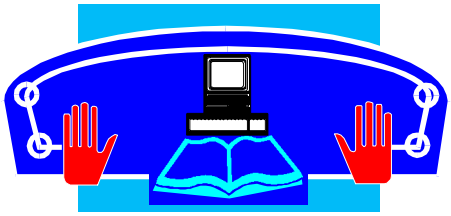

Canol Heritage Trail - Concept Plan - Summary
Type of Study: Analysis/review
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CANOL HERITAGE TRAIL

CONCEPT PLAN

Prepared for: Economic Development and Tourism
Government of the Northwest Territories

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Illustrations: all illustrations were provided by Linda and Peter Kershaw. Photographs taken during the construction of the CANOL Project have been duplicated from the personal photo collection of R.S. Finnie.

CANOL HERITAGE TRAIL CONCEPT PLAN

EXECUTIVE SUMMARY

The Canol Heritage Trail is an extremely significant heritage resource which has been given National Historic Site status. In addition, it is a wilderness area of incredible beauty and rich in natural resources. In recent systems studies of the area, large segments of the Canol Road within the Northwest Territories have been identified as nationally significant landscapes. The corridor is considered to have very good recreational and interpretive potential which could be made more available to the public through appropriate up-grading of facilities and promotion of the recreational opportunities.

In response to this assessment, the recommended plan for the development of the Canol Heritage Trail is outlined in this report. The highlights of that plan are:

* The primary purpose of the proposed development of the Canol Heritage Trail will be to encourage an understanding and appreciation of the CANOL story and its place within the broader context of northern oil development and settlement.

* High priority will be placed on the protection of the cultural and natural resources of the Canol Heritage Trail.

* Wilderness recreational use of the trail will be encouraged and efforts will be made to retain that experience for a wide variety of potential users.

* A visitor reception and interpretation centre in the community of Norman Wells will serve a valuable educational function and also be a focal point for the promotion and encouragement of recreational use along the trail.

* A wide variety of activities will be encouraged in various areas of the trail where the resources are able to sustain them and where other compatible activities are present.

* Use of the trail will focus on key areas of high recreational potential and access to those areas will be encouraged by boat, motorbike, vehicle, and aircraft as well as on foot.

* A moderate level of facility development will include improvements to trails, construction of shelters, and development of trail registration facilities.

* A trail guide book will make an important contribution to achieving the interpretive objectives of the plan.

* Nodes of facilities and related activity should be designated as parkland to facilitate development and operation.

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EXECUTIVE SUMMARY

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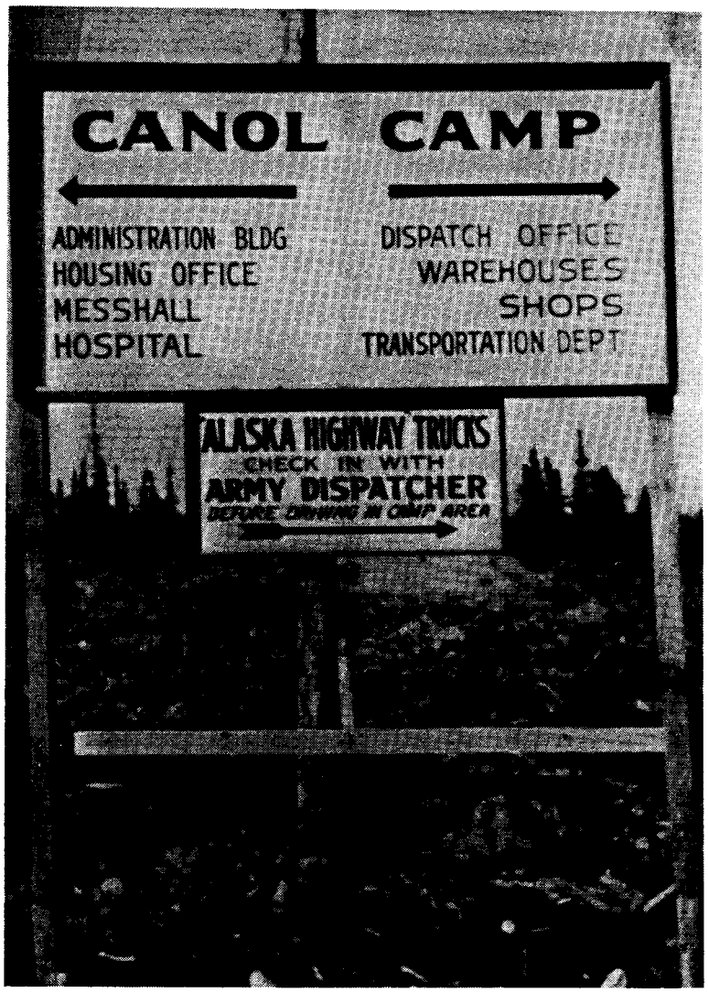


OVERVIEW OF **CANOL HERITAGE** TRAIL STUDY AREA

INTRODUCTION

The abandoned Canol Road winds its way for 372 km from the Norman Wells oilfield, across the broad plains of the Mackenzie River Valley, through several mountain ranges, over the Mackenzie Mountain Barrens and up to Macmillan Pass on the Continental Divide before passing over and into the Yukon and on to Whitehorse (see Fig. 1). To the people who built the road it was unknown country with an unforgiving climate and major construction challenges in the flat, swampy terrain as well as the deep canyons and rugged mountains. To today's adventurer there is a unique opportunity to relive the hardship of that construction task and at the same time appreciate some of Canada's most interesting and beautiful country. Visitors will pass both recently deglaciated and ancient, unglaciated landscapes with the same deep canyons, and rugged mountains that were the barriers to the CANOL Project over forty years ago. They will also experience a variety of landscapes including broad, flat-topped plateaus, white spruce forests, tall shrub communities, crustose lichen tundra and excessively drained, dry, barren environments in rain shadow areas.

CULTURAL RESOURCES

The CANOL Project was a World War II undertaking in support of the North American defences against the Japanese. It was designed to transport crude oil, produced at Norman Wells on the Mackenzie River, the 929 km to Whitehorse in the Yukon Territory where it was refined and piped to Alaska. Although initiated by the United States Army, the CANOL Project was engineered, designed, constructed and operated by civilian contractors, employing both American and Canadian workers.

The CANOL Project was rapidly conceived and executed with little understanding of northern environmental limitations, yet it is still one of the largest projects ever undertaken in northern Canada. From the time construction began in October 1942 until the Whitehorse refinery commenced operations on April 30, 1944, 30,000 people were employed in constructing a total of 2,575 km of pipelines in four separate systems, 828 km of gravel surfaced tote road, 829 km of telephone system, 2,415 km of primarily new winter roads, and 10 aircraft landing strips along the Mackenzie River. But most of this had to be preceded by the upgrading and/or construction of 2,763 km of water routes from the railhead in Alberta to Norman Wells. The total -estimated cost of the CANOL Project was 300 million 1942/43 U.S. dollars (see Fig. 2).

Scattered along the route today, abandoned camps, wanigans, pipe sections and pump stations are dilapidated reminders of the hectic 35 month period during which the mammoth CANOL Project was conceived, constructed, operated and abandoned. The CANOL Project was a major, though now essentially forgotten, event in Canadian history.

Dilapidated bridge on the Intga River

JOINT DEFENCE CONSTRUCTION PROJECTS, 1944

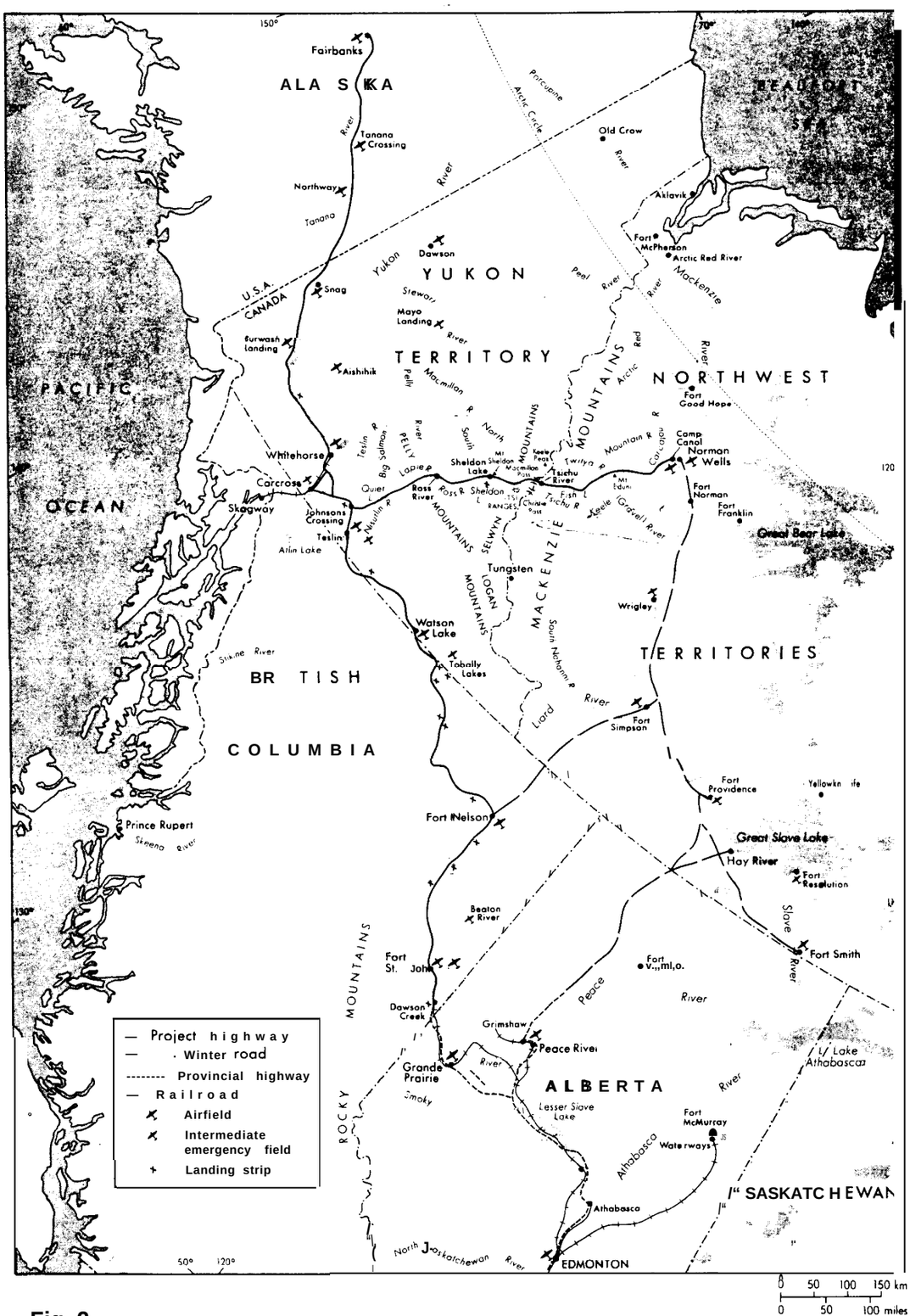


Fig. 2

Source: Kershaw and Kershaw, 1982.

In the Yukon the CANOL route was cleaned up and road improvements were made, and deposits of artifacts are now centralized in locations such as Ross River. By contrast, little has been officially done with the remnants of the project in the Northwest Territories. Six pump stations, three road camps and numerous wanigans, bridges, barrel and truck dumps, and oil spills can still be seen along the road (see Fig. 3). However, many of these structures and artifacts are rapidly deteriorating, as a result of salvage for use elsewhere, vandalism or the action of natural processes (eg. wind and water erosion).

Many historical resources not on the site are also available. Excellent historical photographs and a colour documentary film made during the course of the CANOL Project as well as numerous articles, reports, analyses and diaries from the 1940's are available from a variety of sources.

As a result of the historical significance of the CANOL Project, the route has been designated as a National Historic Site by the Historic Sites and Monuments Board of Canada.

In addition to the CANOL Project, the area was traditionally important as a hunting and settlement area of the Mountain Dene people. Little is known about the history of these nomadic hunters and trappers, but their use of the area is clearly shown in the remnants of old camp sites and trails. At the time of the CANOL Project, route selection surveyors relied upon native guides who provided essential information for the final route selection.

NATURAL **RESOURCES**

Geologically there are two features of major significance – one at each end of the Northwest Territories portion of the trail. The first is the sedimentary strata underlying the Mackenzie River lowlands which contain the Norman Wells oilfields and are the reason the CANOL Project was undertaken. These deposits continue to be the centre of much of the present day oil activity in the area. The second is the highly mineralized areas of the Selwyn Mountains along the Yukon border area, containing major tungsten, lead/zinc and silver deposits. The potential for much greater mining activity at the southern end of the CANOL corridor in the Northwest Territories is dependent upon the metal market conditions which presently are extremely depressed. Between the two ends of the route, there is a great diversity of lithologies ranging from Quaternary to Proterozoic age.

A little over one half of the region was covered by ice during the Wisconsin glaciation, resulting in numerous landforms of glacial origin such as broad, U-shaped valleys, glacial meltwater channels, till plains, eskers, roche moutonee, kame terraces and outwash plains. Another major section of the CANOL corridor crosses terrain that was probably not glaciated during that period and displays landforms characteristic of unglaciated areas such as mesas, buttes, tors, heavily weathered surface material and steep sided valleys.

Rock glacier flowing out of cirque near R.M.P

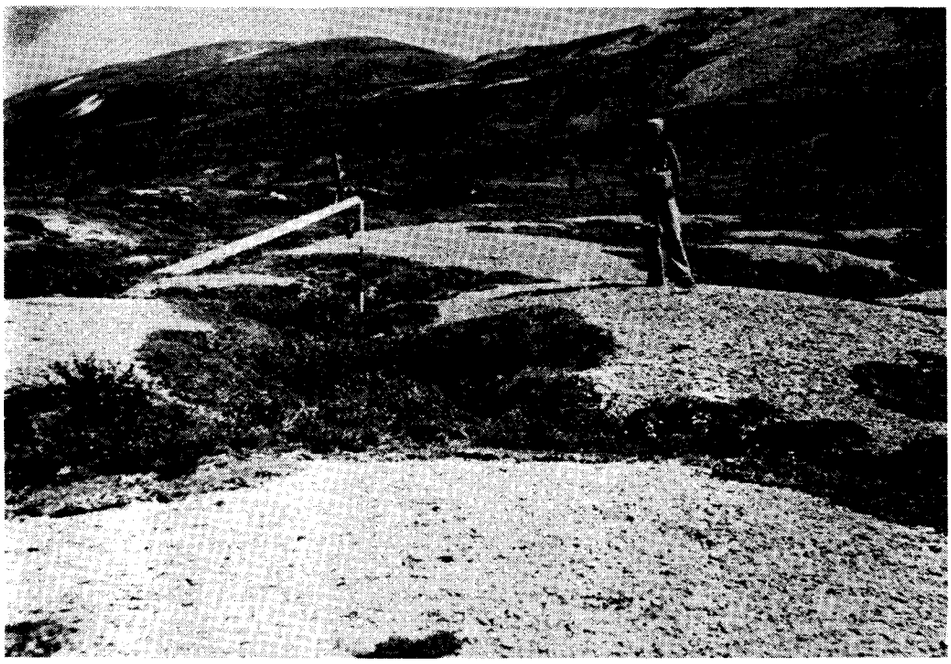
Permafrost is extensive and a wide variety of associated landscape features can be observed. Periglacial features such as patterned ground, sorted nets, polygons, rock glaciers, palsas and peat plateaux are evident adjacent to the road.

Biologically the area is very diverse. Alpine meadows and tall shrub tundra are evident near the Continental Divide while more xeric communities resembling polar deserts are found further north in the Canyon Ranges. Between these two community types, a wide variety of tundra vegetation is readily accessible to the visitor. Lichen dominated communities border many sections of the road and large areas of sedge tussock tundra are crossed by the raised roadbed. Many restricted, rare or disjunct species can be observed. Areas below treeline are representative of the subalpine forest in the Mackenzie Mountains and of the broad, Mackenzie Valley Plain, where extensive areas of muskeg are present.

Figure
(Index Map)

The route is rich in wildlife resources due to the remoteness of the region and the diversity of habitats that are present. Many small mammals are resident in the area including beaver, ermine, wolverine, whistling marmots (at the northeastern extent of their range) and the ubiquitous arctic ground squirrel. Large mammals are also common and are readily observed in the extensive areas of the route above treeline. Most common are caribou, moose, Dan's sheep, grizzly bear, wolves and foxes. Breeding bird populations are also an interesting feature of the region with species including Long-tailed Jaegers, Bald and Golden Eagles, Gyrfalcons and Short-eared Owls. Migratory ducks, geese, swans and cranes are also numerous especially in the Mackenzie River valley.

As a result of the diversity and quality of the natural resources of the region (see Fig. 4 for distribution of important natural resource data), several areas of special status have been recognized along the CANOL route. Approximately 86% of the Canol Road passes through two areas identified as Natural Areas of Canadian Significance (N.A.C.S.): the Carcajou N.A.C.S. (between R.M.P. 10 and R.M.P. 50) and the Upper Keele River N.A.C.S. (between R.M.P. 76 and R.M.P. 231). In addition to the N.A.C.S., three significant wildlife areas, one Natural Site of Canadian Significance, and nine International Biological Program Sites are located along or in close proximity to the Canol Road (see Fig.5).



Telephone line crossing raised centre polygons (Intga Valley)

LAND USE

Existing land use along the Canol Road is limited (see Fig. 6). The most common land use is hunting. The road is located within the outfitting areas of two outfitters: Stan Stevens and Stan Simpson. Approximately one third of the Canol Road lies within Stan Stevens' guiding area and the remaining two thirds lies within Stan Simpson's. These outfitters guide non-resident trophy hunters in the adjacent mountainous areas, usually during the period from July to early October. Godlin Lakes is a major outfitting camp along the road, accessible by fixed wing aircraft using the lake or the air strip at the camp. The outfitters utilize the road for access to adjacent hunting areas by horse. Hunters serviced by the outfitters are buying a wilderness experience and consequently the solitude and wilderness character of the area are extremely important to these operations.

The Canol Road also serves outfitters in guiding areas adjacent to the route by providing access to their areas. Horse parties follow the Canol Road and then branch off to areas such as June Lake. Resident and native hunters also use the road and are active in the areas most readily accessible, at either end of the route. --Access modes are three wheeled motorcycle and/or airplane from Norman Wells and automobile from Ross River.

Presently recreational activity is limited along the route. A few hiking parties use portions of the road each year but their numbers are not documented. Oldsquaw Lodge, on the Mackenzie Mountain Barrens, is the focus of much more intensive recreational use, drawing 80 visitors each year. Using the lodge as a home base, visitors are guided on day outings to nearby areas of interest. Periodically visitors may take more extended trips away from the lodge, and use outlying cabins along the Canol Road for overnight accommodation.

Industrial activity is not present over the vast majority of the route but is evident at either end. Oil extraction and transport dominate the community setting of Norman Wells. The extensive deposits of the area, the recent expansion of the scale of this operation, the construction of a pipeline to Zama Lake in northern Alberta, and the proposed expansion of the facilities at the Norman Wells refinery, all indicate the long term viability of this activity. The present viability of industrial activity at the other end of the Canol Road is far from comparable. Mineral extraction is the focus of interest near the Continental Divide but current economic conditions make activity uneconomical. Potential for development is good and mining could be a major activity in the area that could affect the use of the Canol Heritage Trail in the future. The MacTung mine site is one of the richest tungsten showings in the world and will probably be one of the longer-lived mines in the Mackenzie Mountains (life expectancy 20 years). MacTung is slated for production in the near future but this is dependent upon economic conditions. AMAX also has a lease on land at Camp 222, a potential site for supporting their operations.

Figure 5

Figure 6

(fold out map)

RECREATION

1. Recreational Travel to the Northwest Territories and Norman Wells

People are drawn to the Northwest Territories for a number of different recreational purposes and often combine many activities within a single trip. Activities can be divided into three categories: personal, (visiting friends or relatives); cultural (shopping for crafts or visiting museums); or activities relating primarily to the natural environment, (hunting, fishing, backpacking and boating).

Although recent studies are not entirely compatible for the purposes of demonstrating trends, or comprehensive in terms of the specific activities and motivations of the visitor, certain observations are worthy of note in attempting to understand the present visitor characteristics and travel patterns within the Northwest Territories and more specifically in the vicinity of Norman Wells. Recent surveys show that visiting friends and relatives is an important incentive to visit the Northwest Territories. Study data indicate that in 1984, 40% of all visitors to the Northwest Territories, and 70% in the Inuvik region in particular (which includes Norman Wells), spent at least some of their vacation time with friends or relatives.

Culturally based activities are also very important. The 1984 study found that of the people surveyed, 49% spent time shopping for crafts and 37% visited museums and historic sites. Similar levels of participation in cultural activities were noted in 1983: 52% shopping for crafts and 40% visiting museums and historic sites, and 13% attending local events and festivals. Data for 1982 does not include the same categories, however, 86% of visitors indicated that they were interested in sightseeing and 15% of travelers surveyed also participated in local events.

Activities primarily centred on the natural environment are not well documented in the 1984 survey. The only possible indication of their importance is shown in the transportation and accommodation data and these are also clearly affected by the extent of highway development in the Northwest Territories and the level of associated recreational opportunities and facility development. The survey shows that campgrounds were used by 23% of visitors, lodges by 8% and guides and outfitters by 12% of visitors. Transportation data in this survey indicates that 6% of visitors came by camper and 4% by motorhome. The 1982-83 studies give a much more detailed breakdown of nature related activities. In the 1983 study 32% of travelers were interested in "Nature Study" and as previously mentioned the 1982 study lists 86% of those surveyed involved in "sightseeing" which encompasses these activities. Fishing in the Northwest Territories appears to be the most important single natural attraction for those travelers surveyed (40%, 1983 and 37%, 1982) while hunting is much less important (2%, 1982 and not mentioned in 1983). Non-consumptive uses such as camping (14%), hiking/backpacking (21%), and boating (12%), are also important attractions of the Northwest Territories.

Norman Wells

It is extremely difficult, however, to extrapolate such general data to the present study area since most of the Mackenzie Valley is inaccessible by road which considerably limits recreational travel. People who venture into the Mackenzie Valley must do so by air or water and this, understandably, results in a different pattern of recreational activity as well as being a hindrance to many potential visitors. There are no available studies on specific recreational activities for this area but there is a limited amount of data on the Inuvik region in general. The 1984 study indicated that: 29% of travelers who visited the Inuvik region visited Norman Wells; 27% of travelers to the region were on vacation; and, 70% of those surveyed were primarily there to visit friends and relatives.

Despite its small population and inaccessibility by highway, Norman Wells supports a variety of visitor facilities such as hotels,

restaurants, and retail outlets plus banking, RCMP and air transportation services, in addition to other community recreational services. In addition to the visitors arriving by air, the community also serves as a stopping and supply point for river travelers. The area surrounding Norman Wells offers many outdoor recreational activities. Fishing is a common activity in nearby lakes and streams especially Jackfish Lake, and hunting for sheep, caribou, moose and bear is also popular. Hiking and backpacking, snowmobiling and trailbiking are other important recreational activities in the uplands and valleys surrounding Norman Wells.

A similar pattern of recreational activity is evident in the area adjacent to the Macmillan Pass end of the trail. Fishing and hunting and other forms of outdoor recreation are popular and are supported by relatively nearby settlements such as Ross River. The distinct difference is the availability of road access from the Yukon to the trail head at Macmillan Pass. This advantage has a significant benefit for drawing visitors to experience the Canol Heritage Trail and its environs.

2. Present Use of the CANOL Trail

Hunting, fishing, horseback riding, hiking, nature study, wilderness camping, trail bike riding, and snowmobiling are the activities presently engaged in by visitors to the area. The amount of recreational activity is limited by access and awareness, and accurate estimates of present use are not possible. Little is being attempted presently to support visitor use of the trail or to promote the recreational opportunities that are present. This accounts in large part for the low levels of existing use. Without facility development to support use, extensive promotion and awareness would be undesirable.

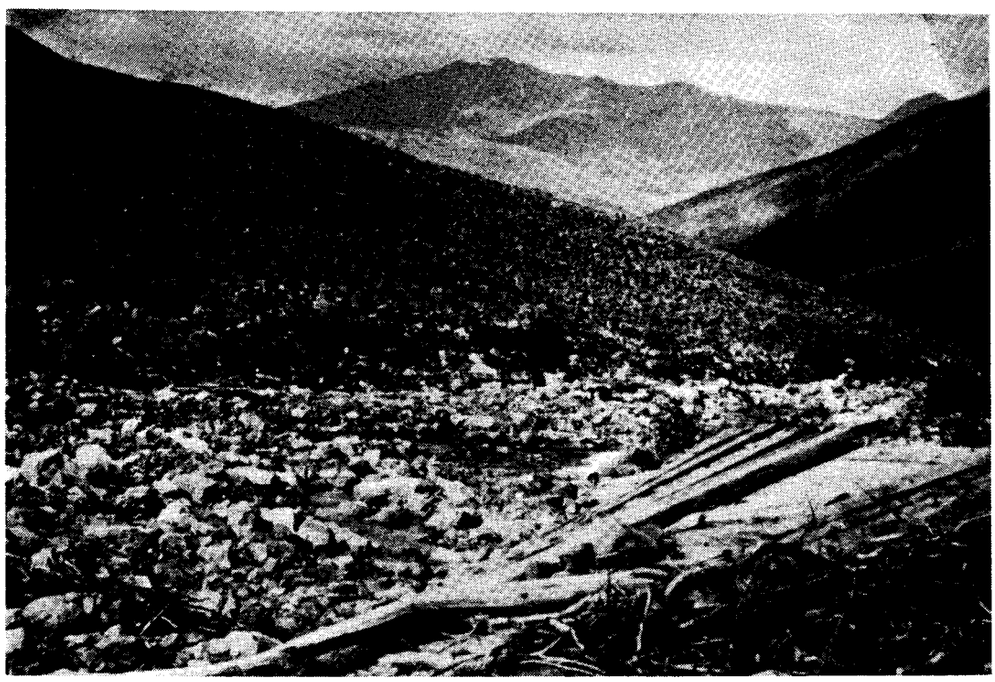
By far the most popular of the current activities is hunting. Northwest Territories residents and native hunters use the areas of the road that are readily accessible (at either end). Residents of the Norman Wells/Ft. Norman area use the north end of the road and gain access by air, snowmobile or motor bike, while residents of CanTung and native hunters from the Ross River area use vehicle access to the Macmillan Pass end of the road. In addition, outfitters also use the road for guiding non-resident trophy hunters. The popular species are Dan's sheep, moose, and caribou.

Only a few hiking parties use portions of the road each year and the numbers are not documented. Most hiking access is through the Macmillan Pass end of the road to the readily accessible high alpine tundra. Other locations along the road have been used by hikers having air access to one of the existing air strips, but use of this nature is extremely limited at present. There are also accounts of hikers attempting to hike the entire length of the trail but success stories are rare. Oldsquaw Lodge, on the Mackenzie Mountain Barrens, is recognized as a naturalist's lodge, providing the opportunity to take part in nature study and wilderness hiking from a more established base camp. About 80 visitors are recorded each year and enjoy day outings to

nearby areas of interest or sometimes overnight hikes utilizing outlying cabins along the Canol Road.

General recreational use by local residents is also very difficult to document. Some insight into the variety and extent of activities has been gleaned from discussions with a number of residents of Norman Wells. The majority of local use is associated with hunting but travel along the road and through surrounding areas by motor bike and snowmobile is also quite popular from the Mackenzie River. Winter use is more frequent due to the accessibility of the area across the frozen river but in the summer many residents own or have access to a boat. During the winter, the most heavily used area is along the road from Norman Wells up to R.M.P. 36. Use beyond this point is much more limited and tends to represent a major outing, not characteristic of local recreational patterns.

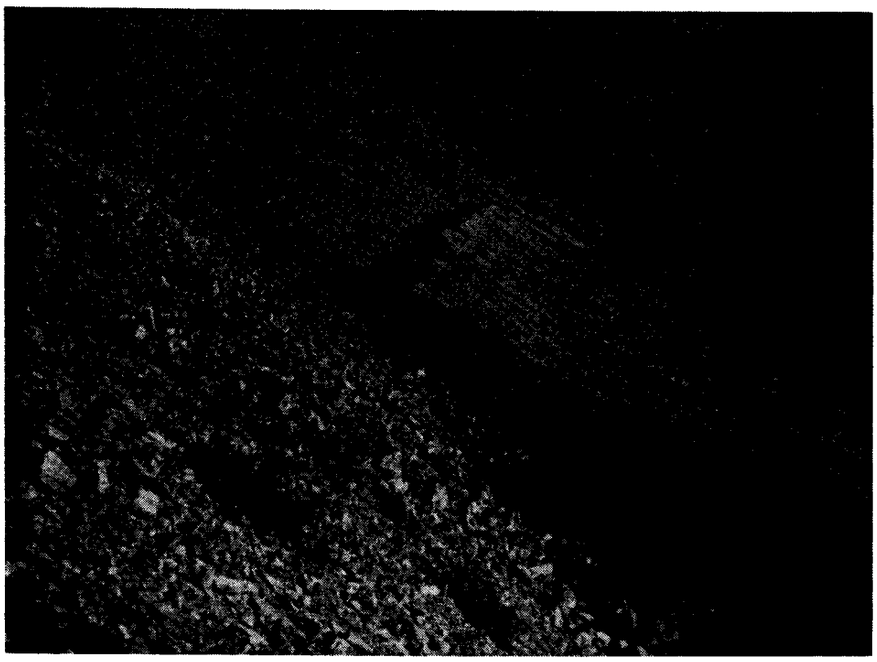
Many more people visit the area from the Yukon/Northwest Territories border to the Tsichu River at R.M.P. 222. The Canol Road from Ross River, Yukon, provides automobile access to that part of the road during the summer and fall.



Extensive blockfields, old bridge on climb to Devil's Pass

A FRAMEWORK FOR ANALYSIS

The abandoned Canol Road through the Northwest Territories extends a total distance of 372 km from the Mackenzie River, across from the community of Norman Wells, to Macmillan Pass on the Continental Divide. Throughout the report, locations on the road are referred to by road milepost (R.M.P.) rather than by kilometre, as many of the posts remain standing today and can be used to accurately locate features. Also, all historical literature refers to areas by milepost as most features along the road are unnamed.



Canol Road twisting through blockfields on Joker Ridge

The length and diversity of this corridor necessitates a systematic means of investigating the resource potentials and constraints. This report uses a framework in which the trail is divided into ten ecosections, representing distinct biophysical environments along the length of the trail. The ecosections are identified below (see Fig. 7).

1. The Mackenzie Plain **Ecosection**

   * the broad, gently rolling, till and alluvial plain of the Mackenzie Valley between the Mackenzie River at R.M.P. 0 and the Carcajou River at R.M.P. 23.

2. The **Carcajou** Range **Ecosection**

* from the Carcajou River crossing at R.M.P. 23 to the valley near Canol Lake at R.M.P. 60, including three major areas: a) Dodo Canyon from R.M.P. 25 to R.M.P. 41; b) a series of ridges where the road passes in and out of tundra (eg. near R.M.P. 43 and again on Joker ridge near R.M.P. 56); and, c) the valley of the Little Keele River from R.M.P. 44 to R.M.P. 55.

3. The Blue Mountain **Ecosection**

* a relatively small mountainous section crossed by the CANOL road between R.M.P. 60 and R.M.P. 69.

4. The Plains of Abraham **Ecosection**

* a series of broad, unglaciated limestone plateaux, buttes and mesas, unique in an otherwise sharply dissected mountainous region, from R.M.P. 69 to R.M.P. 100.

5. The Mount Eduni **Ecosection**

* from a broad alluvial fan at the mouth of Bolstead Creek near R.M.P. 100, over Devil's Pass and down Trout Creek to the edge of the Twitya River Valley at R.M.P. 123.

6. The **Twitya** River **Ecosection**

* from R.M.P. 123 near the mouth of Trout Creek, through the broad Twitya River valley, entirely below treeline, to a pass above the Godlin River.

7. The **Godlin** River - **Ekwi** River **Ecosection**

* broad, steep-sided valleys between the low pass above the Godlin River, R.M.P. 134.5 and the mouth of Bull Cook Canyon at R.M.P. 184.5.

8. The Caribou Pass - **Intga** River **Ecosection**

* two high alpine tundra valleys between R.M.P. 184.5 and R.M.P. 209.

9. The Mackenzie Mountain Barrens **Ecosection**

* very productive, high, flat, open plateau extending from R.M.P. 209 to R.M.P. 216.

10. The **Tsichu** River - Macmillan Pass **Ecosection**

* from the broad, gently sloping Tsichu River Valley near R.M.P. 216 to Macmillan Pass on the Continental Divide at R.M.P. 231.8.

Figure 7

(fold out map)

THE MACKENZIE PLAIN ECOSECTION

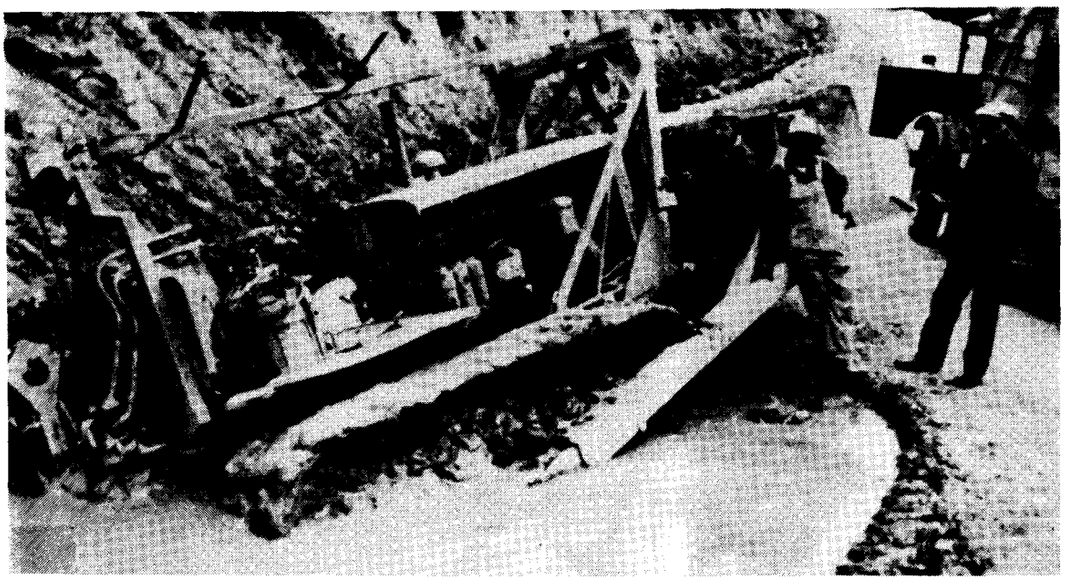
Opportunities

1. the present oil production activity of the Norman Wells area and the new pipeline south to Zama Lake provide an excellent opportunity for interpreting modern oil development as well as providing the context for the Canol Project story for visitors to the community of Norman Wells.

2. the area affected by oil extraction will probably not expand much beyond its present limits, although more wells will likely be drilled so that impact upon the recreational values of the trail should be minimal.

3. Camp Canol, once a bustling town complete with living quarters, supply depots, dock facilities, airport and recreational facilities through which most of the estimated 30,000 workers passed, has now been virtually demolished. However, the site itself, its location within the existing community boundaries of Norman Wells, make it an excellent location for some form of interpretive program.

4. 40 km of roadbed on the Mackenzie Plains was abandoned when the Dodo Canyon route was selected. Heavy machinery was mired in the muskeg and tremendous construction difficulties were faced by the inexperienced Canol engineers during the early stages of construction. The muskeg conditions necessitated building the roadbed from the end of the already formed road. This setting provides good interpretive opportunities for understanding the challenges of the construction activity.



Thawing of underground ice presented difficulties for work crews

5. boaters on the Mackenzie River could avail themselves of interpretive opportunities provided at the visitor centre and at Camp Canol.

6. the community of Norman Wells is a major access point in the region, served by daily jet service from Yellowknife and Edmonton. The community is also a base for many small fixed-wing aircraft and helicopters from around the area.

7. the airstrip at Canol Camp provides ready access to one of the main sites of historical interest.

8. wildlife is plentiful on the Mackenzie Plain and although not readily visible due to dense vegetation, protective cover makes close encounters more likely. Moose and wolves are common. Caribou are also present during the winter months.

9. the Mackenzie Plain is a major migratory route and a spring and fall staging area for a wide variety of waterfowl, providing good viewing opportunities.

10. the Canol Road provides an excellent access route through the very difficult muskeg terrain of the plain.

11. this environment covers vast areas of Canada yet is known by few Canadians. Interpreting periglacial geomorphology, plant communities and wildlife would certainly be valuable to the public.

12. terrain is flat and road conditions are generally good for hiking or motor bike access although the roadbed has become overgrown with shrubs in many areas.

13. the extensive Quaternary deposits underlying the plains and resting on Cretaceus bedrock types are very important and very well known as a result of the intensive exploration activities associated with the hydrocarbon extraction in the Norman Wells area. The geology of this area could be an interesting component in an interpretive program.

14. the surface features of the Mackenzie Valley plains include deep till deposits with examples of eskers and, where the ice sheets reached their limit against the Canyon Ranges, kames, erratics and spillways are present. Extensive ground ice and many permafrost features such as hummocks and ice wedge polygons, palsas and peat plateaux are also present. This variety of features could play an important part in interpreting the natural history of the area.

15. excellent fishing in the Carcajou River.

Constraints

1. the geology of this area is central to the Canol story but extremely difficult to appreciate on the ground.

2. appreciation of geomorphological features is limited since the road is the only means of traversing the muskeg dominated landscape, and vegetation and topography prohibit distant viewing.

3. much of the road surface and ditches are overgrown and viewing of natural vegetation and local wildlife is often difficult.

4. heavy vegetative cover tends to provide wildlife encounters rather than opportunities for wildlife viewing. While these may be recreational opportunities, they may also be a cause for concern among users especially in association with bears.

5. enclosed trails, as a result of vegetation growth, can become monotonous to hikers.

6. local hunting activity in the area and the support facilities that are used by the locals, could conflict with the opportunities and activities that would be encouraged for visitors. The single access route across the plains to the mountains necessitates use by all types of users.

7. historical remains from the construction period have been heavily vandalized, destroyed or removed.

8. during the early summer or in wet years, biting insects can be numerous.

9. drinking water supply is limited to stagnant pools in spite of plentiful surface water throughout this area.

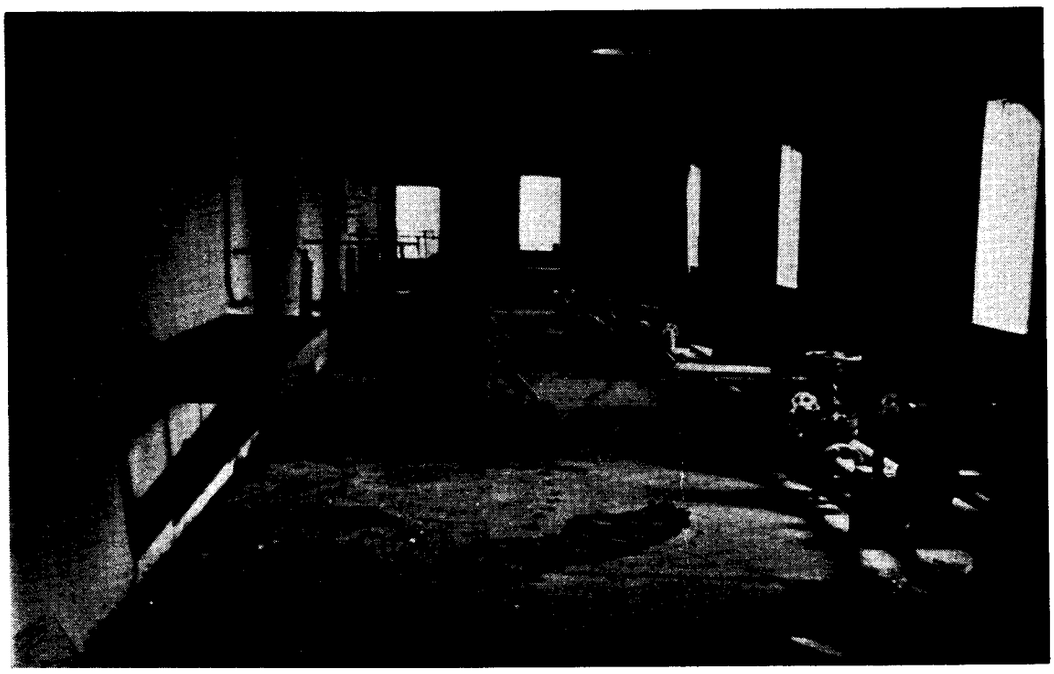
10. hikers must cross the Mackenzie River by boat or aircraft.

11. the Carcajou River, at R.M.P. 23, is a major river with three or four large channels. It is possible to ford the river at the end of a dry summer but most hikers would have to swim across, rafting their packs.

THE CARCAJOU RANGE ECOSECTION

Opportunities

1. a variety of historical structures and equipment can be found throughout the area. Pump Station No. 2 at R.M.P. 36.5 contains wanigans, quansats, pumphouse, cookhouse, insulated waterlines, surge tank and scattered artifacts. A few other buildings are found at sites such as R.M.P. 50 and a few telephone poles still remain at the head of Dodo Canyon.



Abandoned pumphouse at Pump Station No. 2

2. canyons are the most spectacular landform of this ecosection. The Canol Heritage Trail follows Dodo Canyon for approximately 25 km (R.M.P. 25.5 to R.M.P. 41) and several smaller canyons such as Echo Canyon converge with this main valley. Carcajou Canyon, much larger than the others, is readily accessible, a short hike from the trail. Scenery is exceptional and provides outstanding opportunities for photography. In winter, spectacular ice falls are also attractions. The area is contained within the proposed Dodo Canyon Territorial Park.

3. a variety of landscape characteristics provide excellent interpretive opportunities including: a diversity of vegetation types ranging from mixed forest to tundra; karst features such as caves, dolines, and polje; outcrops in the form of pinnacles; erosional processes evidenced by mass wasting landforms in Dodo Canyon, scree slopes and landslides; and fluvial processes active in the valley bottoms.

4. excellent wildlife viewing opportunities, especially of resident sheep on the walls of Dodo Canyon. Moose and caribou, also present year round, can be observed in tundra areas during the summer.

5. grayling in the pools of Dodo Creek and excellent fishing in the Carcajou River.

6. air access readily available at Canol Lake, less than 1 km from the trail.

7. excellent opportunities for side trips to other interesting and beautiful areas near the Canol Heritage Trail (eg. an abandoned road to Carcajou Falls leaves the Canol Road near R.M.P. 59).

Waterfall in the narrow winding canyon of Echo Creek

Constraints

1. natural processes may be a hazard to travel in the canyons at certain times: landslides have inundated the roadbed; rockfalls are very common following heavy rainfall; torrential flooding can occur in constricted river channels; in winter, open water can be an obstacle to creek crossings.

2. wildlife could be sensitive to disturbance, especially DalI's sheep in the relatively confined environments of the canyons, and caribou and sheep overwintering around Canol Lake.

3. relatively high use of the area and a lack of natural wood supplies in portions of the ecosection have resulted in the destruction of many historical structures.

4. wood supply would have to be provided in some areas (eg. Pump Station No. 2).

5. Dodo Creek must be crossed and recrossed in the canyon, and the road bed is virtually gone.

6. Little Keele River (R.M.P. 50) can usually be forded by late summer, but swimming may be necessary during high water periods.

7. any facility development will significantly increase the local recreational use of the area. The wilderness quality of the hunt offered by outfitting operations along the trail will be affected by this additional use. Increased local hunting will also affect the availability of game animals.

THE BLUE MOUNTAIN ECOSECTION

Opportunities

1. many interesting features found in this relatively narrow but scenic ecosection. Landform features such as blockslopes (R.M.P. 62.5 - 66.5), patterned ground (R.M.P. 64.5), old mudflows now vegetated (R.M.P. 65), rock glaciers (R.M.P. 63) and a broad, braided channel along the Little Keele River with river icings throughout the summer are potential features for interpretation.

2. unusual flora are present with high arctic species and several species with restricted ranges in the Northwest Territories. The road passes through a wide range of plant communities over a short distance (eg. alpine spruce forest to crustose lichen tundra) due to changes in elevation.

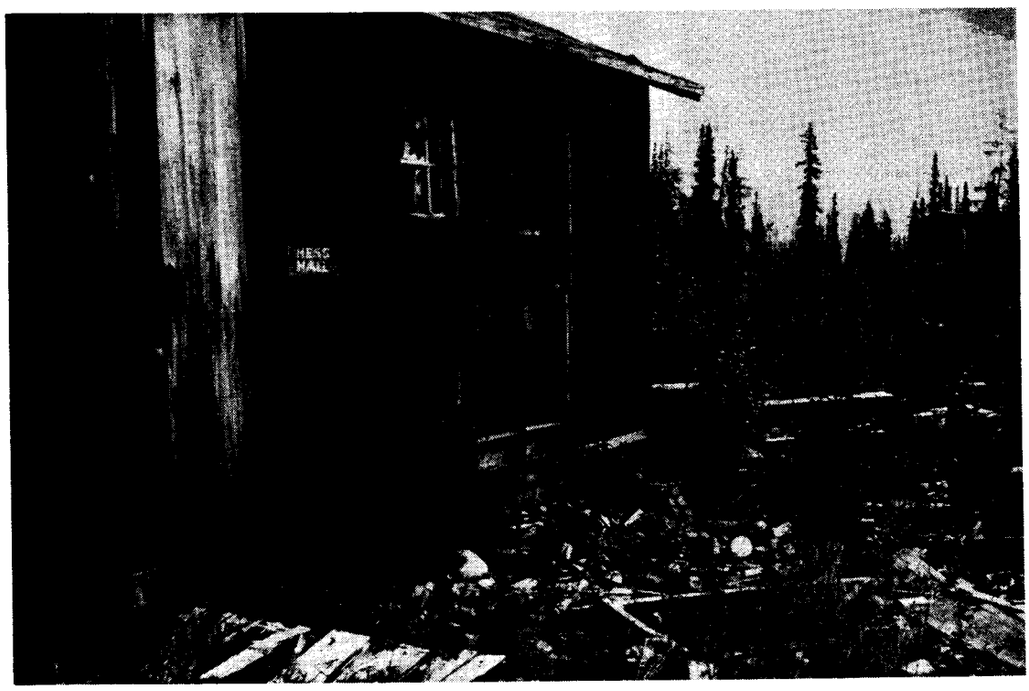
3. the road is nearly all above treeline in this ecosection with many scenic views, including an excellent overview of Little Keele River near R.M.P. 67 and spectacular views from peaks adjacent to the road (above R.M.P. 63 and 67).

4. wildlife viewing opportunities are common. Sheep, wolves, caribou and moose are often visible along the route. Rock and willow ptarmigan are common in shrub dominated communities.

5. two roads through this ecosection illustrate changes in the original route as a result of troubles encountered with avalanches and steep grades. Three separate corridors (road, pipe and telephone line) are present here.

6. a pile of pipe near R.M.P. 66.5 below a steep re-routed section of the road, is a likely site of a truck leaving the road - an interesting interpretive opportunity in conjunction with the winter road on the other side of the valley.

7. wanigan at R.M.P. 66 has colour murals on the walls dating from the CANOL Project.



Road camp on north side of Little Keele River

8. no major river crossings in this ecosection.

9. fixed-wing access is possible near either end of this ecosection (on floats at Canol Lake near R.M.P. 56.5 or on wheels at R.M.P. 72).

Constraints

1. most historical structures of the area have collapsed. Wanigan at R.M.P. 66 has river icings encroaching on it in winter and is close to present dry channel in summer.

2. possibly some conflict between hunting parties and other trail users.

3. no firewood except in a few areas below treeline.

4. terrain is rugged and road conditions are occasionally difficult. Steep grades exist along the original and more scenic of the two routes with the roadbed washed out completely in most gullies. Grades are less steep on the winter road but dense willow thickets obscure the roadbed for approximately 6 km forcing use of game trails. Access to either route is obscured from the south due to erosion of the road by the Little Keele River and the growth of shrubs.

5. slopes above the original road on Blue Mountain are often unstable, with many slumps, mudflows, and rockfalls. Avalanches are common in the winter.

THE PLAINS OF ABRAHAM ECOSECTION

Opportunities

1. many historical resources in the area provide good opportunities for interpretation of the Canol Project: Pump Station No. 3, R.M.P. 74.5, with a number of buildings, several trucks and some road equipment is typically located at the beginning of a major increase in elevation; a road maintenance camp at R.M.P. 80 has a few buildings and numerous artifacts in a very scenic location; wanigans at R.M.P. 83.6, R.M.P. 84.8 and R.M.P. 90; and pipe sections at R.M.P. 74.5 and R.M.P. 79. Many of the telephone poles on the plateau are still standing and many have been split by lightning; three rights-of-way (road, pipeline and telephone line) can be observed; cairn above R.M.P. 90 dating from 1943.

2. excellent landscape interpretation opportunities. Unusual and interesting features typical of non-glaciated landscapes are found here. Pitted, chemically weathered rock is indicative of unglaciated surfaces. Landforms such as mesas (R.M.P. 89) and tors (northeast of R.M.P. 80) are readily viewed from the road. Extensive blockfields and blockslopes are found on the plateau surface and sides. The surface also contains extensive examples of periglacial features such as stripes (near R.M.P. 83) and sorted circles (near R.M.P. 84). Bedrock is limestone and dolomite while crystallized fossils and geodes are common in some areas.

3. half the area adjacent to the road is alpine tundra, potentially of refugium origin. It is similar in many respects to the vegetation of polar regions but is unique in the Mackenzie Mountains. Several species of restricted or disjunct range in the Northwest Territories are found here. Excellent biological interpretive opportunities.

4. a variety of wildlife is present in the area providing good viewing opportunities and the road tends to be used by many species (eg. caribou, sheep and ptarmigan) as a preferred route. A number of arctic and/or more westerly birds nest on the Plains of Abraham such as the Long-tailed Jaeger and American Golden Plover.

5. many spectacular views and excellent photographic opportunities especially on the high plateau.

6. good opportunities for side trips from the road onto the Plains of Abraham and to Carcajou Lake.

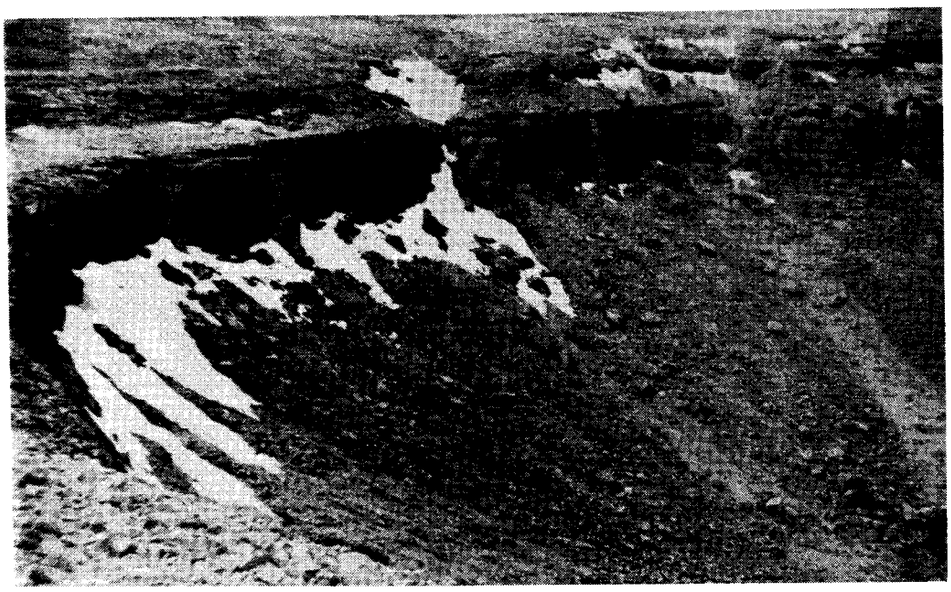
7. aircraft access possible at R.M.P. 80 and 72, but is preferable at the lower site (R.M.P. 72) in the valley; also float plane access at Carcajou Lake.

8. road is generally in good condition although some sections have been washed out (eg. between R.M.P. 74 and 79).

9. gentle slopes and easy hiking on the Plains of Abraham and in the Carcajou River valley. Excellent skiing conditions in winter.

10. no major river crossings.

11. extensive river icings on Andy Creek and along the Carcajou River provide excellent routes for winter travel and good caribou viewing during summer.



Cliffs flanking the Plains of Abraham plateau

Constraints

1. caribou use this area for calving in early May and sheep use areas on nearby cliffs for lambing. A sensitive area in the spring and possibly in winter.

2. trophy hunting in the area could conflict with other users of the trail and may reduce wildlife viewing opportunities.

3. two I.B.P. sites are found within the ecosection and the Plains of Abraham has been identified as a unique wildlife management area. Also, a sensitive wildlife management area has been identified at Carcajou Lake due to the presence of nesting peregrine falcons.

4. frequent high winds on the exposed plateau have damaged CANOL structures in that area; winter blizzards can be severe.

5. wood supplies only available below treeline.

6. flowing water is limited on some parts of the plateau but generally plentiful.

7. steep slopes surrounding the Plains of Abraham are often unstable and treacherous.

8. avalanches are common in spring on steep slopes surrounding the plateau.

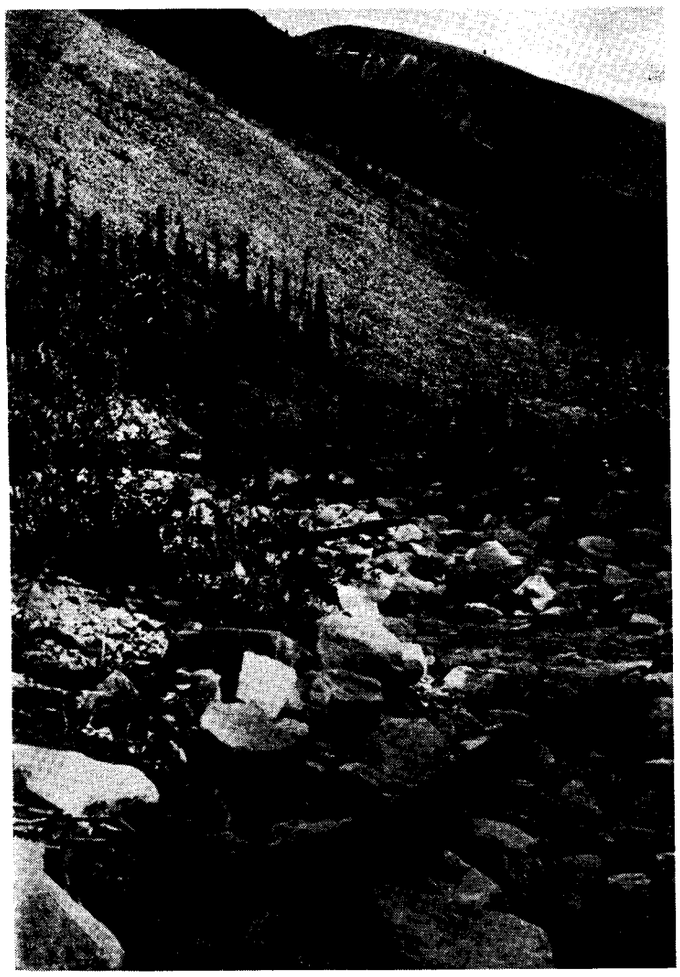
9. any facility development will significantly increase the local recreational use of the area. The wilderness quality of the hunt offered by outfitting operations along the trail will be affected by this additional use. Increased local hunting will also affect the availability of game animals.

TEE MOUNT EDUNI ECOSECTION

Opportunities

1. very good interpretive opportunities with respect to heritage resources. Pump Station No. 4 is the major site with extensive remains of buildings and equipment. There are also good examples of oil spills in Devil's Pass, a large building (possibly a supply depot) at R.M.P. 100, and washed out bridges and twisted sections of pipe along Trout Creek.

2. interesting landscape features with good interpretive potential include mudflows over the road (R.M.P. 119.8 and 120.2), large scale patterned ground (near R.M.P. 106), block slopes and rock glaciers above Trout Creek.



Remnants of pipe twisted by stream action on Trout Crack

3. a variety of vegetation types including many interesting plant species with arctic affinities and also many with restricted range in the Northwest Territories are present.

4. a wide variety of birds and mammals provide plentiful viewing opportunities. DalI's sheep and caribou are often observed in and around Camp 108.

5. good access to Mount Eduni, one of the highest mountains in the region (2,352 m), only 8 km up the valley from the camp at R.M.P. 108.

6. a very scenic area entirely encompassed by the Upper Keele River Natural Area of Canadian Significance.

7. no major river crossings.

8. terrain is rugged but grades along the road are generally gradual and the road condition is reasonably good through this ecosection.

9. excellent winter recreation opportunities.

10. outfitting base camp in the area could also provide supplies and services to other trail users.

Constraints

1. debris flows and slush and snow avalanches are common on steep slopes.

2. wintering area for Dan's sheep near the road.

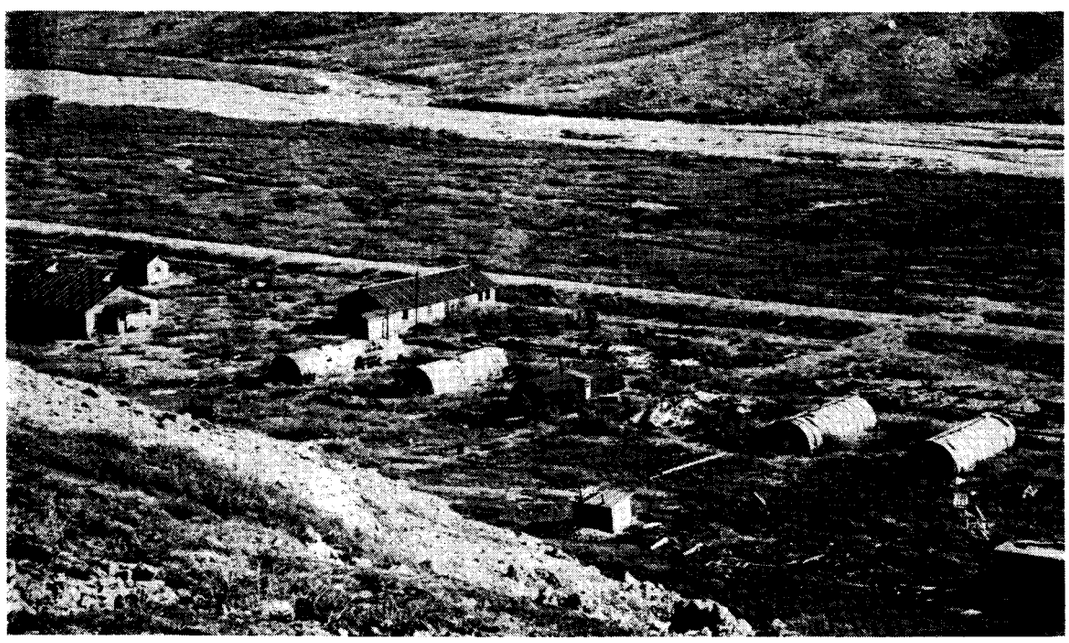
3. Pump Station 108 is used as an outfitting camp.

4. deep valley of R.M.P. 108 limits direct sunlight and funnels winds, often creating blizzard conditions in winter.

5. wood supply limited to areas below treeline; none at Camp 108.

6. access more limited than in other areas. Camp 108 is a very difficult and not a preferred landing site for aircraft due to terrain and wind conditions. This section lies midway along the trail and is equally difficult to reach from either end.

7. potential conflict with trophy hunters in this area.



Quansat huts at Camp 108

TEE **TWITYA** RIVER **ECOSECTION**

Opportunities

1. heritage resources with interpretive potential include the road camp on the Twitya River at R.M.P. 131, and a long dilapidated bridge with the pipeline connected to it on Deca Creek.

2. the hot springs at the Twitya River are an unusual and interesting feature with interpretive and recreational potential.

3. representative features such as the fluvial formations including river bars, cut banks along the river, and the well-forested valley are typical of the major valleys in the region and have good interpretive potential.

4. the remaining roadbed is fairly continuous and predominantly of low grades except from R.M.P. 125 to 129.

5. a very scenic area with expansive views of the Twitya River valley and its confluence with the Keele, in rugged mountainous terrain.

6. wood and water supplies are plentiful.

7. good fishing in the Twitya River.

Constraints

1. limited heritage resources on this section of the trail. The Twitya River is undercutting a few of these wanigans at the road camp at R.M.P. 131.

2. the Lymnaea Springs I.B.P. site is a sensitive feature that warrants protection.

3. the Twitya River is the deepest river along the route and cannot be forded.

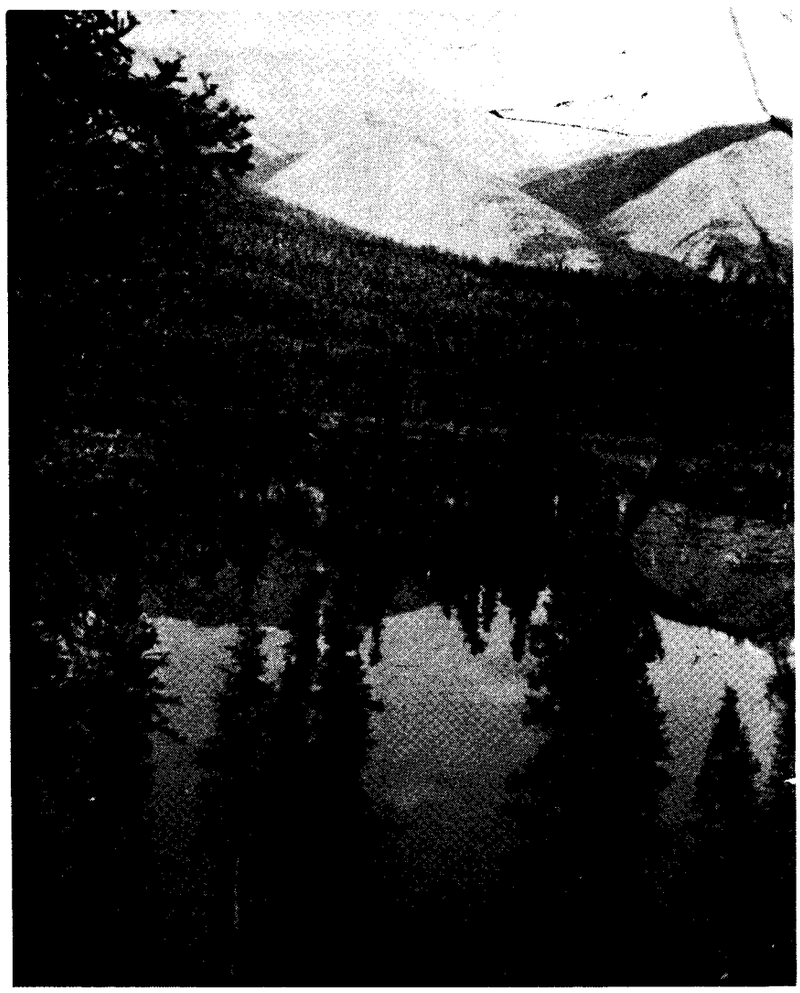
4. no aircraft access to this ecosection.

5. potential conflicts between hunting and other activities in this area.

Opportunities

1. historical resources in the area centre mainly on Pump Station No. 5 at R.M.P. 170 which has an excellent pump house and many other buildings. There are also excellent examples of oil spills in the area and numerous scattered artifacts. Also there are several wanigans and washed out bridges along the road in this ecosection.

2. the Godlin Lakes valley occupies the axis of a major syncline and contains many spectacular features with very good interpretive potential (eg. pinnacles above R.M. P. 160, vertical bedding and folded strata above R.M.P. 169 and limestone cliffs with massive debris slopes near R.M.P. 174).



Godlin Lakes

3. many landforms with good interpretive potential. Features include: classic landforms such as massive alluvial fans, avalanche scars and mudflows prevalent in the Godlin River valley; numerous periglacial features (eg. rock glaciers and palsas); and evidence of the most recent glaciation (eg. extensive pitted glacial outwash in the Upper Ekwi River valley). The ecosection also contains the last forest stands on the remainder of the route to the Yukon border at Macmillan Pass.

4. frequent wildlife viewing opportunities. Woodland caribou are found throughout the area, moose are common in willow communities, and Dan's sheep can be frequently spotted from the road on the higher slopes. Grizzly bears, wolves and foxes are also common. Raptors such as Golden and Bald Eagles, and Gyrfalcons nest within the ecosection and Willow Ptarmigan are common.

5. fishing is good , with grayling and Dolly Varden being plentiful in the Godlin River and Godlin Lakes and spawning in the smaller streams.

6. the landing strip and buildings at R.M.P. 167 are currently used by an outfitter as a base camp. Fixed-wing aircraft access is possible at the landing strip and also by float plane at Godlin Lake.

7. steep sided valleys from R.M.P. 140 to 162 and the broad valley of the Godlin Lakes surrounded by rugged mountains are very scenic.

8. wood and water supplies are plentiful.

9. outfitting base camp in the area could also provide supplies and services to other trail users.

10. rivers are generally fordable (the Godlin River at R.M.P. 162 and the Ekwi, 4 times between R.M.P. 172 and 179).

11. many opportunities for interesting side trips from the main trail into the surrounding mountains.

Constraints

1. many historical artifacts from the area have been salvaged by outfitters and visitors to the area.

2. the presence of the outfitters camp and the activity of trophy hunting, through most of the summer (July to October) may conflict with other uses of the area.

3. any facility development will significantly increase the local recreational use of the area. The wilderness quality of the hunt offered by outfitting operations along the trail will be affected by this additional use. Increased local hunting will also affect the availability of game animals.

4. mineral exploration has taken place in the area and could be revived if economic conditions were suitable.

5. terrain is very rugged with steep slopes adjacent to the road through most of the ecosection. Many slopes are prone to catastrophic events such as avalanches, mudflows and slumps, and thus could be hazardous following periods of heavy rainfall or in the late spring.

6. moose, caribou and Dan's Sheep overwinter in this ecosection.

7. the Ekwi River is a mountainous stream with a flashy drainage basin response. It can become fast flowing and treacherous during spring melt or following periods of heavy rain.

THE CARIBOU PASS - INTGA RIVER ECOSECTION

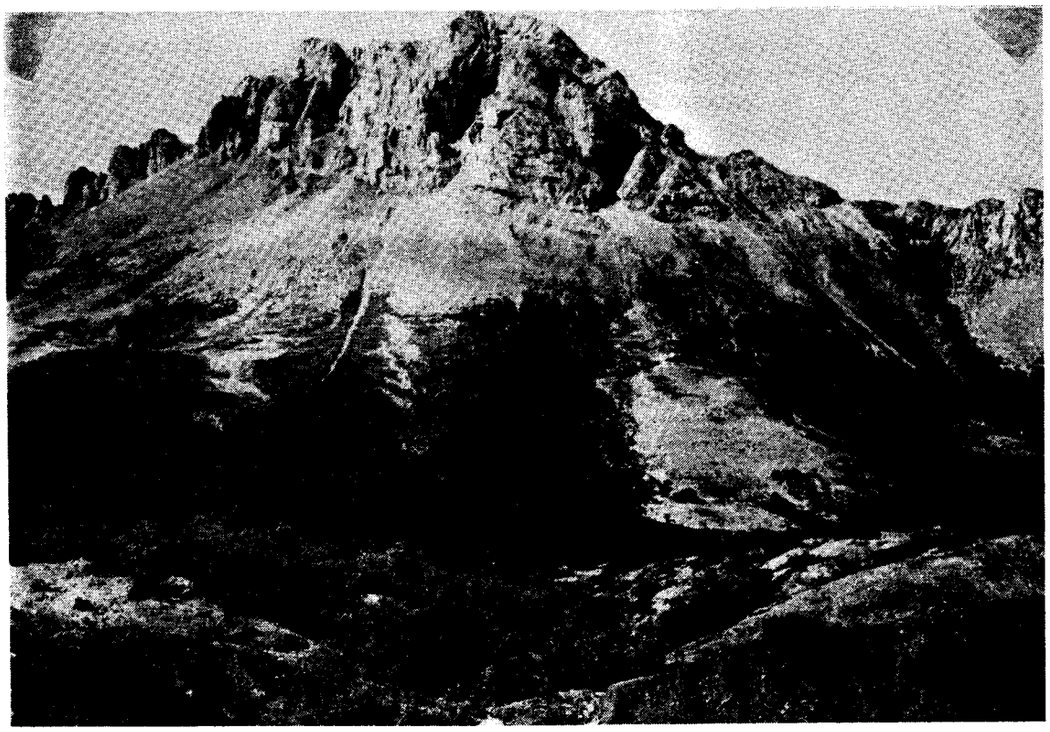
Opportunities

1. good heritage interpretive opportunities: Pump Station No. 6, located on the border of this ecosection at the beginning of the climb to the Mackenzie Mountain Barrens, is probably the largest camp remaining along the trail and has several buildings in relatively good condition. A variety of other structures, sections of pipe, equipment and artifacts remain along the route.

2. natural history interpretation potential in the area is considerable: periglacial features (eg. massive lobate rock glacier near R.M.P. 188, palsas in Caribou Pass near R.M.P. 194, and open system pingos adjacent to the road near R.M.P. 197); glacial features (eg. cirques and ice stagnation features) surrounding Caribou Pass; vegetation with extensive fens in the Caribou Pass area and several types of tundra, ranging from erect shrub tundra to crustose lichen tundra with sedge meadows in wetter areas. Several plant species of restricted range in the Northwest Territories are also found in this ecosection.

3. wildlife generally abundant with frequent viewing opportunities. Moose and caribou are common and extensive areas of prime grizzly bear habitat are present. A colony of marmots at Caribou Pass (R.M.P. 193), is probably the most northeasterly colony in Canada. Several mineral licks adjacent to the road between R.M.P. 203.5 and R.M.P. 204.5 provide excellent wildlife viewing opportunities. Eagles and Gyrfalcons are frequently observed. Bank swallows often form large colonies in abandoned buildings and under bridges.

4. very scenic valleys with excellent photo opportunities.



Rugged mountains and alpine meadows along Intga River

Constraints

1. many artifacts and some buildings have been salvaged by outfitters, Oldsquaw Lodge and visitors to the area.

2. potential conflict between various types of activity. Visitors reach this ecosection using 4 wheel drive vehicles, however, most do not go past the Mackenzie Mountain Barrens. Camp 208 is used as a base camp by outfitters. Local hunters also visit this ecosection.

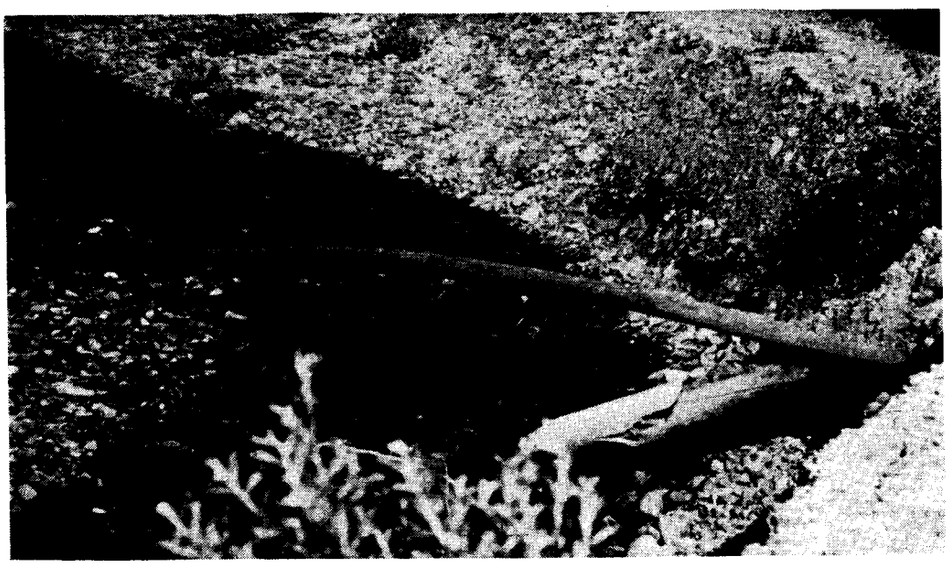
3. wood supplies are limited and buildings have often been used as fuel.

4. several mudflows and landslides on or adjacent to the road in this ecosection are an indication of a potential hazard.

5. mineral licks in close proximity to the trail may be considered sensitive sites.

6. no aircraft access to this ecosection.

7. Intga River, a mountain stream subject to rapid fluctuations in water levels, can be treacherous during spring flood or following heavy rains.



Eroded sections of the road along the 1 ntga River

THE MACKENZIE MOUNTAIN BARRENS

Opportunities

1. good opportunities for heritage appreciation: an interesting side trip to Fish Lake along an old tractor trail dating from the 1942-43 winter survey; a special point of interest in the vicinity of R.M.P. 217 where the north and south sections of the Canol Road met on December 31, 1943.

2. extensive periglacial features throughout the area provide good interpretive opportunities. Good examples of palsas and peat plateau complexes and numerous examples of thermokarst along the road. A feature of special interest is the volcanic ash found throughout this area dating from 1220 B.P.

3. an open area with high large mammal population levels and therefore many excellent wildlife viewing opportunities (eg. woodland caribou numerous from calving to the rut; large moose populations; grizzly bears viewed often); interesting bird populations including many northern species (eg. Long-tailed Jaegers, Oldsquaw and Lapland Longspur), several raptors and migratory flocks of snow geese.

4. Oldsquaw Nature Lodge provides accommodation and experienced guiding for registered guests while other visitors are welcome to take advantage of the services offered as well. Outfitters also provide similar services to visitors along the trail.

5. the area is accessible by 4 wheel drive from the Yukon, by float plane at Harlequin Lake near R.M.P. 216, or on foot from the Tsichu River (R.M.P. 222)

6. very scenic area with broad vistas across the barrens and snow capped mountains in the surrounding ranges.

Constraints

1. most structures and artifacts from the Canol Project have been salvaged.

2. outfitting and resident hunting could conflict with other activities in this area.

3. the Mackenzie Mountain Barrens is entirely included in I.B.P. site #58, suggesting careful management of this special wildlife area. Caribou and moose calving areas adjacent to the road.

4. no firewood supplies in the ecosection and flowing water can be limited in some areas.

5. terrain generally very wet and tussocky with dry, flat camping sites often restricted to the roadbed.

6. there are no natural barriers preventing all terrain vehicles from leaving the trail right-of-way and traveling across the sensitive terrain of the barrens. Forty year old vehicle tracks dating from the CANOL are still evident today.

Lush wetland meadows of Mackenzie Mountain Barrens

Opportunities

1. historical remains focus on the site of the road camp at R.M.P. 222. Some structures, as well as considerable equipment and artifacts still remain. The large building above the Tsichu River (Camp 222) is in relatively good condition and could probably be utilized. Several trucks remain in an old gravel pit near R.M.P. 223. A special point of interest at R.M.P. 231.8 is where the north and south sections of the pipeline met on February 16, 1944.

2. very good potential for interpretation of: a) geology - well known due to the exploration and extraction activities centred around several good showings of tungsten, lead/zinc and silver. Intruded igneous rock forms necks and dykes seen as peaks and ridges. Deposits of volcanic ash dating from 1220 B.P. found throughout the area are of special interest; b) geomorphology - many good examples of periglacial and glacial landforms (eg. gelifluction lobes, patterned ground, eskers, kame terraces, and cirques); c) vegetation - wide variety of tundra plant communities. Alpine flora contains many species at the easternmost extent of their range.

Porsild's palsa field neer R.M.P. 230

3. good wildlife viewing opportunities. Caribou, moose, grizzly bears, wolves and foxes are common and frequently seen in this area. Numerous beavers are found in tundra areas along the Tsichu River with many dams and runways.

4. very scenic area with high mountains and broad, open views towards the Barrens.

5. many opportunities for interesting side trips into the surrounding mountains (eg. to Keele Peak via horse trails)

6. good fishing in the Tsichu River.

7. no major river crossings.

8. road is gently sloping making easy hiking.

9. easy access by road and air from the Yukon. This area is presently the most heavily used part of the trail. Access could be improved further with the up-grading of the road and bridges in the Yukon. The improvement of the Tsichu River airstrip, which may be completed to support mining activities near Macmillan Pass, would also improve access.

Constraints

1. AMAX and Oldsquaw Lodge have leases on the land at Camp 222, which could specifically affect the use of that site.

2. hunting activity in the area is relatively high especially by local residents and could increasingly conflict with other recreational uses.

3. the area is important caribou habitat during the calving and post-calving period on the slopes east of R.M.P. 222.

4. many historical resources have already been "cleaned up" or salvaged.

5. no firewood supplies exist in this area.

Bull Cook Canyon

The analysis of available information and consideration of alternative strategies has led to the acceptance of this plan. It gives primary consideration to protecting the natural and cultural resource values of the area and the wilderness qualities of the recreational experience while providing a wide range of interpretive opportunities. The plan includes those developments and activities considered compatible and complementary to such a focus.

The plan is based on the principle that the Canol Heritage Trail has high recreational and interpretive potential and will provide an excellent wilderness recreational experience within which to communicate the CANOL story. It is proposed that through the proper promotion and availability of information regarding the trail opportunities, and the development of a visitor centre in Norman Wells, broader appreciation and use of the area will be achieved. The potential for such increased use is considered sufficient to warrant a moderate level of initial facility development which could be expanded in the future if sufficient interest is demonstrated. It is envisioned that all elements of the plan could be expanded to provide greater opportunity for a wide variety of visitors to the trail. The proposed development is intended to supplement increased activity in the private sector to provide visitor services to users. A separation of activities is encouraged so that certain activities will not be encroached upon by other incompatible uses.

PURPOSE AND OBJECTIVES

The Canol Heritage Trail warrants special designation and development because of the historical significance of the route and the quality of its natural resources. Its purposes will be:

1. to provide recreational opportunities which will contribute to the visitor's understanding and appreciation of the **CANOL** Project in the context of northern oil development; and
2. to protect the cultural and natural resources that make this area so outstanding.

To achieve these purposes a number of more specific objectives have been identified which will direct the development and use of the Canol Heritage Trail.

1. Recreational Objectives

The Canol Heritage Trail passes through a natural area having high recreational potential and one that, for the most part, can be readily seen and experienced by the visitor. To gain the best appreciation of that environment and to protect its high natural quality, recreational activities that are conducive to direct contact with the environment should be promoted. Similarly, the story of the CANOL Project will be

more fully appreciated if the full experience of the natural environment is available to the visitor. Consequently the following objectives have been identified:

* **to promote greater use of the Canol Heritage Trail by both local users and tourists to the Northwest Territories;**

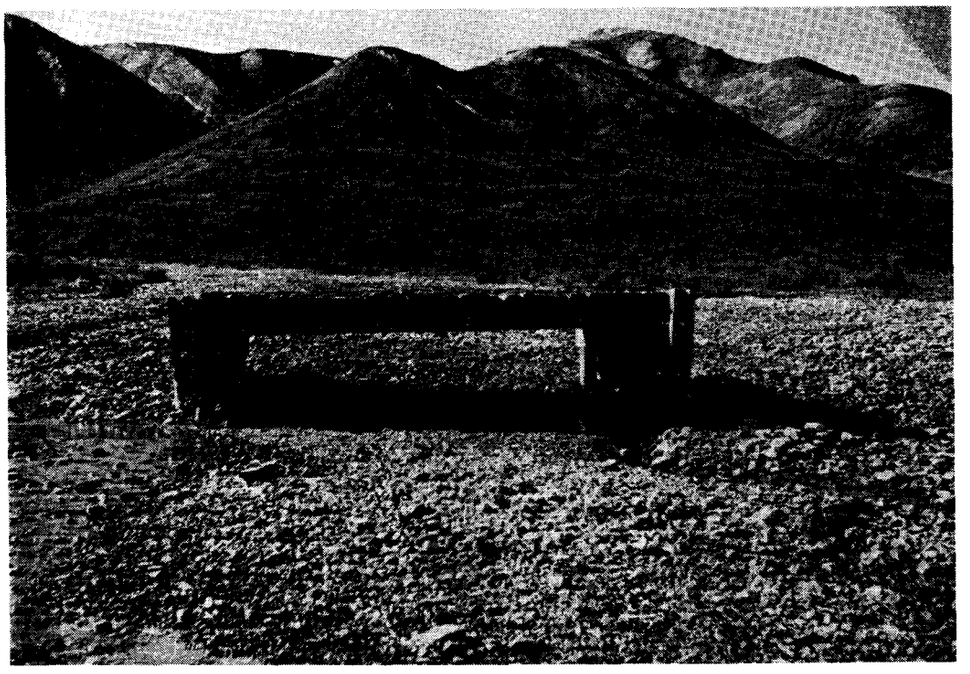
* **to encourage** wilderness recreational activities such as hiking, camping, photography and nature study along the **CANOL** Heritage Trail;

* to retain a wilderness recreational experience for users of the **Canol** Heritage Trail; and

* to monitor visitor use and impact of the **CANOL** Heritage **Trail.**

2. **Communication Objectives**

In spite of the scale and significance of the CANOL Project, it has become an almost forgotten event in Canadian history. To alter such an uncelebrated status, an effort should be made to stimulate a greater appreciation of the project, its original purpose, its magnitude, its construction difficulties and triumphs, and its impacts. Recognition of the project's many aspects could also benefit current and future developments in northern environments.



Bridge abandoned by its stream

Similarly the natural landscapes through which the Canol Heritage Trail passes are areas that cover an extensive region of northern Canada but that is little known or appreciated by Canadians and foreigners alike. There is a special opportunity here to provide a better understanding of the character of these natural environments.

The use of the area by the Mountain Dene is also an important component of the story of the CANOL region. A greater appreciation of the heritage of these people and the impacts of modern northern development on their lives can be communicated.

In both direct contact situations along the Canol Heritage Trail and in off-site situations related to the trail, the following objectives reflect the intentions of the plan:

* **to encourage understanding and appreciation of the CANOL Project and the natural environment which was the backdrop to that event;**

* **to encourage understanding and appreciation of the history of the Mountain Dene;**

* **to link the story of the CANOL Project and an appreciation of the natural environment of the area to the broader context of northern oil development and settlement; and**

* **to contact a variety of people including residents of the area, business travelers, recreationists and vicarious users.**

3. **Resource Protection Objectives**

The cultural and natural resources that are present along the Canol Heritage Trail are considered important to the people of the Northwest Territories and the people of Canada as examples of our northern wilderness and our interactions with that environment. As a result, the plan reflects and seeks to achieve the following resource protection objectives:

* **to protect the resources of the Canol** Heritage **Trail** for the benefit of those wishing to experience and appreciate their value;

* **to protect unique natural areas and the resources that are characteristic of the varying landscapes through which the Canol Heritage Trail passes;**

* **to protect the cultural resources resulting from the CANOL Project; and**

* **to retain the present character of** the **Canol** Heritage **Trail.**

TEE NORMAN WELLS VISITOR CENTRE

Since the town of Norman Wells will be a major access and egress point for Canol Heritage Trail users, a visitor reception, information, interpretation and registration facility should be considered as an integral part of the trail development. Preliminary assessment has confirmed the desirability of a visitor centre located in the community. The following discussion provides greater detail concerning the purpose, location, and operation of the facility. The visitor centre described here is central to the potential community involvement in the development and operation of the Canol Heritage Trail.

1. Purpose and Objectives

The purpose of the visitor centre is threefold: 1) to interpret the CANOL story, its natural setting and its place in the history of oil and other developments in the north; 2) to serve as an information and orientation centre for visitors to Norman Wells and to the Canol Heritage Trail; and 3) to serve as a focal point for local historical interests including the history of the Mountain Dene in the region and the establishment and growth of Norman Wells.

To direct the development of an appropriate facility designed to serve this purpose, more detailed objectives have been identified relating to each of the major components. They are:

1) interpretation

* to provide the visitor with the opportunity to learn about: the CANOL Project; northern oil development in general; the natural environment backdrop to the CANOL story which remains as a most attractive wilderness area; the history of the Norman Wells region, including the settlement and activities of the Mountain Dene.

* to prepare the visitor for the first-hand interpretive experience of the Canol Heritage Trail.

* to reinforce the on-site experience and to introduce other follow-up opportunities to the visitor who has just experienced some portion of the trail.

2) information and orientation

* to provide a personal welcome to Norman Wells.

* to provide specific handouts, maps, brochures, booklets, etc. that will assist the visitor in enjoying his stay in the region.

* to make the visitor aware of the Canol Heritage Trail and its recreational opportunities.

* to encourage the visitor to explore the trail.

* t. sell reference and souvenir items.

3) local history

* to provide a focal point for the Norman Wells Historical Society activities and to develop a greater community awareness of the history of the region.

2. What Type of a Facility

With development of the Canol Heritage Trail, some sort of facility is required to serve the functions outlined above. These functions are crucial to the effective promotion, understanding, appreciation and therefore, appropriate use of the trail. It is also an especially important opportunity to give public recognition to 'the agency and corporate interests which made this modern day appreciation of the CANOL Project possible.

From assessing the situation in Norman Wells and relating the needs of the community to the recommended scale of development for the Canol Heritage Trail, a moderately sized visitor centre is the type of facility that appears most appropriate. A range of facility types from an outdoor shelter to a professionally staffed and designed museum was considered. It was evident, however, that although a building was needed, a formal museum was not suitable, given the experiential or 'hands on' nature of the suggested exhibits and the level of expertise and on-going funding that could be expected. Consequently, a visitor centre is proposed as most appropriate. Such a facility should be located in the community of Norman Wells. Key factors which indicate the appropriateness of this level of development are:

1. certain interpretation and information functions require indoor shelter/controlled access.

2. a focus or take-off point in Norman Wells could serve other needed functions such as trail registration, provision of safety trail condition information, and contact for transportation across the Mackenzie River. It could also promote other tourist activities in the region such as river tours and fishing opportunities.

3. the opportunity to meet other community needs through the development of a facility especially as a focus for community history.

4. the availability of the Northern Heritage Centre and its staff to offer some planning expertise, capital funding, assistance for

operation and maintenance expenses and some assistance in exhibit and program design.

5. the existence of the Norman Wells Historical Society as a community catalyst and focus for the program.

6. recognition of the centrality of Norman Wells to the story of the CANOL.

7. relatively few people will be using the trail itself compared to the numbers of people that could appreciate the story presented in the community.

8. visitation cannot be expected to be high and therefore it is difficult to justify a large capital expenditure.

Members of the initial line survey crew and their pack dogs

3. The Message

From discussions with community residents, it is evident that the story they wish to tell is the story of "oil" – part of which is the CANOL. Thus the visitor centre would focus on local history, including the settlement and activities of the Mountain Dene, the oil industry and the CANOL. This perspective seems logical as it will place the CANOL into context with the Norman Wells area - rather than presenting the CANOL as an isolated element of northern history. The CANOL story itself, must present the feeling of the times and the scope/scale of the project not just the facts and figures.

The themes of settlement, oil, CANOL and the natural environment of the region should be easily interpreted to the visitor. The CANOL story itself, as enormous an undertaking as it was, requires context and

perspective. It was an event that was just one episode in the evolution of Norman Wells. Unlike other communities in the north, Norman Wells owes its existence solely to the presence of oil. Other associated activities such as the idea of tours of drill sites and islands should not be lost. If industry supported this idea, it could be an attraction in itself.

4. The Audience

Four potential audience groups have been identified: the local population, the business traveller, the recreational visitor, and the vicarious user. Each group varies in present and potential numbers and in the needs which could be met by a visitor centre related to the Canol Heritage Trail.

1. the local population: the local population would be a significant component of the users of the visitor centre facilities as well as of the trail itself. A visitor centre would allow residents to drop in and obtain information on the CANOL and on community history to the level they desire. Initial interest could be high but extended interest could also be prominent due to the involvement of the Norman Wells Historical Society and their activites to foster greater appreciation of the local history.

2. the business traveller: business travelers are potentially a relatively large market. Business travel accounts for the largest proportion of people arriving in Norman Wells and this situation is unlikely to change in the near future. Initially, business travelers could be a major market and a program could be designed to reach this group specifically. Activities of relatively short duration could be very popular. Drop-in visits to the centre would be most common but a major opportunity exists to encourage day outings to Canol Camp and possibly to extend their stay in Norman Wells by one night.

3. the recreational visitor: initially, the smallest audience would be the recreational visitor who arrives with the intention of spending time in the Norman Wells area or of traveling to parts of the Canol Heritage Trail. At the moment, the visiting recreationalists to the area are predominantly people who are outfitted for trophy hunting, fishing, river trips and hiking. Each of these groups may find the visitor centre valuable for a perspective on the Norman Wells area - especially if the settlement theme is dominant rather than just the CANOL. It also may provide the stimulus for these typically more prepared visitors, to experience some of the trail. A significant increase in the proportion of visitors to the centre could be expected from those who have come with the Canol Heritage Trail as a specific destination. This could be accomplished by developing appropriate recreational facilities along the trail and preparing and implementing a promotional program designed to contact the specific outdoor users.

4. the vicarious user: there are many historical buffs, people who know the CANOL, or people who worked on the project, who provide a large and interested audience. They may be very appreciative of efforts to develop a Canol Heritage Trail but will never get there. Perhaps an interpretation and/or revenue-generating scheme could also be developed for this audience. A publication with a detailed historical account of the project could be one such initiative which might prove to be a valuable asset to the centre and to the trail as a whole. Other publications of interest might be the trail guide or an historical or present day photo album. Book sales could be a direct financial benefit but perhaps more importantly, the contacting of a committed and interested-group of individuals, although they themselves may not come to the trail, will often result in their encouraging others to come.

For all visitors to Norman Wells, the initial approach should be to first deal with the emotions/excitement of the scale/scope/time of the project, then to consider CANOL in the context of the community, and finally to provide a detailed storyline. This approach should lead to their visiting the trail. The river as a barrier to general access can be overcome with local initiatives to provide river taxis or to provide air access to the more interior locations. This access provision will be an important way of encouraging use by all user groups. Even local residents will benefit from such access, depending upon factors such as cost and frequency. The river trips could easily become a major attraction in themselves, with interpretation on river history, natural features and present use.

5. The CANOL Building

A CANOL building is presently situated on the Norman Wells Historical Society property in Norman Wells (see Fig. 8). The structure is an empty shell approximately 24.5m x 9.5m. The property is large enough to "exhibit" CANOL equipment and vehicles, and is strategically situated within the community:

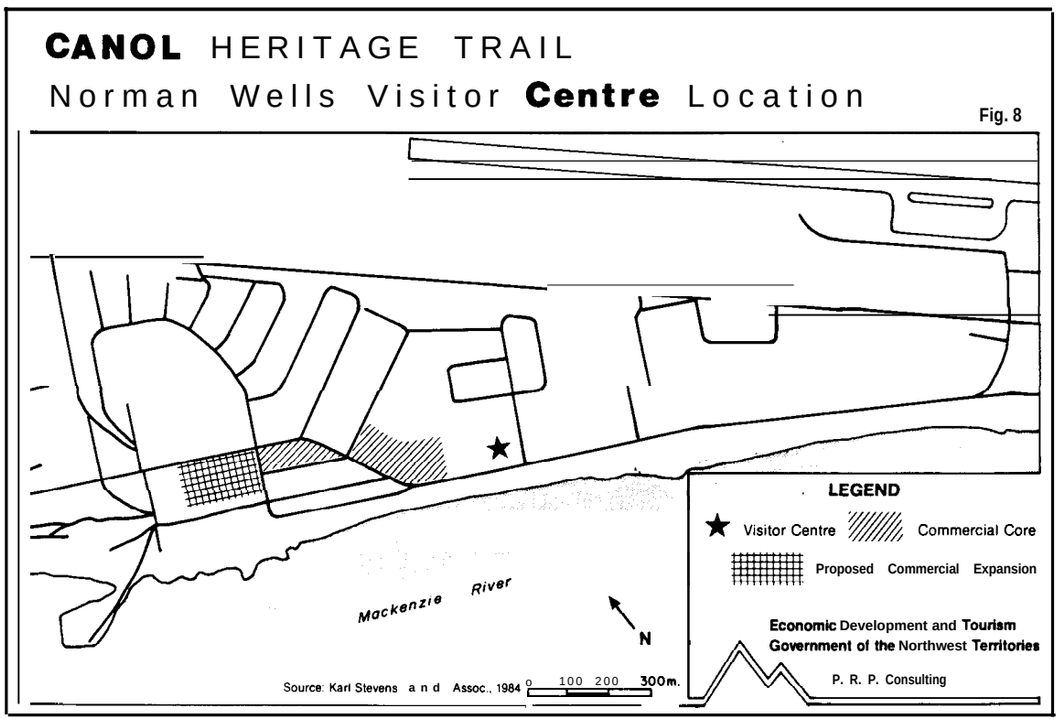
1. it is on the main road (Mackenzie Drive) between the airport and the centre of town;

2. it is in close proximity to the river (just across the road) with views from the building. The river plays a key role in the CANOL story and is also an important link to the present day experience on the Canol Heritage Trail;

3. it has potential links from the property to other recreational developments along the river identified in the community plan such as trails, picnic facilities, etc.;

4. the surrounding properties are designated for institutional use including library, educational facilities and R.C.M.P. facilties which are not only compatible but complementary;

5. immediately west of the institutional area is land proposed for expansion of commercial activities which would be a convenient location for supporting visitor services.



The romantic element of fixing up an old building - especially one reflecting the CANOL era - is definitely contagious and such an undertaking would certainly be a significant contribution to the communication of the CANOL message. This is the recommended approach. However, upgrading the building to public standards would be an expensive proposition. The limited use and short season are also considerations that need to be balanced against the capital development cost. To offset costs, the building could be developed and used as part of a revenue generating program for assisting the Historial Society in becoming self-supporting. If used in this manner (for example having a meeting room as part of the facility that could be rented to local businesses or used for public programs) the expenditure would be more easily justified.

The alternative to such a development, in the event that the recommended approach is not considered feasible, would be a totally new structure that would be developed on the same site. A carefully designed structure could be developed specific to the needs identified earlier and may prove to be less expensive while maintaining the functions, low maintenance costs, and low susceptibility to vandalism, that are requirements of the facility. If this alternative were pursued, an historical character to the structure would be preferable to a modern one.

Design details of the facility will depend on available funds for development and operation. Some preliminary observations regarding the building interior are: needed services include, washrooms, information desk, brochure and booklet display, sales area, and administrative space; exhibits or displays should focus on the use of artifacts; and a video screening area seems appropriate, especially with an attractive slide show of the features along the present day trail and an edited version of Richard Finnie's film of the original construction project. The property should be used to display some of the larger equipment, with opportunities for hands-on experience.

6. **The Operation**

It is proposed that the operation of the visitor centre be carried out with the coordination of the Norman Wells Historical Society. In achieving the objectives set out for the centre it would be important to have attractive, hands-on displays that would encourage visitors to take a real interest in the stories being told at the centre. A variety of artifacts and clear, informative text for displays would be essential in creating the kind of environment that would hold people's attention and encourage them not only to visit the trail but also to return to the centre.

Basic information on the area including access to the Canol Heritage Trail and other points of interest, weather conditions, facilities and services available free of charge or through local commercial operators, would be an important function. Recreational opportunities such as outfitting, river trips and other tourist services could be promoted. Local business people should be encouraged to make the necessary information available so that visitors can be encouraged to stay in the region and take part in the available activities. Other materials should also be available for sale such as publications, appropriate souvenirs, photographs, crafts and artwork which relate to the history and natural environment of the region.

The building should also function as a registration centre for trail users where visitors can identify their proposed route and time spent on the trail. Assistance in planning their activities should also be available as well as access services to the west bank of the Mackenzie River. Specific trail related programs would also be operated from the centre, such as the tours to Canol Camp and tours of the present day oil operations.

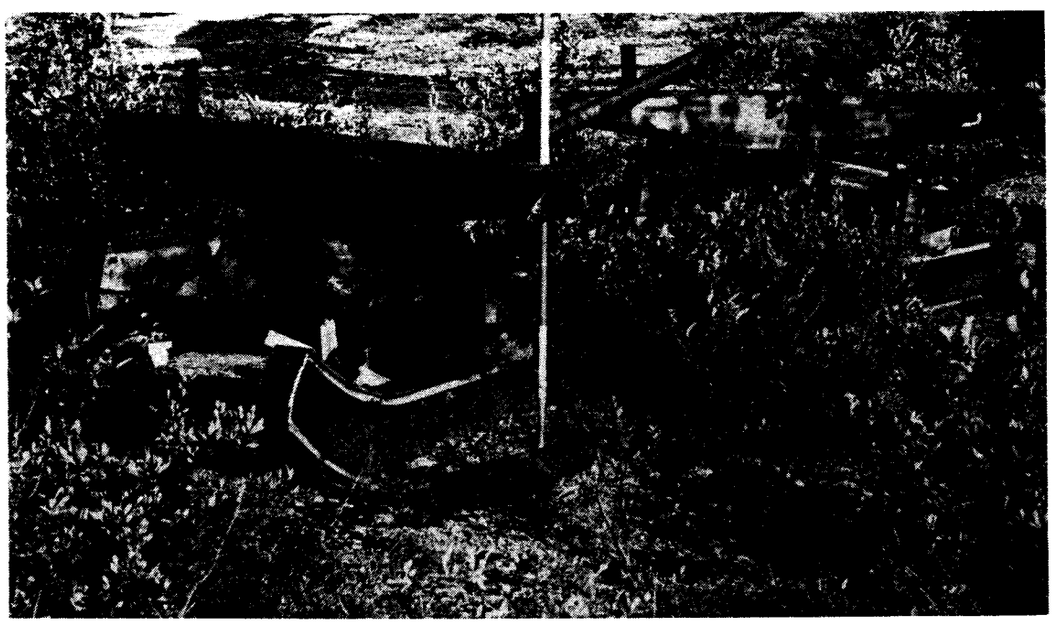
To effectively fulfill these functions, the visitor centre requires knowledgeable and pleasant staff and reasonably long hours of operation during the major visitor season, so that the best possible service to the visitor can be provided. It will also require the interest and cooperation of the local business community in providing information, access services and interesting and effective tours on a regular basis.

7. The Artifacts : The Collection

With the recommendation for a visitor centre facility rather than a museum, a formal collection of settlement and CANOL site artifacts is not envisioned. Some of the larger equipment can be located on the property and the exhibits or displays should incorporate artifacts as much as possible. However, as many of the artifacts as possible should stay "in situ" on the CANOL route.

A concept that is gaining popularity is "the community collection" concept (reference the Alberni Valley Museum, Port Alberni). As Norman Wells residents, and many other Northwest Territory residents, have collected artifacts and are keeping them in their homes, an inventory and registration of these items is suggested. Owners would be allowed to retain the item, but having a record of the community collection on file, makes possible a perspective on gaps of knowledge/material. This community collection should include everything associated with the CANOL (photos, books , equipment etc.).

Such a system would allow the visitor centre to create special short term displays using items borrowed for a specified time from the community, or to provide opportunities for interested visitors to view items in the homes of local residents. Holders of items would be encouraged to donate artifacts to the centre when and if they choose. The community may also want to use this approach for their settlement history - at least until a museum type facility with professional standards is available.



Wanigan carrying sled used in winter tractor trains

PLAN COMPONENTS

1. Activity Areas

A few major activity areas have been identified along the trail that are considered to be of exceptional value, where appropriate activities will be encouraged. These areas are Canol Camp, the proposed Dodo Canyon Territorial Park, the Plains of Abraham, the Godlin Lakes area, and the Mackenzie Mountain Barrens (see Fig. 9). In each case, these areas contain high quality natural resource and scenic values that provide exceptional wilderness recreational opportunities as well as important historical resources suitable for interpretation. The exception is the Canol Camp area which by virtue of its significance from a historical perspective and its proximity to Norman Wells, is a vitally important activity area of the trail. The detailed characteristics of the ecosections themselves have been described previously.

It is within these areas that the majority of facilities and services are proposed. All are linked by the Canol Heritage Trail and additional facilities may also be desirable along the intervening sections of the trail.

2. Activities

The full range of existing recreational activities including hunting, fishing, hiking, camping, nature study, snowmobiling and motorbiking will continue to take place.

Motorized activities: these are enjoyable means of traveling the trail and viewing some of the most spectacular portions of the route through the Mackenzie Mountains. Encouraging activities such as motorcycling and snowmobiling, recognizes the needs of a wider spectrum of users and supports the participation of visitors in other related activities such as hunting and fishing. Basic facilities to support such activities will be provided at appropriate locations. Motorized activities allow local residents in particular, to enjoy more frequent use of the trail and less time consuming trips. Due to the sensitivity of wildlife to the noise of motorized vehicles and the numbers of people associated with their use, as well as the potential impact of machines in fragile alpine environments, users will be encouraged to remain on the trail.

Non-motorized activities: activities such as hiking, camping and nature study allow a very intimate experience with the environment and are central to a wilderness experience. They will be encouraged on the Canol Heritage Trail. Side trips to areas having particular interest from an historical or recreational perspective will also be encouraged. Basic facilities to support such activities will be provided at appropriate locations. To encourage broader use of the trail by hikers, air access to designated areas will allow portions of the trail to be used between drop off and pick up landing sites.

Due to increasing use levels it is proposed that motorized activities be encouraged in distinct areas so as not to interfere with the experience of other users. It is most important when promoting the use of the trail that the expectations of the visitors be realistic and then fulfilled by the experience. By promoting motorized use of the trail in certain sections and not in others, for example, expectations will be more clearly defined. Both ends of the Canol Heritage Trail are designated for motorized recreational activity.

Carcajou River in winter: a highway of ice

3. Access

Motorized access means will be possible for some distance from each end of the trail (see Fig. 9). In addition, air access to key sites along the road where landing sites are located will be encouraged as drop-off and pick-up points for trail users. This will allow use of individual segments of the trail that are particularly attractive for certain activities. Locations of such landing sites, either on ground strips or accessible lakes for float plane access, are at Canol Camp, R.M.P. 36, R.M.P. 72, Godlin Lakes (R.M.P. 168), R.M.P. 216, and R.M.P. 222 (see Fig. 9). Other sites may be identified in the future as use patterns along the trail are evaluated.

Access across the Mackenzie River to the west bank and vehicle transport to Canol Camp will also be provided in conjunction with the visitor centre operation in Norman Wells. The visitor centre will serve as the contact point and the boat shuttle service will be provided by a local business.

Use of the trail on horseback, mountain bike and on foot will be encouraged. The route will be improved in sections and assistance for river crossings will be provided over the Carcajou River, the Little Keele River and the Twitya River. In places where the trail is difficult to follow, some signage will be provided. At certain locations along the trail, side trip trails will be developed to encourage backcountry use of adjacent areas of interest. In particular, the Dodo Canyon Territorial Park area, the Mount Eduni area, the Caribou Pass area, and the Godlin Lakes area will be of interest for such activity (see Fig. 9).

4. Visitor Facilities and Services

Facility development will be undertaken to provide the basic level of visitor support that will encourage acceptable activities in each segment of the Canol Heritage Trail. In most areas, such facilities will be limited to: trail improvements, including the river crossings noted above; primitive campsites, privies and firewood supplies, where appropriate; improvement of existing shelters or construction of shelters; and improvements to aircraft landing strips. Trail head self-registration facilities will also be provided at both ends of the trail and at aircraft landing points.

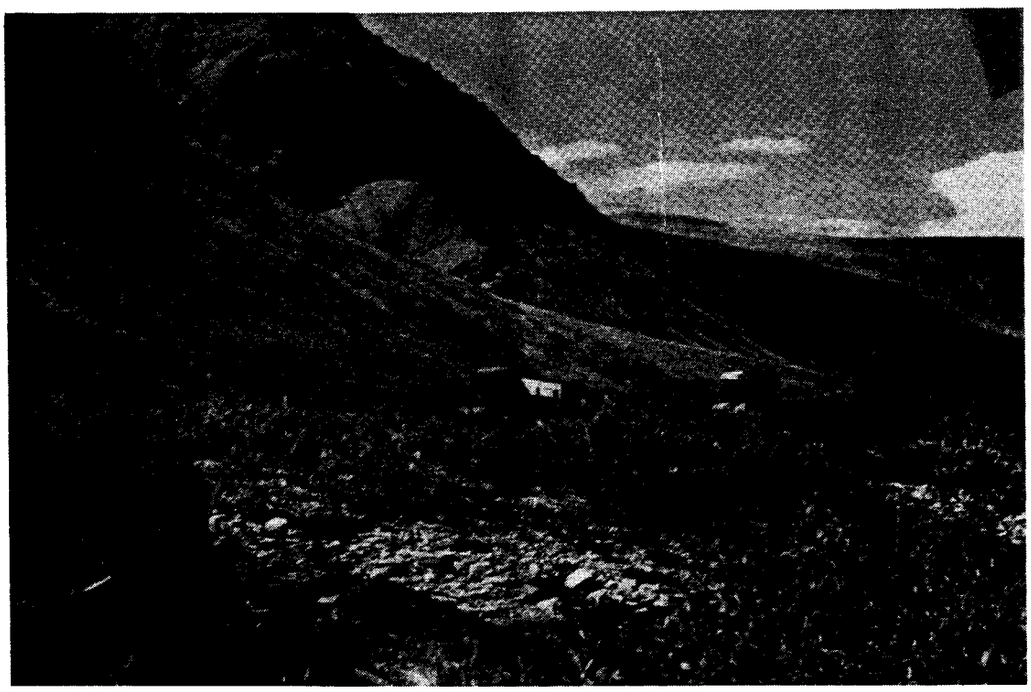
Future use of the trail may suggest a more extensive network of facilities. It is recognized in developing this plan that although the additional facilities may be similar to those described here, their construction and extent would be sufficient to accommodate relatively easy access to all areas of the trail, along with greater visitor safety.

Existing access and guiding services provided by the private sector will be encouraged to expand to include water taxi service across the Mackenzie River and vehicle transport to Canol Camp. The only initial service provided along the trail route will be the provision of firewood supplies at locations where a readily available supply of firewood is not present. Firewood is a significant concern along the trail because where supplies are limited or where careless users have simply neglected available supplies, historical structures are being dismantled and burned. The plan recognizes that firewood is important and there is provision for fires at most campsites and stoves in overnight shelters. However, at certain sites no provisions have been made and every effort will be made to encourage use of campstoves all along the trail and to minimize the use of firewood. Where appropriate, liquid fuel will be provided on site so as to reduce the pressure on firewood supplies and to minimize the cost of supplying fuel.

The extent of facility development proposed is described in detail below according to the ecosection divisions along the trail. The proposed developments are illustrated in Fig. 9.

Where shelter construction is identified, it is assumed that existing structures will be utilized if possible. Where they are of insufficient

soundness or are non existent, new structures will be constructed. The dimensions identified are the approximate minimums and existing structures may be significantly larger than the size indicated. Signs will not be intrusive in size but will display a standard logo. A minimum of signs will be used and attention will be paid to the most effective location. Signs will be constructed and installed so as to withstand harsh climatic conditions.



Pump Station No. 4, near hsad of Bolstead Creek

The Mackenzie Plain Ecosection

Primary activity: heritage appreciation at Canol Camp

* road improvements primarily from the river bank to Canol Camp but also extending through the ecosection to the Carcajou River.

* encourage the provision of a water taxi service across the Mackenzie River to assist visitors in gaining access to Camp Canol and the trail.

* maintenance of the air strip at Canol Camp.

* construction of a trailhead information and self registration station at Canol Camp. This facility will be part of a more extensive interpretive station which-will be housed at this trailhead (see description under Interpretation).

* construction of an overnight shelter adjacent to Canol Camp. The shelter should have sleeping accommodation for 10 people, a stove, fuel and first aid supplies. Approximate dimensions: 5m x 6m.

* construction of campsites adjacent to Canol Camp. Six sites will be prepared. A firegrate will be the extent of individual site facilities and a central outhouse will be constructed.

* construction of a designated campsite on each side of the Carcajou River.

* construction of river crossing aid. Some form of cable and/or raft system for assistance in the crossing of the Carcajou River will be investigated and constructed.

The Carcajou Range Ecosection

Primary activity: appreciation of scenic canyons and participation in side trips into the surrounding areas.

* construction of campsites adjacent to Pump Station No. 2 (R.M.P.36.5), at Canol Lake and on either side of the Little Keele River (R.M.P.50). Three sites will be prepared at each location. A firegrate will be the extent of individual site facilities and central outhouses will be constructed.

* construction of an overnight shelter adjacent to pump Station No* 2 (R.M.P.36.5) and at R.M.P. 50. The shelter will have sleeping accommodation for 6 people, a stove, fuel and first aid supplies. Approximate dimensions: 4m x 5m.

* construction of a trail head information and self registration station on the shore of Canol Lake where floatplane access to the trail is possible.

* basic trail location, improvements and signage will be undertaken for side trips from the main Canol Heritage Trail into surrounding areas. Carcajou Canyon would be a priority area for such trail access.

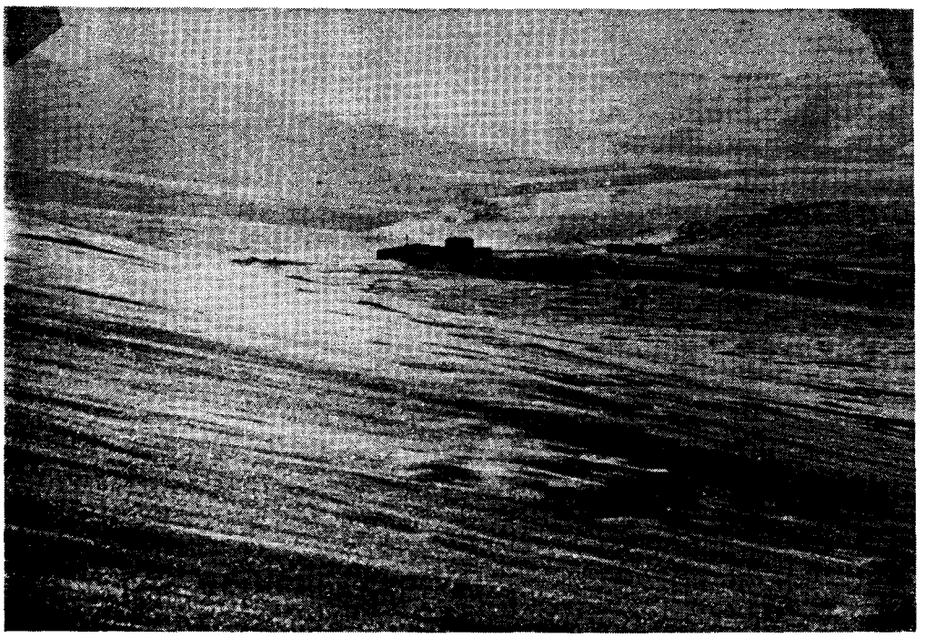
* directional signage will be provided in key areas along the trail where the route is indistinct and where alternate routes exist (eg. at the far end of the ecosection just before the trail re-enters the Little Keele River Valley).

The Blue Mountain Ecosection

Primary activity: appreciation of scenery, natural landscape characteristics and wildlife.

* directional signage will be provided in key areas along the trail where the route is indistinct and where alternate routes exist such as locating access to both the original route and the winter road from the Little Keele River valley.

* basic trail improvements will be undertaken where necessary.



Road Camp 80 on the Plains of

The Plains of Abraham Ecosection

Primary activity: heritage appreciation at Pump Station No. 3, the road maintenance camp at R.M.P. 80 and the rights-of-way on the plateau. Also natural resource appreciation (landforms, vegetation and wildlife).

* construction of campsites adjacent to Pump Station No. 3 (R.M.P. 74. 5) . Three sites will be prepared. A firegrate will be the extent of individual site facilities and a central outhouse will be constructed.

* construction of overnight shelters: 1) adjacent to pump Station No. 3 (R.M.P.74.5). The shelter will have sleeping accommodation for 6 people, a stove, fuel and first aid supplies. Approximate dimensions: 4m x 5m; 2) adjacent to the road maintenance camp at

R.M.P. 80. The shelter will have sleeping accommodation for 6 people and an emergency radio. Approximate dimensions: 3m x 4m. An outhouse will also be constructed.

* construction of trail head information and self registration station on the shore of Carcajou Lake where floatplane access to the trail is possible and at a landing site at R.M.P. 72.

The Mount Eduni Ecosection

Primary activity: heritage appreciation of Pump Station No. 4. Also natural resource appreciation and a side trip to Mount Eduni area.

* construction of campsites adjacent to Pump Station No. 4 (R.M.P. 108). Three sites will be prepared. A firegrate will be the extent of individual site facilities and a central outhouse will be constructed.

* construction of an overnight shelter adjacent to Pump Station No. 4 (R.M.P.108). The shelter will have bleeping' accommodation for 6 people, a stove, fuel, an emergency radio and first aid supplies. Approximate dimensions: 4m x 5m.

* basic trail location, improvements and signage will be undertaken for side trips from the main Canol Heritage Trail into the areas around Mount Eduni.

Steep-sided, alpine valley drained by Bolstead Creak

The Twitya River Ecosection

Primary activity: wilderness hiking and camping

* construction of overnight shelters, one on each side of the Twitya River. Each shelter will have sleeping accommodation for 6 people, a stove, fuel, emergency radio and first aid supplies. Approximate dimensions: 4m x 5m.

* construction of campsites near the shelters proposed for each bank of the Twitya River. Two sites will be prepared in each location. A firegrate will be the extent of individual site facilities and a central outhouse will be constructed.

* directional signage will be provided in key areas along the trail where the route is indistinct.

* construction of river crossing aid. Some form of cable and/or raft system to assist in crossing the Twitya River will be investigated and constructed.

* basic trail location, improvements and signage will be undertaken for side trips from the main Canol Heritage Trail into the surrounding areas. The hot springs near the Twitya River would be a Priority for such improvements.

The Godlin River - Ekwi River Ecosection

primary activity: general recreational activity (fishing, hunting, scenery appreciation). Also heritage appreciation, especially Pump Station No. 5.

* construction of an overnight shelter at R.M.P. 170 (adjacent to Pump Station No. 5). The shelter will have sleeping accommodation for 6 people, a stove, fuel, an emergency radio and first aid supplies. Approximate dimensions: 4m x 5m. Other sites along the trail in this ecosection will be assessed for similar facilities.

* construction of campsites along the main trail at various points. Individual sites will be identified where shelter, water and potential recreational opportunities are available. Three sites will be developed at Godlin Lakes as this is a major access and egress point.

* directional signage will be provided in key areas along the trail where the route is indistinct.

* basic trail location, improvements and signage will be undertaken for side trips from the main Canol Heritage Trail into the surrounding areas. Routes from the lower Ekwi River to the Godlin River valley would be a priority for such improvements.

* construction of trail head information and self registration station on the shore of Godlin Lake where floatplane access to the trail is possible and also at the airstrip at R.M.P. 167.

* maintenance of the air strip at R.M.P. 167.

The Caribou Pass - Intga River Ecosection

Primary activity: heritage and natural history appreciation, including side trips.

* construction of an overnight shelter adjacent to pump Station No. 6 (R.M.P.208). The shelter will have sleeping accommodation for 10 people, a stove and fuel and first aid supplies. Approximate dimensions: 5m x 6m. An outhouse will also be constructed. Other sites along the trail in this ecosection will be assessed for similar facilities.

* construction of campsites along the main trail at various points. Individual sites will be identified where shelter, water and potential recreational opportunities are available.

* basic trail location, improvements and signage will be undertaken for side trips from the main Canol Heritage Trail into the surrounding areas. Routes in the Caribou Pass area would be a priority for such improvements.

The Mackenzie Mountain Barrens **Ecosection**

Primary activity: wildlife observation and heritage appreciation.

* basic trail location, improvements and signage will be undertaken for a side trip from the main Canol Heritage Trail to Fish Lake along a historical tractor train route dating from the 1942-43 winter survey.

* construction of overnight shelters at R.M.P. 216 and at Fish Lake. The shelter will have sleeping accommodation for 6 people, a stove and fuel, and first aid supplies. Approximate dimensions: 4m x 5m. An outhouse will also be constructed at each site.

* construction of trailhead information and self registration station on the shore of Harlequin Lake where floatplane access to the trail is possible near R.M.P. 216.

Canol Road c1 **imbing** to its **highest** point near **R.M.P.** 213

The Tsichu River - Macmillan Pass Ecosection

Primary activity: heritage appreciation at Camp 222 and natural history appreciation of the area.

* construction of trailhead information and self registration station at R.M.P. 222. This facility will be a part of a more extensive interpretive station which will be housed at this trail head (see description under Interpretation).

* basic trail locations, improvements and signage will be undertaken for sidetrips from the main Canol Heritage Trail. The Keele Peak area would be a priority for such improvements.

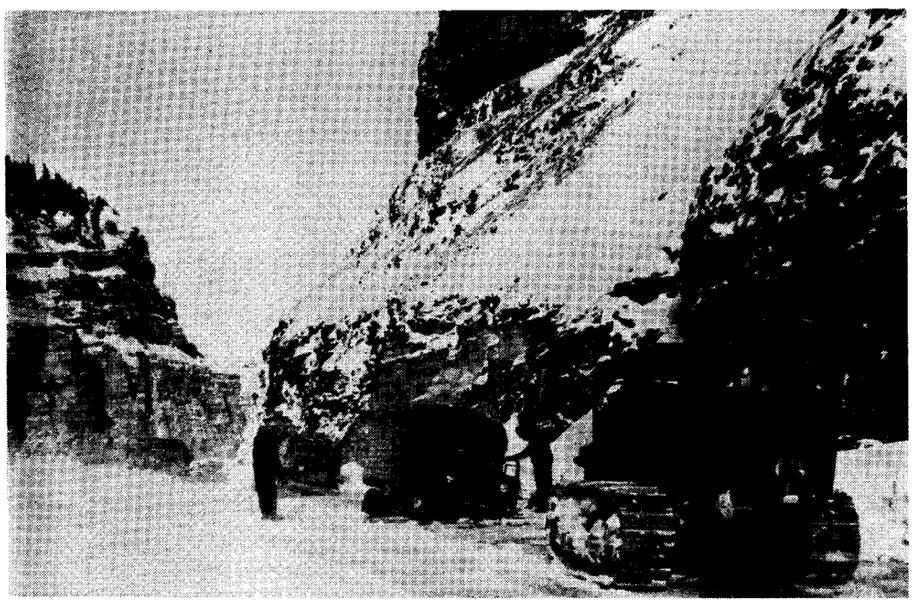
* maintenance of the air strip at R.M.P. 222.

* construction of an overnight shelter adjacent to Camp 222. The shelter should have sleeping accommodation for 10 people, a stove, fuel, and first aid supplies. Approximate dimensions: 5m x 6m.

* construction of campsites adjacent to Camp 222. Four sites will be prepared and a central outhouse facility will be constructed.

4. Interpretation

The major interpretive effort will be the visitor centre in Norman Wells. This facility has been discussed separately in this report. The private sector will be encouraged to provide a one day, on-site interpretive tour to Canol Camp from the centre. Water and ground transportation, improvements to the access route to the camp, and clean-up of the camp site will be required as well as an interpretive facility on site. The facility at Canol Camp will consist of a small reconstructed CANOL building housing basic displays and trail information.



Convoy in Dodo Canyon

It is recognized that a major component of the CANOL Project lies in the Yukon, and that a very significant portion of the visitors to the Canol Heritage Trail will travel to the area through the Yukon and Macmillan Pass. Thus, it will be important to establish cooperative efforts with the Yukon government to attract and serve visitors gaining access to the trail from outside the Northwest Territories. Opportunities to contact the public exist at significant locations along the Yukon portion of the CANOL route such as Johnson Crossing, Ross River and Whitehorse, as well as at the Alaska Highway Visitor Centre in Watson Lake. To further assist in effectively communicating with these visitors, the trail head facility at the Macmillan Pass end of the trail will be a facility similar to that developed at Canol Camp and will be used to interpret the CANOL story and the natural history of the area. The facility, with displays and information, may be self-guided, or potentially staffed.

In addition, a trail guide will be produced to assist visitors in their appreciation of the natural and cultural resources along the trail. It will set the context of the CANOL Project and decribe the environmental characteristics of the route. To supplement the trail guide, interpretive signs and displays will be placed at significant historic sites along the route and in conjunction with trailhead registration facilities. Interpretation of the natural environment of the area will be included in such displays. In addition, identification plaques may be placed on significant artifacts or buildings to assist the visitor in recognizing resources discussed in the trail guide or interpretive displays.

The locations of interpretive facility developments proposed between the major trailheads at Canol Camp and Camp 222, are listed below and illustrated in Fig. 9. At each site the emphasis would be on the cultural resources of the site relevant to the CANOL story. Natural resource values and features of interest will also be interpreted by means of these displays but in-depth interpretation of such subject matter will rely more heavily on the trail guide.

Interpretive Displays

1. R.M.P. 36.5 (Pump Station No. 2)
2. R.M.P. 74.5 (Pump Station No. 3)
3. R.M.P. 80 (road maintenance camp)
4. R.M.P. 108 (Pump Station No. 4)
5. R.M.P. 170 (Pump Station No. 5)
6. R.M.P. 208 (Pump Station No. 6)

Remnants of bulldozer cleats on the Plains of Abraham

Trophy hunters congregate at Camp 222

5. Resource Management

The existing resource management responsibilities for the area will continue to be in effect throughout much of the Canol Heritage Trail. Historic and present nodes of activity may be designated as park land so that land use management could be more specifically controlled (see Fig. 9). Such a land designation will give greater recognition to the historical and recreational value of the Canol Heritage Trail and will simplify regulatory decision making. In the future, broader designation of park land such as is presently proposed in the Dodo Canyon Territorial Park would be appropriate in certain areas along the trail such as the Plains of Abraham and the Mackenzie Mountain Barrens.

Improved attitudes toward resource protection will be encouraged. The trail guide and other information that may be made available will stress conservation ethics and the importance of maintaining the integrity of both the natural and cultural resources of the area. Concern for garbage removal, destruction of historical buildings, vandalism or removal of artifacts, disruption of wildlife, etc. will be expressed and responsible use of the trail will be requested.

Some active measures will also be undertaken. Cleaning the CANOL sites along the route will not only provide an opportunity to assess the extent and condition of the historical resources but will also demonstrate a greater interest on the part of the managing agencies. This operation will hopefully result in more respect for the sites by users of the trail. The intention would not be to remove all the materials but rather to maintain the sites by weatherproofing appropriate buildings and storing artifacts inside. Salvaging of useable materials to assist in the stabilization of buildings and removal of unusable materials is desirable. These efforts will make a significant contribution to the visitors' appreciation of the CANOL story. Clean up along the trail will also include the removal of the remaining telephone wire which has proven to be a hazard to wildlife and is a potential hazard to visitors and motorized vehicles.

Another major focus of resource management concern is wildlife. The existing outfitting activity is based on a high quality wilderness hunt in an area of good trophy animals. Local hunters also appreciate the availability of game. At the same time, one of the main attractions for visitors to the area is the opportunity to view wildlife. Prime habitat areas are not only important areas for protection but also tend to be focal points for users of the resource (see Fig. 4). Increasing visitor use will only accentuate this pressure on the wildlife resources. The plan for the Canol Heritage Trail recognizes the validity of all of these uses but emphasizes the protection of the wildlife populations by encouraging only passive use of the resource along the immediate corridor (within one mile) of the trail.

IMPLEMENTATION OF THE PLAN

This discussion of implementing the accepted plan must necessarily be general. Broad cost estimates are provided since the details of facility development or site assessments of needed trail improvements have not been identified. The following estimates in 1985 dollars should give some guidance to the decision to proceed with the concept and the subsequent efforts to solicit funding support for the project. Further field investigation will help to substantiate or revise these estimates. The studies needed to more accurately identify and direct the nature and extent of trail and facility development are also identified along with a rough estimate of their cost.

RESEARCH AND PLANNING PROJECTS

PROJECT	PURPOSE	COST ($000's)
* data assembly and organization for guide book.	to assemble and classify pertinent natural, cultural and logistic information to be included in the trail guide.	15.
* interpretive plan	to develop a comprehensive interpretive strategy for the trail and prepare text for on-site interpretive panels and trailhead displays.	20.
* site plans for activity areas and side trails	to assess facility location and design and prepare site plans to direct site development; to map recommended side trails and identify their linkages to the main trail.	20.
* visitor centre planning and design	to prepare a building design for the visitor centre in Norman Wells.	20.
* heritage resource inventory and assessment	to document the status and significance of archaeological and historical resources along the trail and in the surrounding region.	35.
* marketing strategy	to identify potential markets and means of reaching those markets with appropriate information regarding the recreational opportunities of the Canol Heritage Trail.	25.
	TOTAL	135.

CAPITAL COST ESTIMATES FOR FACILITY DEVELOPMENT

FACILITY	
Norman Wells Visitor Centre	225.
Canol Heritage Trail guide book	40.
Interpretive facility at Canol Camp	20.
Interpretive facility at R.M.P.222	20.
Trail registration facilities	10.
Historic site interpretive displays	30.
Trail and camp clean up	90.
Shelters and shelter improvements	130.
Campsite preparation	55.
Trail improvements/river crossings	50.
New trail development	20.
Signage	15.
TOTAL	705.

ANNUAL OPERATIONAL COSTS OF DEVELOPKENT OPTIONS

SERVICE (Government services only)	COST($000's)
Fuel supply	15.
Clean up and garbage collection	10.
On-site supervision	- (20.)*
Facility maintenance	15.
Administration	5.
TOTAL	45. (65.)

* An option not considered to be initially required but possibly desirable in the future is the hiring of seasonal staff to provide on-site supervision to the facilities and a public contact along the trail.

PHASING

The above noted costs reflect implementation of the complete plan. Such implementation will naturally be phased in over a period of years as money is available and demand warrants facility development and maintenance. An approach for the phased planning and development of the facilities outlined above is important in the event of limited initial funds and the importance of serving the greatest number of visitors. The phasing plan outlined below is an attempt to respond to these concerns by illustrating the priority of projects and the logical sequence of events in the development of the Canol Heritage Trail.

Phase 1:

*** heritage resource assessment -** such an inventory and assessment should be the responsibility of the Northern Heritage Centre. Their staff have the expertise to either conduct or direct the necessary studies. The assessment and protection of resources should not be limited to the Canol Project but should also include native history and settlement of the area.

***guide book data** assembly - although much information is available there appears to be some gaps in the data, particularly in the area of natural resources. Also, an approach would need to be developed for presenting the data in a guide book. The relationship of this approach to the data base is crucial. Some further assessment and field research is therefore considered desirable.

*** interpretive plan -** a strategy for interpretation of the Canol Heritage Trail is very important. It is within the context of this strategy that the on-site displays and the programs at the visitor centre and Canol Camp would be developed. The interpretive exhibits could be prepared in conjunction with this plan.

*** site plans -** a more detailed plan for facility development and route identification is needed to direct the implementation of the concept plan now prepared. Specific locations of required shelters, campsites, sanitary facilities, trail routes, signage and information, river crossings and interpretive facilities need to be identified. Also, specifications for these needed facilities must be identified to facilitate more accurate budgeting and eventual construction.

*** visitor centre** design - the initial evaluation of the visitor centre in Norman Wells conducted for this plan, needs considerable refinement in order to clearly define the purpose and objectives of the facility. This framework must then be translated into a design for the building which will most efficiently achieve the identified objectives. Careful planning and design will significantly contribute to the long term success of the facility.

Phase 2:

*** camp and trail clean up** - after forty years of neglect and casual use, the trail area will need to be cleaned up. This clean-up will make the tasks of facility construction and interpretation easier, will demonstrate the value placed on the area by the G.N.W.T. and will give the visitor a better appreciation of the resources of the trail. It is important that prior to and in conjunction with such a clean up, the heritage resource assessment also be undertaken. It is not the intention of this task to eliminate historic resources but rather to make them

more presentable and discernible to the visitor and also to remove unnecessary and potentially unsafe materials.

* **guide book preparation and publication** - once the Preliminary assessment of the data base is complete publication of a guide book should be a high priority task. The book should be a high quality publication that can be carried along the trail and assist in the on-site interpretation of the trail and its surroundings.

* **visitor centre** construction - the visitor centre is an important element in the plan and should be developed as soon as possible following the planning and design work.

* **shelter construction** - priority in this phase will be given to shelter construction at high use areas on the trail, Canol Camp, R.M.P. 222 and R.M.P. 36.5.

* **campsite construction** - sites will be prepared at R.M.P. 36.5, 50, 74.5, 80, 208 and 222.

* **trail improvements** - priority in this phase will be given to necessary road improvements to Canol Camp from the west shore of the Mackenzie River and along the section of trail from Canol Camp to R.M.P. 36.5, with a river crossing at the Carcajou River.

* **interpretive displays** - the major on-site facilities at Canol Camp and R.M.P. 222 will be constructed. They will be sheltered displays addressing the broader story of the CANOL and the natural history of the area as well as specific site features. The resources of these areas have exceptional interpretive potential and the facilities should have the flexibility to be staffed on a part-time basis in the future. Other interpretive displays will not be as extensive and will focus more specifically on features or events at their particular locations.

* **marketing and promotion strategy** - a study should be conducted to identify the most appropriate user groups and markets for attracting visitors to the Canol Heritage Trail. An approach for reaching out to those markets should also be developed within the study.

Phase 3:

* **shelter construction** - in this phase the remaining shelters will be constructed. The order of priority is: 1) R.M.P. 50, 216 and 208; 2) R.M.P. 74.5 and 170; 3) R.M.P. 108 and 131; and 4) the remaining shelters.

* **trail improvements** - the remaining major trail improvements that are not considered normal maintenance will be undertaken in this phase. Areas where such improvements are needed will be identified in the site planning field studies.

* **interpretive displays** - the on-site displays along the trail route between the Canol Camp and R.M.P. 222 will be constructed and installed at sites identified in the site plans. The text and design will have been developed in the interpretive plan project.

* **trail head information and registration** - a standard design and text for trail head information and registration will be developed and modified to suit each location. These displays will be constructed and installed at sites of air access to the trail at specific locations identified in the site plans undertaken in Phase 1.

* **campsite preparation** - additional campsites will be prepared at various points along the trail. Specific sites will be identified in site planning field studies following the guidelines provided in this plan.

Phase 4:

* **campsite construction** - provision for additional campsites to those prepared in Phase 2 and 3 will allow completion of campsite facilites in this Phase.

* **trail signs** – a standard design that is simple and sturdy will be used in the preparation of signs. Installation will follow the locations identified in the site planning field studies.

* **air strip improvements** - any significant improvements that are desirable that are not considered normal maintenance will be undertaken in this phase. Strips needing such work will be identified in the site planning field studies.

* **new trail development** - any improvements needed to encourage use of tributary trails will be undertaken in this phase. General areas for trail development have been identified in this plan, such as Carcajou Canyon, Caribou Pass, Mount Eduni, and the Ekwi River areas. Specific locations will be identified in site planning.

CAPITAL DEVELOPMENT PHASING PROGRAM

(in ooo s $)

PROJECT	Phase 1	Phase 2	Phase 3	Phase 4	Project Sub-total	TOTAL
Research						
* heritage resource inventory and assessment	35.				35.	
* marketing strategy		25.			25.	
						60.
Norman Wells Visitor Centre						
* planning and design	20.				20.	
* construction		225.			225.	
						245.
Interpretation						
* plan preparation and design of displays	20.				20.	
* trail guide book	15.	40.			55.	
* facilities - Canol Camp and R.M.P. 222		40.			40.	
* construction and installation of displays			30.		30.	
						145.
Trail Facilities						
* site planning	20.				20.	
* trail and camp clean up		90.			90.	
* shelters and shelter improvements		30.	100.		130.	
* campsite construction		15.	30.	10.	55.	
* trail improvements		20.	25.	5.	50.	
* registration facilities			10.		10.	
* new trail development				20.	20.	
* signage				15.	15.	
						390.
TOTAL						**840.**

GLOSSARY OF TERMS

Alluvial Fan – a low cone of alluvial sands and gravels built by braided, depositing streams and resembling an open Japanese fan. They are usually located at the mouth of a canyon, ravine, or gully and are built upon an adjacent plain.

Butte - a small, steep-sided hill or peak caused by the continued erosion of a mesa.

Cretaceus – the most recent period of the mezozoic era in geological time (approximately 138 Million years ago).

Disjunct species - a species found in areas which are geographically beyond the particular species' usual habitat.

Doline - a closed hollow in a karst region, formed by the solution of the limestone near the surface, and subsequent subsidence; it is often rounded or eliptical in shape, and sometimes has a sink hole into which surface water flows.

Erratic - a boulder which has been transported from its source by a glacier, sometimes over a considerable distance, and has been left stranded when the ice melted; it is thus, often, of a different type from neighboring rocks.

Esker - a long narrow ridge of sand and gravel which was once the bed of a stream flowing beneath or in a glacier and was left behind when the ice melted.

International Biological Program - an cooperative program between the International Council of Scientific Unions and 58 participating nations, joined by Canada in 1968. The objectives of the program are: to locate and describe representative examples of natural ecosystems; to demonstrate biological values of identified sites; and to aid governments in providing for the preservation of these biologically important areas in the form of Ecological Sites.

Kame - a mound of gravel and sand which was formed by the deposition of the sediment from a stream as it ran from beneath a glacier. These are often found on outwash plains of a glacier.

Kame Terraces - deposits of well sorted sands and gravels built between a stagnant ice mass and the wall of a valley. Most have undrained depressions or pits produced by the melting of enclosed ice blocks.

Karst Landscape - a limestone region in which most or all of the drainage is by underground channels, the surface being dry and barren. The calcium carbonate in the limestone is carried away in solution, and only the insoluble material is left to form a covering to the rocks, the soil is thus usually thin and the surface bare, except in the valleys, where a greater depth of soil may accumulate. Many short gullies and valleys end suddenly where the water is discharged into caves or subterranean channels.

Mesa - tabletopped hills or mountains bordered on all sides by cliffs and representing a remnant of resistant rock. An erosional feature found in arid regions.

Mudflow - a mud stream of fluid consistency which pours down canyons in mountainous regions.

Natural Area of Canadian Significance (NACS) - areas within Canada, identified by Parks Canada, which encompass a substantial diversity of natural themes in a specific region. Canada is divided into 39 terrestrial and 29 marine regions.

Natural Site of Canadian Significance (NSCS) - generally small sites, identified by Parks Canada, containing rare, unique, or exceptional natural features or phenomena of Canadian significance.

Outwash Plain - a smooth sloping plain lying in front of the ice margin. It is formed of layered drift (glacial boulder-clay) left by braided streams issuing from the ice.

Polje – a closed hollow in a karst region, similar to but larger than a koline being flat-bottomed and several miles in length. After heavy rain it may temporarily become a lake.

Refugium - an area of relatively unaltered climate that is inhabited by plants and animals during a period of continental climatic change (as a glaciation) and remains as a center of relict forms from which a new dispersion and speciation may take place after climatic readjustment.

Roche Moutonnee - a conspicuous knob of solid bedrock that has been shaped by moving ice. The side from which the ice was approaching, the stoss side, is characteristically smoothly rounded with a striated and grooved surface. The other side, the lee side, is irregular, blocky and steeper due to the ice plucking out angular joint blocks.

Rockfall - the free falling or rapid rolling of single masses of rock from a steep cliff. The large blocks of rock disintegrate upon falling, strewing the slope below with rubble and leaving a conspicuous scar on the cliff face.

Rock Glacier - a tongue or 'stream' of rock fragments, resembling a glacier in form, and composed of **scree** (a mass of boulders and broken rocks of all sizes). It moves gradually downwards through the action of alternated frost and thaw and gravity.

Scree Slopes - a mass of boulders and broken rocks of all sizes which accumulates at the foot of a cliff or mountain slope, having been broken from the main rocks by weathering and rolled down under the action of gravity. The talus slope is often so steep that a slight disturbance will send the whole mass sliding downwards.

slump - a downward slide of land that usually exhibits a backward rotation motion.

Syncline - the trough or inverted arch of a fold in rock strata.

Till Plain - a surface which has a thick smoothly spread layer of ground **morraine** obscuring any irregularities.

Tors - an isolated mass of rock, usually granite, which has been subject to considerable weathering and often assumes peculiar shapes.

U-shaped Valley - a previously glaciated valley characterized by a relatively straight course and a u-shaped transverse profile.

Xeric Community - a plant community with a very low moisture requirement.