Bering Sea.

THEME: ROAD TO THE ARCTIC CIRCLEAND BEYOND
SUBTHEME: MACKENZIE RIVER SYSTEM

STORY: BERGER INQUIRY-MACKENZIE VALLEY PIPELINE

A Royal Commission was established in 1974 to investigate the possible construction of a natural gas pipeline from Prudhoe Bay across the north slope to the Mackenzie Delta, and south along the Mackenzie valley corridor through Alberta and a portion of British Columbia to the United States. The Inquiry, headed by Justice Thomas Berger, visited all thirty five communities in the Mackenzie Valley and included a hearing in Old Crow. Formal hearings began in March 1975 and ended in November 1976. Justice Berger recommended a ten year moratorium on the proposed Mackenzie Valley corridor route to allow for the settlement of land claims, and the establishment of a national wilderness park for the northern Yukon to aid in the protection of the Porcupine Caribou herd. It was also suggested that alternative routes be considered, including one proposed by the Foothills Pipe Lines Company to follow the Alaska Highway corridor.

A similar but less intensive inquiry was held in seventeen Yukon communities during the summer of 1977 to investigate the Foothills Pipe Lines project. The Alaska Highway Pipeline Inquiry, composed of Edith Bohmer and Williard Phelps, and chaired by Kenneth Lysyk recommended a four year delay in the construction of a pipeline in the Yukon to allow for the settlement of land claims. Considerable concern was voiced about the effect that the proposed Dempster Lateral pipeline and the completion of the Dempster highway would have on the Porcupine caribou herd.

Sites for Interpretation:
Fort McPherson, Peel River

THEME: ROAD TO THE ARCTIC CIRCLE... AND BEYOND
SUBTHEME: INUVIK

STORY: INUVIK

Inuvik, the place of man, has a variety of stories best told in Inuvik by those who live there. Inuvik is the springboard to points beyond - to flights over the MacKenzie Delta and Tuk, river trips down the MacKenzie, trips to Herschel Island or the North Yukon National Park.

We refer the reader to the NWT Dempster Interpretive Project and the compilation of materials through Dick Hill's efforts (Hill 1988).

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5.5 LIST OF CONTACTS

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Finlay McRae, Senior Planner
Afan Jones, Recreation Planner

Tourism Development

John Spicer, Director of Development
Akio Saito, Development Officer
VRC Dawson

Yukon Native Languages Program

John Ritter

Heritage

Louise Profeit-LeBlanc, Native Heritage Advisor

Bureau of Statistics

Jim Tousignant

FEDERAL GOVERNMENT CONTACTS

Department of Indian and Northern Affairs

Marg Crombie, Northern Land Use Planning
Bruce Chambers, Department of Environment
Linda Bromar, Canadian Parks Service

Department of Fisheries and Oceans
Al Von Finster, Habitat Biologist

Canadian Wildlife Service
Don Russell, Caribou Biologist

Geological Survey of Canada
Grant Abbott

GOVERNMENT OF NORTHWEST TERRITORIES

Tourism and Economic Development

John Culford
John Cormier
Dick Hill
Frank Pilac
Robin Riley

Renewable Resources

John Bailey, Superintendent
City of Inuvik
Tom Detlor

BOARDS AND COUNCILS

Porcupine Caribou Management Board
Stanley Njootli, Vice-chairman

North Slope Wildlife Advisory Council
Laurie Henderson

NATIVE ORGANIZATIONS

Council for Yukon Indians, Patrick James
Mackenzie Delta Tribal Council, Jane Hansen
Inuvialuit Regional Council, Anne Matheson, Tom Beaudoin

INTEREST GROUPS AND INDIVIDUALS

Tourism Industry Association of the Yukon, David Philpot
Klondike Visitors Association Board Meeting
Western Arctic Visitors Association, Alice Barton

Duck Unlimited (Ltd), Dale Eftoda
Author, Dick North
Graduate Student, Lori Waldbrook
Big Game Outfitter, resident, Stan Reynolds
Big Game Outfitter, resident Doug Lowe
Big Game Outfitter, resident Sharon & Pete Jensen
Former Outfitter, Francis Woolsey
Resident North Klondike valley, Greg Brunner
Resident, North Klondike valley, Dave McCauley

Fisheries Biologist Bob Dillinger
Memorial University

Syd Cannings
UBC Invertebrate museum

COMMERCIAL ENTERPRISES

Eagle Plains Hotel, Stan McNiven
Klondike River Lodge, Mr. McGillvray
Horizon Tours, David Littlejohn, Jules Morgan
Rainbow Tours
Antler Tours

5.6 COMMENTS FROM NATIVE ORGANIZATIONS

Aklavik Band

- traditional & cultural values of aboriginal people should be reflected in the Strategy
- desire to see increase of cheaper goods brought into the community
- benefits for Aklavik from increase in fly-in tourists to the community from Inuvik
- would like to be part of future planning projects related to the Highway and to be kept informed

Old Crow Band

- main interests of the Band are: hunting, fishing, trapping, tourism and other economic projects
- concerned about the Wildlife Management Agreement and its application to the highway
- concern for the Porcupine Caribou herd and the effect of increased activity along the highway
- interested in an interpretive centre, possibly located at the proposed airport facility at Eagle Plains Hotel to interpret Gwich'in traditional use of the area to be undertaken by the Band and neighbouring bands

Fort McPherson Band

- concern for delay in changing the name of Cornwall Creek to Rock River
- several tourism targeted projects planned for the community such as the fireside gathering

- Gwich'in place names interpreted along the Highway
- recognition of traditional lands on the Yukon side of the boundary
- desire to undertake first person interpretation at Rock River Campground, demonstrating traditional activities

Dawson Indian Band

- desire to continue to hunt along the Dempster Highway

Mayo - Na Cho Nyakdun Band

- concern for the Porcupine Caribou Herd
- concern for increased potential for hazardous or dangerous chemical spills on highway
- highway compliments the attempt to encourage side trips off the Klondike Highway - the Silver Trail would be a short side trip for those who have not time to travel to the Dempster Highway

Inuvik Indian Band

- interested in increasing tourism into remote locations
- Inuvik developed as a destination
- promotion of local artists through interpretive signs

Inuvialuit Regional Council

- present interpretation is feared for northbound travellers
- interested in tourism from Inuvik i.e. fly-in visitors from southern locales and provide guiding trips to remote locations

Arctic Red River

- prefer to concentrate on community social interest at the present time without interference from increased tourism

TABLE 9

DEMPSTER HIGHWAY LOCATIONS AND PROPOSED INTERPRETIVE PULL-OFFS*

KM	DESCRIPTION	PROPOSED PULL-OFF OR IMPROVEMENT
0.0	Dempster Highway Junction	Proposed 7-10 vehicles
6.3	North Fork Ditch Road Day use area	Improve site for day use.
23.5*	Ogilvie Mtns. View	Proposed 2-3 vehicles
71.4	Tombstone Mountain Campground	
74.4	Tombstone viewpoint	Improve existing, 6-8 vehicles
80.4	North Fork Pass Summit	
105*	Moose Lake	Proposed 2-3 vehicles
114.7	West Blackstone Bridge	
115.2	Existing Lost Patrol sign	
116.0	Chapman Lake	Proposed 6-8 vehicles
120.7	Doug Low Game Outfitter's Camp	
152.8	Windy Pass	Improve existing, 2-3 vehicles
159*	Gyrfalcon Aerie	Proposed 2-3 vehicles
169.0	Sulphur Springs	
184.5	Sheep Lick	Proposed 2-3 vehicles
189.2	Sulphur Creek	
193.4	Engineer Creek Campground	
221.4	Elephant Rock	Proposed 2-3 vehicles
231*or238*	Ogilvie River	Improve existing, 3-4 vehicles
243.9	Joe Henry's cabin	
244*	Beaverhouse Mountain	
245.3	Randolph's cabin	
272.6	Peel Valley viewpoint	Improve existing, 6-8 vehicles
321.7	Existing pull-off	
369.2	Eagle Plains Hotel	
372.6	Existing pull-off	
376.8	Existing viewpoint	
377.8	Eagle River	Improve existing, 3-4 vehicles
389.5	Airstrip	
405.6	Arctic Circle	No parking improvements needed
432.9	Rock River?	
445.0	South Cornwall (Rock)	
445.8	Cornwall (Rock) River campground	
446.5	North Cornwall (Rock) River, pull-off	
463.4	Existing picnic table	
464.2	Al Wright memorial	
465.0	Yukon/NWT Border	Improvements, but no additional parking needed

* All fixed distances are prepared by Department of Community and Transportation Services, November, 1988.; those marked with (*) are approximate as measured by vehicles on field trip. See also map on next page.

FIGURE 8. SCHEMATIC DIAGRAM OF MAJOR INTERPRETIVE SITES

(for illustrative purposes only)

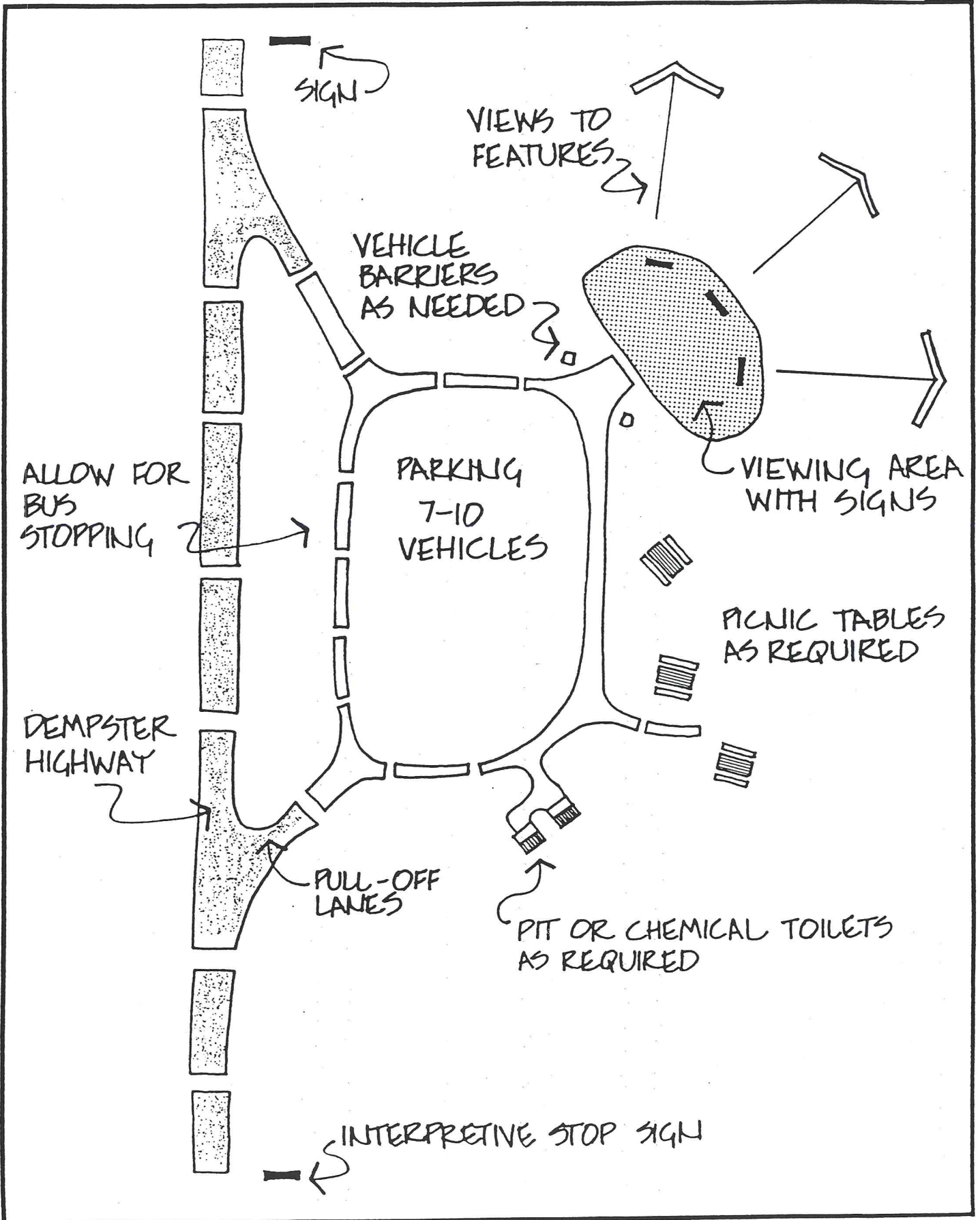
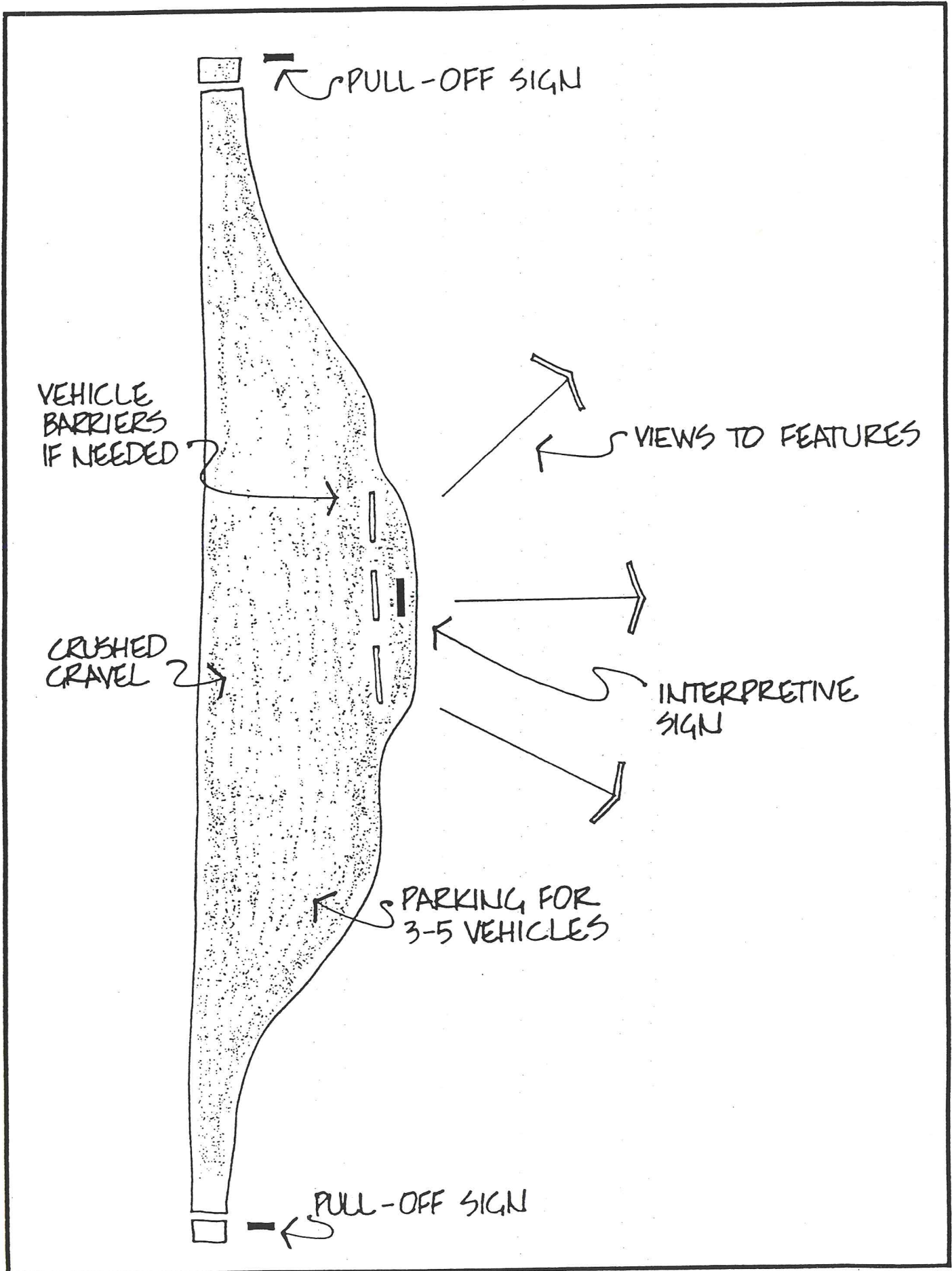
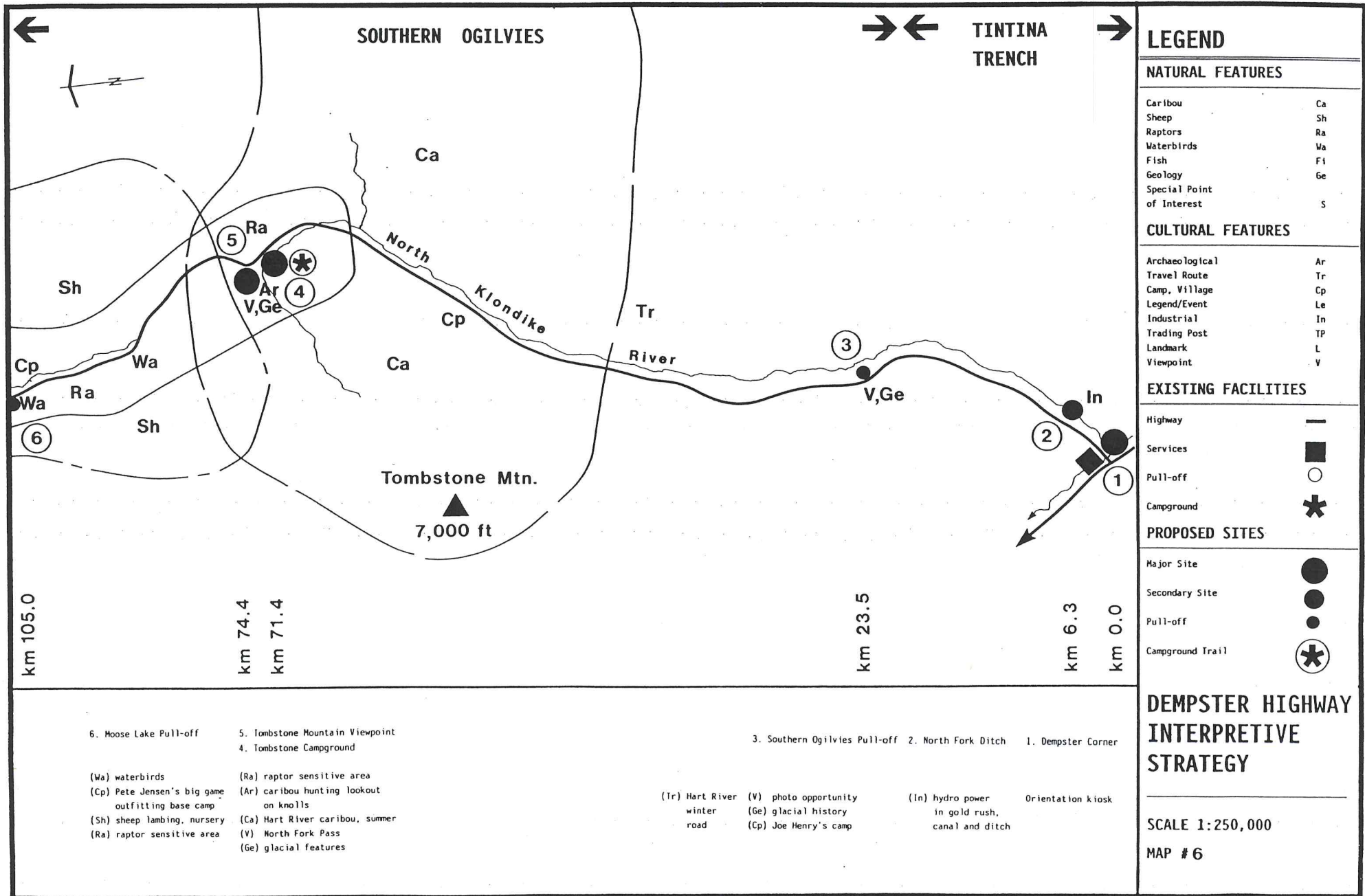
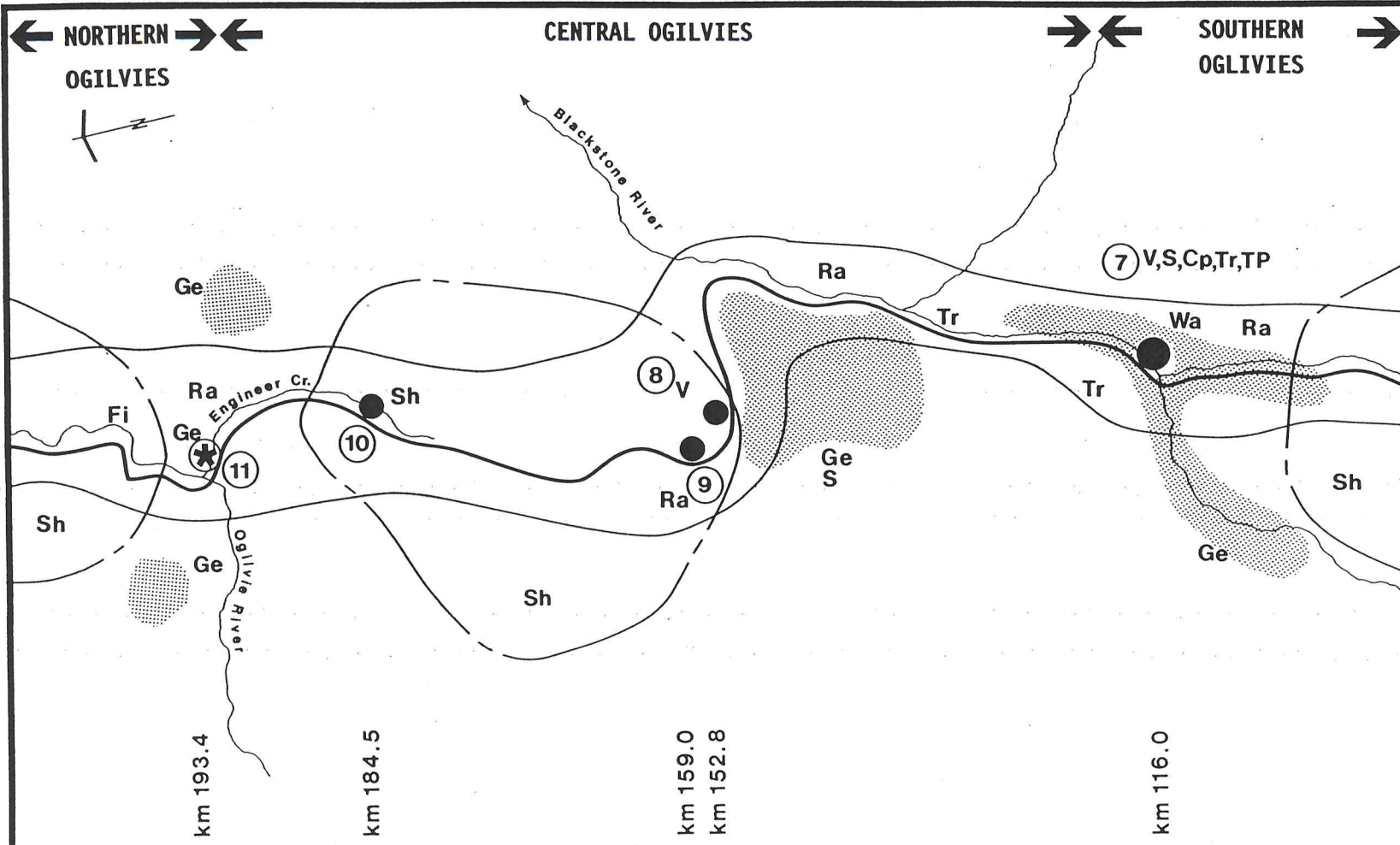


FIGURE 9. SCHEMATIC DIAGRAM OF SECONDARY INTERPRETIVE SITES
(for illustrative purposes only)







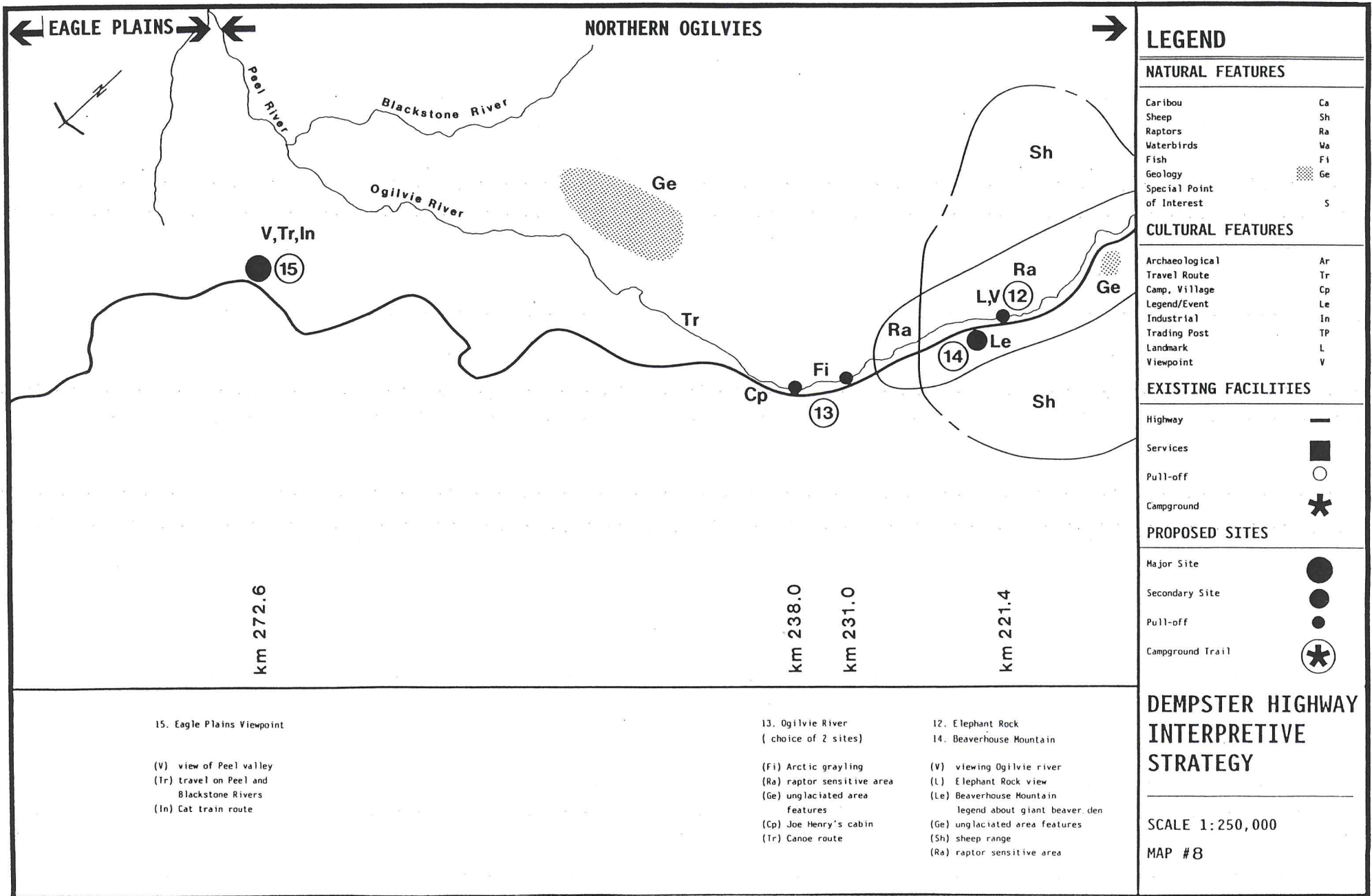
LEGEND

NATURAL FEATURES	
Caribou	Ca
Sheep	Sh
Raptors	Ra
Waterbirds	Wa
Fish	Fi
Geology	Ge
Special Point of Interest	S
CULTURAL FEATURES	
Archaeological	Ar
Travel Route	Tr
Camp, Village	Cp
Legend/Event	Le
Industrial	In
Trading Post	TP
Landmark	L
Viewpoint	V
EXISTING FACILITIES	
Highway	—
Services	■
Pull-off	○
Campground	★
PROPOSED SITES	
Major Site	●
Secondary Site	●
Pull-off	●
Campground Trail	★

- | | | | | |
|-----------------------------------|----------------------------|----------------------------|-------------------------|--|
| 11. Engineer Creek Campground | 10. Sheep Lick Viewpoint | 9. Gyrfalcon Viewpoint | 8. Windy Pass | 7. Chapman Lake Blackstone Uplands |
| (Ge) Sapper Hill unglaciated area | (Sh) sheep viewing area | (Ra) raptor sensitive area | (V) viewing at pass | (Tr) Gwich'in, NWMP trail |
| (Ge) bedrock geology feature | (Ra) raptor sensitive area | (V) Beringia features | (Ge) rare invertebrates | (Tr) cat train, trail, bunkhouse |
| | (Fi) mineral water river | | | (Cp) Blackstone village, Tukkuh |
| | | | | (Cp) Doug Lowe's outfitting camp |
| | | | | (TP) Ca'lico Town |
| | | | | (In) Highway construction staging area |
| | | | | (Tr) Canoe route |
| | | | | (Ge) permafrost features |
| | | | | (Ra) raptor sensitive area |
| | | | | (Fi) Arctic grayling, Arctic char |
| | | | | (V) views of Blackstone uplands |
| | | | | (S) views of tundra vegetation |
| | | | | (Wa) waterbirds |

DEMPSTER HIGHWAY INTERPRETIVE STRATEGY

SCALE 1:250,000
MAP # 7



LEGEND

NATURAL FEATURES

Caribou	Ca
Sheep	Sh
Raptors	Ra
Waterbirds	Wa
Fish	Fi
Geology	Ge
Special Point of Interest	S

CULTURAL FEATURES

Archaeological	Ar
Travel Route	Tr
Camp, Village	Cp
Legend/Event	Le
Industrial	In
Trading Post	TP
Landmark	L
Viewpoint	V

EXISTING FACILITIES

Highway	—
Services	■
Pull-off	○
Campground	★

PROPOSED SITES

Major Site	●
Secondary Site	●
Pull-off	●
Campground Trail	★

DEMPSTER HIGHWAY INTERPRETIVE STRATEGY

SCALE 1:250,000
MAP #8

15. Eagle Plains Viewpoint

- (V) view of Peel valley
- (Tr) travel on Peel and Blackstone Rivers
- (In) Cat train route

13. Ogilvie River
(choice of 2 sites)

- (Fi) Arctic grayling
- (Ra) raptor sensitive area
- (Ge) unglaciated area features
- (Cp) Joe Henry's cabin
- (Tr) Canoe route

12. Elephant Rock
14. Beaverhouse Mountain

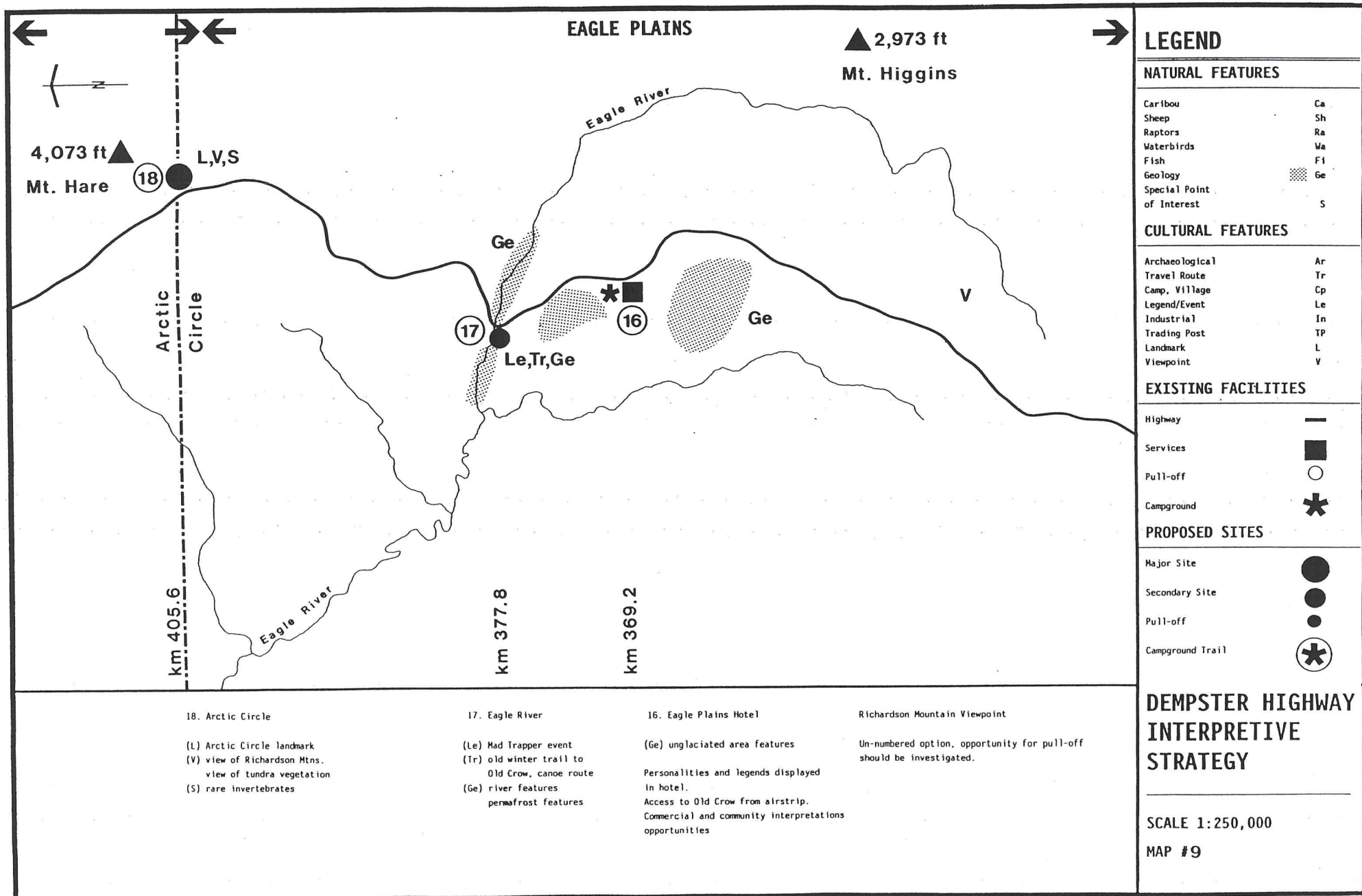
- (V) viewing Ogilvie river
- (L) Elephant Rock view
- (Le) Beaverhouse Mountain legend about giant beaver den
- (Ge) unglaciated area features
- (Sh) sheep range
- (Ra) raptor sensitive area

km 272.6

km 238.0

km 231.0

km 221.4



LEGEND

NATURAL FEATURES

Caribou	Ca
Sheep	Sh
Raptors	Ra
Waterbirds	Wa
Fish	Fi
Geology	Ge
Special Point of Interest	S

CULTURAL FEATURES

Archaeological	Ar
Travel Route	Tr
Camp, Village	Cp
Legend/Event	Le
Industrial	In
Trading Post	TP
Landmark	L
Viewpoint	V

EXISTING FACILITIES

Highway	—
Services	■
Pull-off	○
Campground	✳

PROPOSED SITES

Major Site	●
Secondary Site	●
Pull-off	●
Campground Trail	✳

DEMPSTER HIGHWAY INTERPRETIVE STRATEGY

SCALE 1:250,000
MAP #9

18. Arctic Circle

- (L) Arctic Circle landmark
- (V) view of Richardson Mtns. view of tundra vegetation
- (S) rare invertebrates

17. Eagle River

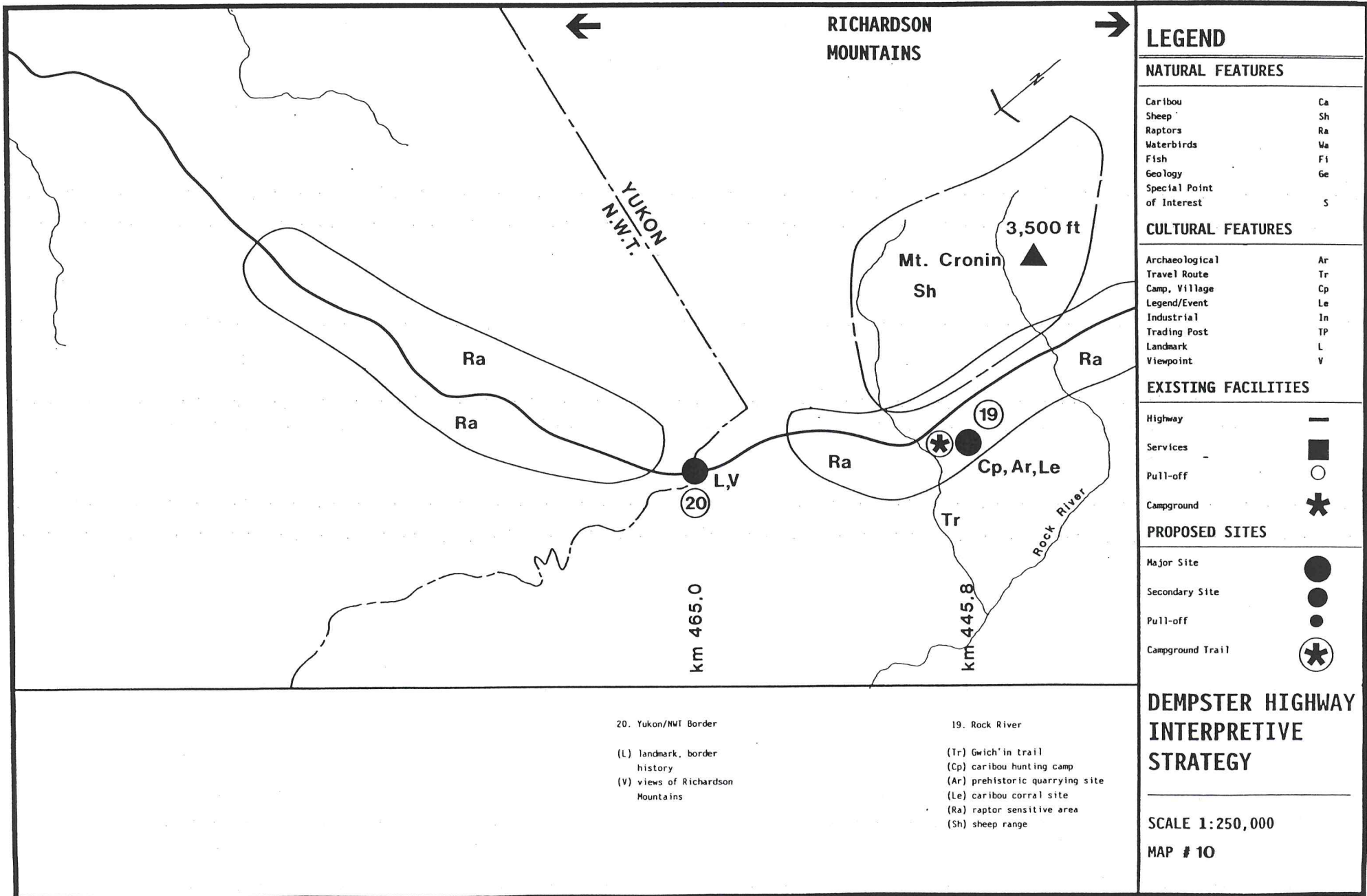
- (Le) Mad Trapper event
- (Tr) old winter trail to Old Crow, canoe route
- (Ge) river features permafrost features

16. Eagle Plains Hotel

- (Ge) unglaciated area features
- Personalities and legends displayed in hotel.
- Access to Old Crow from airstrip.
- Commercial and community interpretations opportunities

Richardson Mountain Viewpoint

Un-numbered option, opportunity for pull-off should be investigated.



LEGEND

NATURAL FEATURES

Caribou	Ca
Sheep	Sh
Raptors	Ra
Waterbirds	Wa
Fish	Fi
Geology	Ge
Special Point of Interest	S

CULTURAL FEATURES

Archaeological	Ar
Travel Route	Tr
Camp, Village	Cp
Legend/Event	Le
Industrial	In
Trading Post	TP
Landmark	L
Viewpoint	V

EXISTING FACILITIES

Highway	—
Services	■
Pull-off	○
Campground	★

PROPOSED SITES

Major Site	●
Secondary Site	●
Pull-off	●
Campground Trail	★

DEMPSTER HIGHWAY INTERPRETIVE STRATEGY

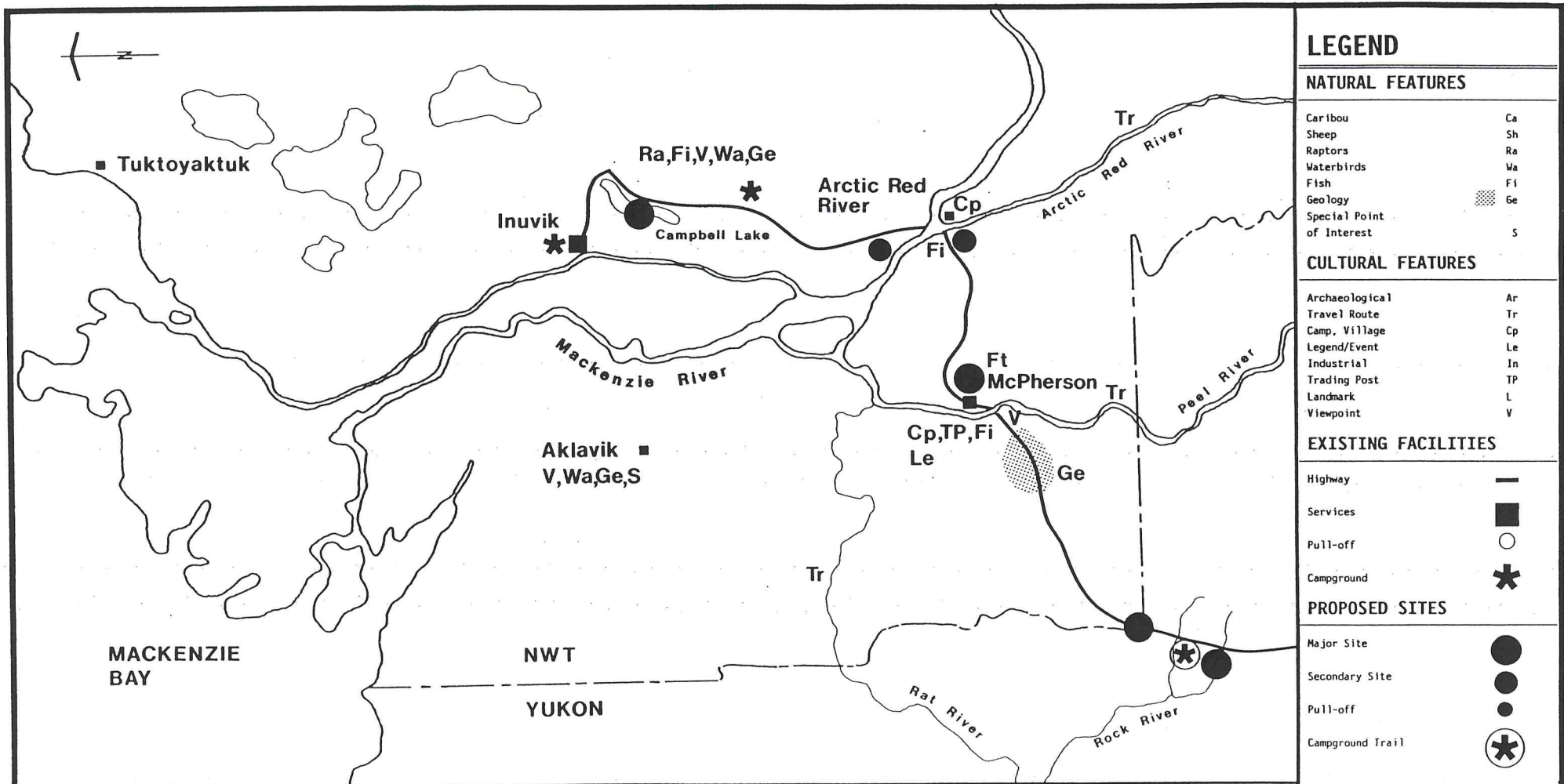
SCALE 1:250,000
MAP # 10

20. Yukon/NWT Border

(L) landmark, border history
(V) views of Richardson Mountains

19. Rock River

(Tr) Gwich'in trail
(Cp) caribou hunting camp
(Ar) prehistoric quarrying site
(Le) caribou corral site
(Ra) raptor sensitive area
(Sh) sheep range



LEGEND

NATURAL FEATURES

Caribou	Ca
Sheep	Sh
Raptors	Ra
Waterbirds	Wa
Fish	Fi
Geology	Ge
Special Point of Interest	S

CULTURAL FEATURES

Archaeological	Ar
Travel Route	Tr
Camp, Village	Cp
Legend/Event	Le
Industrial	In
Trading Post	TP
Landmark	L
Viewpoint	V

EXISTING FACILITIES

Highway	—
Services	■
Pull-off	○
Campground	★

PROPOSED SITES

Major Site	●
Secondary Site	●
Pull-off	●
Campground Trail	★

DEMPSTER HIGHWAY INTERPRETIVE STRATEGY

SCALE 1:1,000,000

MAP # 11

Aklavik/
Tuktoyaktuk

(V) sightseeing tours
(Wa)(Ge)(S)

Inuvik

Administrative and
service centre.
Staging area for trips
to northern Yukon,
Herschel Island,
Western Arctic

Campbell Lake Park

Proposed park.
(Ra)(Fi)(V)(Wa)(Ge)

Arctic Red River

(Cp) fish camps along river
Gwich'in travelled to
Bonnet Plume R. to hunt
(Fi) drying racks at crossing,
whitefish, inconnu
End of trip for many
Mackenzie River or Arctic Red
River travellers

Ft. McPherson

(Tr) H.B.C. route to Lapierre House
(Le) "Lost Patrol", graves
(Cp) Fish camps of Tetlit Gwich'in
on Peel River
(Le) legend of Shiltee Rock
(TP) Anglican Church, since 1873
(Fi) whitefish, inconnu
End of trip for most Peel River travellers