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EFFECTS ON INNU LAND USE**

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January 29, 2003

**Labrador Innu Land Use in Relation to the Proposed Trans Labrador Highway,
Cartwright Junction to Happy Valley-Goose Bay, and Assessment of Highway
Effects on Innu Land Use**

**Peter Armitage and Marianne Stopp
January 29, 2003**

EXECUTIVE SUMMARY

The Department of Works, Services and Transportation has prepared an Environmental Impact Statement for the third phase of the Trans Labrador highway, which will link the community of Happy Valley-Goose Bay with the Cartwright Junction (87 km south of Cartwright). The preferred route of the proposed highway crosses south-central Labrador through the Eagle River plateau, and bridges a number of rivers in the process, including the Eagle, Kenamu, and Traverspine rivers.

The Environmental Impact Statement considers the potential effects of the proposed highway on the physical environment (land and water), biological environment (plants, animals and fish), as well as the human environment (land use, culture, social and economic factors). This information will be used by the Governments of Newfoundland and Labrador and Canada to determine the best ways to eliminate or reduce the negative effects of the highway while maximizing any of its benefits. Canadian government authorities such as the Department of Fisheries and Oceans, Parks Canada, and the Canadian Wildlife Service will use the environmental study to better understand the possible effects of the highway on fish and migratory waterfowl, and plan ways to deal with any negative effects. The project's relationship to the proposed *Akamiupishk*["] (Mealy Mountains) National Park will also be considered.

This report looks at the potential effects of the construction and operation of the preferred route of the proposed Trans Labrador Highway from Cartwright to Happy Valley-Goose Bay on contemporary Labrador Innu land use. Contemporary Innu land use deals with the period in recent Innu history following settlement in the 1960s (i.e., 1969 to the present-day).

In documenting contemporary Innu land use in the area of the proposed highway, we relied heavily on information in a number of reports prepared for the Innu Nation since the mid-1970s. Much of the information concerning the locations of camps, travel routes, birth places, grave sites, place names, and hunting, trapping, fishing, and gathering activities was put into a computer database by the Innu Nation. We used this information in conjunction with additional information obtained during interviews in Sheshatshiu in December 2002 to consider the possible effects of the proposed highway on Labrador Innu land use.

The results of our research show that the preferred route for the highway crosses a core land use area for the Innu people of Sheshatshiu. This core area is the Eagle River plateau within the study area boundary for the proposed *Akamiupishk*["] (Mealy Mountains)

National Park. Several Innu families have a long association with this area going back to the pre-settlement period when they used to live for much of the year at a number of lakes located there. These lakes include *Enakapeshakamau*, *Iatuekupau* (Park Lake), *Kamishikamat*, *Uinikush*, *Mashku-nipi*, *Mishtashini*, *Uapanatsheu-nipi*, *Pepauakamau* (Crooks Lake), *Eshkanat katshipukitinit*, and *Nekanakau*. Before settlement in the 1960s, Innu based at these lakes would travel to Sheshatshiu/North West River, St. Augustine, Musquaro, Rigolet and Cartwright to trade or attend Catholic missions.

Although long-distance travel by canoe and snowshoe to trading posts and missions stopped after settlement, the families long associated with the Eagle River plateau have continued to live in the area. While their presence there has been largely facilitated by the Sheshatshiu Innu Band Council's Outpost Programme, some Innu continue to travel to the area every winter on snowmobile to hunt and fish. In the past 20 years, between 60 and 62 camps have been established in the Eagle River plateau under the Outpost Programme. During this period, a total of 680 Innu people spent at least one season (6 to 12 weeks) at a camp in the area, a sizeable portion of Sheshatshiu's population which is currently about 1,500 people.

Besides considering Innu travel, hunting, trapping, fishing and gathering activities in relation to the proposed road, we also looked at many cultural aspects of Innu presence there. We noted that many Innu value the country, including the Eagle River plateau area, because of its historical and personal associations. Innu people were born and buried in the plateau region. The Innu imagination is well populated with stories about life there, and they have an intimate knowledge of its geography, wildlife and fish populations. Evidence of this experience on the plateau is seen in the numerous Innu place names for lakes and other geographic features there. Certainly, the Eagle River plateau is widely considered among the Innu as a key part of their ancestral territory.

Off the plateau, towards *Mishta-shipu* (Churchill River), Innu land use is less intense. Over the last 20 years, Innu have established camps at *Mutnek* (Mud Lake) and *Mush-nipi*, but only the latter would be accessible from the proposed highway. *Tshenuamiu-shipu* (Kenamu River) continues to support an important Innu salmon fishery downstream. In the pre-settlement period, the river and its tributaries were important travel routes to the Eagle River plateau. The junction of *Tshenuamiu-shipu* (Kenamu River) and *Utshashumeku-shipiss* (Salmon River) was an especially important camping and fishing location for the Innu, and may be accessible from the proposed bridge over the Kenamu.

In considering the possible effects of the Trans Labrador Highway on Innu land use, we obtained information from Innu and government sources concerning land use along existing roads in Labrador. We also looked at documents from elsewhere in Newfoundland and Labrador and North America dealing with the environmental effects of roads. Almost everywhere, very little research has been done into the effects of roads on wildlife and people once they have been built. However, what research has been done shows convincingly that a major effect of new roads is to increase human access to

formerly remote areas. This access can result in the over-harvesting of wildlife and fish species.

Based on our analysis of Innu land use in the area of the proposed highway and along existing roads in Labrador, as well as a reading of documents concerning road effects elsewhere, we were able to make realistic and well-informed predictions of the highway's potential effects on Innu land use. One of the positive effects of increased access to the Eagle River plateau as far as the Innu are concerned, is that their land use in the area could increase. Current trends in Innu land use show expanded use of the existing Labrador road network for harvesting and cabin building, especially in the context of limited support for travel to remote territory under the Sheshatshiu Innu Band Council's Outpost Programme. This trend is likely to continue, with families that have a long-time association with the *Akamiuapishk*^u (Mealy Mountains) area spending more time there.

However, expanded Sheshatshiu Innu use of the area will likely occur in the face of greatly increased competition with non-Innu from Labrador and the Island of Newfoundland, and Innu from Quebec. An increased presence of Labrador and Quebec Innu in the *Akamiuapishk*^u (Mealy Mountains) region could result in heightened pressure on wildlife and fish populations. Together with non-Innu harvesting, the combined effects of over-harvesting could result in significant reductions in wildlife and fish populations unless conservation measures are implemented.

Potential effects would certainly not be limited to the road corridor. The preferred routing for the highway intersects several natural travel corridors which will give hunters and fishers relatively easy access to much of the Eagle River plateau – by snowmobile in the winter and spring, and by boat in the summer and fall. As a result, the geographic extent of possible highway effects could be quite large. *Mishtashini*, *Pepauakamau*, *Uapanatsheu-nipi*, *Eshkanat katshipukutiniht*, *Mashku-nipi* and *Nekanakau* will all be accessible by boaters launching from the north end of *Uinikush*. During the winter, the road will make these lakes accessible from other points as well. Travel to the north on snowmobile will also be easy. Using natural corridors, *Iatuekupau* (Park Lake) and *Enakapeshakamau* will be readily accessible as well as all of the valleys that run east-west across the top of the plateau. Ice-fishing throughout this area, starting with the best-known locations such as *Iatuekupau* (Park Lake), runs the risk of seriously reducing fish stocks.

Commercial forestry, mineral exploration and development, and tourism are considered the three most likely types of activities that would produce cumulative effects associated with the proposed highway. The highway's route through the southern portion of Forest Management District 19, and a bridge across *Mishta-shipu* (Churchill River), will open the black spruce forests on the south side of the Churchill River to commercial exploitation. Future commercial harvesting of these forests is currently the subject of negotiations between the Innu Nation and the provincial Department of Forest Resources and Agrifoods, with good progress having been made on a management plan.

With respect to tourism, both Innu and non-Innu could commence commercial tourism operations in the vicinity of the road which would add to the effects of existing outfitter operations on Innu lands. Non-Innu have a head-start in this industry in terms of existing facilities, access to capital and technical experience, meaning that they presently enjoy a competitive advantage over the Innu and most other new entrants as far as future operations may be concerned. By the time Innu business people emerge who wish to invest in tourism enterprises that operate in the *Akamiauapishk*^u (Mealy Mountains) area, non-Innu may already occupy the best locations.

We considered the effect that building a road through the Eagle River plateau could have on the establishment of the proposed *Akamiauapishk*^u (Mealy Mountains) National Park. Should the construction and operation of the highway result in effects that detract from the values and objectives underlying park establishment, there is a risk that the park, when it is finally established, could exclude significant Innu land use areas. The Innu Nation has endorsed the establishment of the national park, and would like to see the core Innu land use area on the Eagle River plateau included in it.

Three scenarios were outlined to eliminate or reduce (mitigate) the possible effects of the highway, each with different outcomes in terms of effectiveness and the level of effects that remain (residual effects). These scenarios include:

- regulation under existing provincial and federal legislation;
- Innu land selection and co-management under a treaty with the federal and provincial governments; and
- the inclusion of core Innu lands in a new *Akamiauapishk*^u (Mealy Mountains) National Park.

We consider the establishment of a national park (scenario 3), which would include the Eagle River plateau portion of the road, to be the most effective option in terms of dealing with the effects of the highway on Innu land use, particularly in combination with Innu land selection under a treaty (scenario 2). However, all three of these scenarios are complementary, not exclusive, and are, in principle, mutually compatible in operation. Scenario 2 builds on the effectiveness of scenario 1, etc.

We rated the effects of the actual construction of the highway as minor because the level of hunting and fishing by construction personnel is not likely to affect the numbers of wildlife and fish harvested by the Innu. Existing government laws and regulations, and an Environmental Protection Plan, should keep any construction-related effects to a minimum.

During the operation of the highway, we rated the remaining effects (residual effects) on Innu land use as minor to major because of the uncertainty concerning the extent to which the federal and provincial governments would implement all of the legislative mechanisms in their areas of jurisdiction to prevent over-harvesting and reduce or eliminate other potential effects on Innu land use.

Without adequate measures to reduce or eliminate negative effects, monitor the effectiveness of environmental mitigation measures, and enforce regulations concerning land use on the Eagle River plateau, Labrador Innu face the possible depletion of fish and wildlife species in a core land use area. Competition with non-Innu may also mean that a large portion of the Sheshatshiu Innu population experiences a significant loss of independence and control in relation to the *Akamiiuapishk*" (Mealy Mountains) area, and that many of the cultural aspects of land occupancy (e.g. history, religious practice, sense of community, etc.) are eroded as well.

Mitigation using a range of complementary regulatory mechanisms is required, at least in the short-term, pending the completion of negotiations concerning the proposed national park and a treaty with the Labrador Innu. Should regulation be thoroughly applied, with the view to protecting wildlife and fish populations, and therefore harvesting success and other important aspects of Innu land use in the project area, the remaining effects (residual) could approach the minor side of the spectrum. However, should regulation be applied inconsistently, or come too late after the commencement of highway construction, the effects could tend toward the moderate to major side of the spectrum.

Monitoring the residual effects of both the construction and operations phases of the highway is very important. Without monitoring programmes, the proponent, responsible authorities and the Innu themselves cannot reliably determine whether predictions about the effects of the highway are accurate and mitigation measures are working. A number of aspects of the proposed highway during the operations phase were suggested as candidates for monitoring programmes, for example, monitoring the harvests by Innu and non-Innu people in the Eagle River plateau area. The direct involvement of the Innu in such monitoring programmes would provide the proponent and regulatory agencies with direct access to Innu experience and observations about project effects, as well as Innu environmental knowledge concerning wildlife and fish.

Throughout the effects assessment section of this report, we made a number of suggestions and recommendations. These include:

- during the construction phase of the proposed highway, the proponent should consider routing alternatives, including realignments of the preferred route at *Unikush* far away as practical so as to make it difficult for people to gain aquatic access to *Unikush* and the *Mishtashini-Nekanakau* network of lakes;
- in advance of construction each season, the proponent and construction managers should meet with the Innu Nation and Innu families who plan to be in the construction area to discuss specific mitigation measures related to construction (e.g. scheduling of blasting operations, the location of construction camps);
- construction managers and workers should be educated with respect to the Innu presence on the plateau, including the need to respect their privacy, and not to interfere with Innu hunting and fishing activities;
- a variety of legislative mechanisms exist (both federal and provincial) that could go a long way to mitigating the environmental effects of the proposed highway on Innu land use. These mechanisms include provisions in the provincial *Forestry*

Act, *Lands Act* (i.e. Special Management Areas), and *Wild Life Act*, and the federal *Fisheries Act* and *Migratory Birds Convention Act*. These mechanisms should be implemented fully, with all necessary enforcement and monitoring resources put into place. The timely implementation of such mechanisms is required at construction start-up pending the outcome of national park and treaty negotiations that may result in a new land use management regime for the Eagle River plateau;

- in order to protect the salmon in the *Tshenuamiu-shipu* (Kenamu River) system, DFO should schedule the entire river (including *Utshashumeku-shipu*) and establish a monitoring program in partnership with the Innu Nation to assess harvesting effort and population levels there;
- ice-fishing on numerous lakes on the Eagle River plateau runs the risk of seriously reducing fish stocks. We noted previously that DFO has scheduled *Iatuekupau* (Park Lake) as a way to prevent ice-fishing. The scheduling of other lakes in the Eagle River watershed should be given serious consideration for the same reason;
- the Canadian Wildlife Service in partnership with other federal and provincial resource management agencies and the Innu Nation should establish a comprehensive monitoring and enforcement presence with respect to the important migratory waterfowl populations and habitat in the Eagle River watershed;
- a good monitoring programme should be established involving the Innu and government departments and agencies responsible for the management of natural resources (e.g. wildlife and fish) to ensure mitigation measures are effective. The Innu Nation's Environment Office has the capacity to participate in a monitoring programme;
- government departments responsible for managing wildlife and fish resources should conduct an immediate review of their monitoring and enforcement capabilities. Where deficiencies exist, steps should be taken to acquire additional resources to ensure that over-harvesting of wildlife and fish resources does not follow highway construction. Prompt action is required in order to avoid a repeat of the Star Lake experience on the Island of Newfoundland;
- quick action by governments on the officialization of Innu place names on the Eagle River plateau could help mitigate the sense of dispossession and loss of independence that many Innu experience when they see their place names disappearing from the map. Acceptance of Innu place names would recognize the important cultural heritage of the region. As an added measure, the Government of Newfoundland and Labrador should consider giving the new highway an Innu name (e.g. the "Akamiuapishk^u Highway"), a practice not without precedent in other provinces.

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Note

This report contains social survey methodology information that is proprietary to Peter Armitage, Marianne Stopp and the Innu Nation. Such information is made available freely to facilitate peer and public review and the conduct of future land use research.

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We wish to express our gratitude to Tony Penashue for his good hearted and efficient work as our fieldwork co-researcher. We also wish to thank Greg Penashue for responding to several inquiries in which he provided welcome clarification concerning matters related to Innu history and culture.

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Guide to the pronunciation of Innu words used in the report

This guide is intended to assist non-Innu speakers with the pronunciation of written Innu words of which many appear in this report.

<u>Symbol</u>	<u>Pronunciation</u>
<u>Consonants</u>	
p	[p] - as in English " p eanut," or [b] - as in English " b ounty" especially between vowels
t	[t] - as in English " t ag," or [d]- as in English " d og" especially between vowels
k	[k] - as in English " k eept" or [g]- as in English " g ut" especially between vowels
k ^u	[k ^w] - in word final position only, as in English " q uiet"
ss	[s] - as in English " s s"
sh	[sh] - as in English " s heep," or [h] - as in English " h at," depending on the degree of formality of speech. [s] or [sh] - before p, t, k and tsh
tsh	[ch] - as in English " ch eept" [j] - as in English " j eept"
m	[m] - as in English " m ight"
n	[n] - as in English " n uts"
m ^u	[m ^w] - in word final position only
h	[h]- as in English " h at," found only between two identical vowels

<u>Symbol</u>	<u>Pronunciation</u>
<u>Vowels</u>	
e	[e] - as in English "say," in an open syllable or [E] - as in English "met," in a closed syllable
i	[i] - as in English "bee," or [I] - as in English "bit," or [↔] - as in English "the"
a	[æ] - between English "fat" and "father," or [↔] - as in English "sofa" or [∅] – as in English "but" (when m in the same syllable)
u	[o] - as in English "oh!" or [u] - as in English "hoot"
<u>Diphthongs</u>	
eu	[ew] - no English equivalent
au	[aw] - as in English "loud"
iu	[yu] - as in English "you"
ai	[ey] - as in English "day", or [ay] - as in English "bite"
ei	[ey] - as in English "day"
ui	[uy} – as in English "phooey"

Note: the standard Innu spelling does not mark the difference between long and short vowels.

1.0 Introduction

This study enables the Department of Works, Services and Transportation (WST) to respond to the guidelines for the Environmental Impact Statement (EIS) regarding the proposed Phase III portion of the Trans Labrador Highway (TLH), in particular the guideline requiring “information on contemporary land use by the Innu.” It provides an assessment of potential highway effects on Labrador Innu land use. The TLH Phase III will be a two-lane, gravel surface highway linking Happy Valley-Goose Bay with the Cartwright Junction (87 km south of Cartwright). The approximately 250 km link will complete the TLH corridor between Blanc Sablon-L’Anse au Clair in the southern Straits region to western Labrador and southwards into Quebec.

The study area for the research outlined here includes the region bounded from east to west by the communities of Happy Valley-Goose Bay and Cartwright, *Atatshuinipek*^u (Lake Melville) and *Akamiauapishk*^u (Mealy Mountains) to the north, and to the south, by the height of land containing the headwaters of the *Nutapinuant-shipu* (Eagle River), *Aissimeu-shipu* (St. Paul River) and *Pakua-shipu* (St. Augustine River) (Map 1).

Peter Armitage and Marianne Stopp prepared this report. Information on the study team and brief descriptions of each team member’s area of expertise and experience are provided in Appendix A.

2.0 Objectives

The objectives of this study are to discuss the potential effects of TLH Phase III highway construction and operation on Innu land use in the project area. Operation of the highway includes routine maintenance, winter snow clearing, vehicular traffic and the new land uses that occur in its vicinity. Considered effects focus on increased access, both within and outside the proposed *Akamiauapishk*^u (Mealy Mountains) National Park, and its implications for the core Innu living and resource harvest region on the Eagle River plateau.

An analysis of existing Innu land use data was required before we could proceed to the assessment of the possible environmental effects of the proposed road. Gaps in the existing data were identified which required additional research. Thus, this report presents both an overview of contemporary Innu land use as well as an environmental effects assessment of the TLH Phase III on this land use.

At the outset, we wish to be clear about our working definition of land use. Land use refers to activities that are often considered as components of economic behaviour, namely, harvesting – hunting, trapping, fishing, gathering wild fruits and boughs, and cutting firewood, and travel to areas where harvesting can be conducted. We have married aspects of culture to this definition that are more often included in the category “occupancy.” This includes Innu land tenure and all the non-economic components of Innu culture that are intimately related to harvesting activities. Land tenure refers to the way in which people organize their relations with one another with regard to occupying

Map 1. Innu land use study area

and using “land, water (sea, lakes, rivers, etc.) or air and the resources present on, under, or above them” (Armitage, 1990:84). The non-economic components can include religious beliefs, mythology, stories, place names, environmental knowledge, mental and physical health, aesthetic appreciation, historic, romantic and other personal associations with place.¹

In the course of assembling and analyzing Innu land use data, we extracted data on Innu environmental knowledge of wildlife and fish in the TLH project area. These data were supplemented to some extent through supplementary research in the fall of 2002. Such data can serve as a potentially useful adjunct to other data collected for the assessment of biophysical effects of the highway project.

As part of our effects assessment, environmental impact studies relevant to both Labrador and other parts of North America were reviewed in order to develop a comparative understanding of the possible effects of linear transportation corridors on wildlife habitat, ecosystems, and human land use. The mitigation of possible highway effects are discussed with respect to three scenarios: (1) mitigation using existing federal and provincial legislation; (2) mitigation through Innu land selection and co-management provisions under a treaty; and (3) mitigation through the establishment of the proposed *Akamiauapishk*^u (Mealy Mountains) National Park. Although the assessment of the potential biophysical effects of the project are beyond the scope of our report, we recognize that such effects can affect Innu land use. There is an obvious relationship between species and habitat abundance and the continuation of Innu land use in the project area.

3.0 Methods

3.1 Impact assessment methodology

In conducting our assessment of the environmental effects of the proposed third phase of the Trans Labrador Highway, we have been guided by definitions and methods in common use in environmental assessment under the Newfoundland and Labrador *Environmental Protection Act* and the *Canadian Environmental Assessment Act* (see CEAA, 1994; Hegmann, et al., 1999). We have undertaken a review of Beanlands and Duinker (1983) and methodological sections of several environmental impact statements (EIS) conducted in Newfoundland and Labrador over the last 20 years (e.g. Canada, 1994; JWEL, 1998).

¹ The concepts “land use” and occupancy have often been conflated in the literature. According to Usher (1992:10-11), land use “is what is documented by means of the map biography technique...which results in a land use map, and refers to activities such as hunting, fishing and travel. Occupancy refers to the territory which a particular group regards as its own by virtue of continuing use, habitation, naming, knowledge, and control. Both use and occupancy are discoverable facts which can be mapped, but they are not necessarily coterminous.” For a detailed historical review of land use mapping in Canada and Alaska, see Ellanna, et al. (1985).

3.1.1 Study boundaries

In delineating the boundaries for the Innu land use study, we have included the area of Innu land use on both sides of the preferred route for the Trans Labrador Highway (see Maps 1) from the *Mishtashini-shipiss* (Black Rocks – A1) crossing of the Churchill River, to *Unikush* Lake (A4), and hence, across the *Nutapinuant-shipu* (Eagle River) watershed south of *Iatuekupau* (Park Lake – A5), to the Cartwright Junction (87 km south of Cartwright). We have not assessed the possible effects of any of the alternative routes described in Chapter 2 of the EIS.² Beyond the immediate highway corridor, we have also included in our assessment lands and waterbodies that could be reasonably accessed by snowmobile, all-terrain vehicle (ATV), boat and canoe using natural travel corridors that intersect the highway. Natural travel corridors include a major portion of the *Nutapinuant-shipu* (Eagle River) plateau, and land use areas near the Churchill River near a lake referred to by the Innu as *Mush-nipi*.

3.1.2 Existing environment

The focus of this report is on the contemporary land use of the Labrador Innu. These people currently reside in the communities of Sheshatshiu (estimated population 1,500) and Natuashish (estimated population 600).³ We recognize that Innu from some Quebec Innu communities have used the study area historically and to a lesser extent in the contemporary period, however, we have considered their land use only to the extent that they are likely to make use of the proposed highway.

For the purpose of this study, contemporary Innu land use refers to the period in recent Innu history following settlement. We use 1969 as the date for the start of the settlement period, so “contemporary” land use spans the period 1969 to December 2002, when supplementary land use interviews were conducted in Sheshatshiu.

3.1.3 Analyzing effects

For the purpose of this report, we have adopted the Canadian Environmental Assessment Agency’s (CEAA) definition of environmental effects. These result from “any change that the project may cause in the environment, including any effect of any such change on health and socio-economic conditions, on physical and cultural heritage, on the current use of lands and resources for traditional purposes by aboriginal persons, or on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance” (CEAA, 1994). The report deals exclusively with the environmental effects of the Trans Labrador Highway, Phase III, on Labrador Innu land use. However, other environmental effects of the road, be they biophysical or cumulative, are given

²We note that the most southern routing option preferred by outfitters (A13) was not presented to the Innu during the consultations held in Sheshatshiu during the winter of 2002. The most southerly route option discussed during this consultation was the Crooks Lake route (A10) which the Innu objected to due to its proximity to their prime harvesting areas. “All Innu consulted believe that the road must be kept as far as possible from main lakes used by the Innu for harvesting activities” (Innu Nation, 2002:4).

³ Natuashish is a new Innu community located near *Shankush* (Sango Bay) on the north coast of Labrador. The Innu living here formerly resided in Davis Inlet, about 20 km to southeast.

consideration to the extent that they affect Innu land use. Possible environmental effects resulting from accidental events such as forest fires and oil spills are considered in this report.

Predicting highway effects on Innu land use and determining their significance is not a simple matter. For a start, the possible causal connections between change agents and their environmental effects must be made explicit. One way to do this is to extrapolate from other parts of North America where roads have been built in remote areas. However, comparable examples are never identical in terms of their base line environmental conditions or project characteristics meaning that caution must be exercised when extrapolating to the Labrador situation. A complementary approach is to examine data for existing roads in Labrador, in particular the existing phases of the Trans Labrador Highway, from Goose Bay to Western Labrador, and from Red Bay to Cartwright. For the purpose of this environmental assessment we have done both – extrapolated from comparable projects elsewhere in North America as well as from existing transportation infrastructure in Labrador.

One serious problem that frustrates extrapolation from linear transportation corridors elsewhere is the fact that systematic effects monitoring is virtually non-existent particularly as far as social-economic effects are concerned. Scott (1995) undertook an extensive review of the impact assessment and social science literature several years ago and concluded that road projects “conform to this pattern of inadequate monitoring - indeed, I found not a single case of a comprehensive monitoring program, even for major highways. Monitoring of road effects in the north, when it has occurred at all, has been fragmentary” (ibid.:2).

The lack of effects monitoring for roads is part of a wider, well-recognized problem extending to many projects. A broad-base assessment of road effects completed in the American northwestern region determined that there were no extant studies that provided a systematic way of evaluating risks and benefits from building, using, and removing roads, and urged that such studies be conducted (Gucinski, et al., 2001). The effects monitoring associated with military flight training in Labrador-Quebec and that being developed for the Voisey’s Bay mine/mill operation in northern Labrador appear to be exceptions to the rule. The generalized lack of monitoring work throughout Canada is problematic given that “mitigation is, of course, of little value without a monitoring program to assess the worth of the mitigation” (Northland Associates Ltd., 1986: 332).

3.1.4 Cumulative environmental effects

For the purpose of this assessment, cumulative environmental effects occur when “the impacts of one activity combine with those of another in a synergistic manner” (Canadian Environmental Assessment Research Council, 1988:2).⁴ We consider the potential effects of commercial forestry, mineral exploration and development, and adventure

⁴ We note that there are many definitions of cumulative effects in the literature. A similar definition is provided by (Hegmann, et al. 1999) – “Cumulative effects are changes to the environment that are caused by an action in combination with other past, present and future human actions.”

tourism and outfitting as activities that could generate cumulative effects as far as Innu land use is concerned.

The environmental assessment and scientific literature on road effects is unanimous in pointing to increased access as a potentially significant effect (cf. Jalkotzy, et al., 1997). Increased access could, perhaps, be considered in the cumulative effects category.⁵ However, because the increased access to formerly remote lands and waterbodies is so clearly and immediately linked to the operation of the road, we have considered it in the main effects assessment section of the report.

3.1.5 Mitigation

Mitigation refers to the reduction or elimination of adverse effects of a project as a result of its construction or operation. We consider three scenarios for mitigating the effects of the proposed TLH having to do with existing legislative mechanisms, a land use regime established under the proposed *Akamiuapishk*" (Mealy Mountains) National Park, and possible provisions in a land claims agreement (treaty) between the Innu Nation and the federal and provincial governments. These scenarios were chosen because they appear at the present time to represent both the default regulatory regime (as it exists under existing legislation) as well as most likely alternatives which may exist under future regimes, depending on the outcome of ongoing planning processes and negotiations. Other possible scenarios seemed remote and/or unlikely and were not considered.

3.1.6 Residual environmental effects (significance)

Residual environmental effects are those that remain once mitigation measures have been applied. In this assessment on TLH III effects on Innu land use, we will consider what residual effects remain after each of three mitigation scenarios are applied. The significance of such effects will be considered at the same time.

In assessing the significance of the effects of the project on Innu land use we have considered a number of criteria including the magnitude of the effects, their geographic extent, their duration and frequency, and the degree to which they are reversible or irreversible.⁶ Following CEAA (1994), magnitude refers to the severity of the effects. "Minor or inconsequential effects may not be significant. On the other hand, if the effects are major or catastrophic, the adverse environmental effects will be significant." With respect to geographic extent, we recognize that "Localized adverse environmental effects may not be significant. Alternatively, widespread effects may be significant." We therefore consider "the extent to which adverse environmental effects caused by the project may occur in areas far removed from it...as well as contribute to any cumulative environmental effects" (CEAA, 1994). In terms of the duration and frequency of the effects, we note that effects that last many years and/or occur with great frequency can be

⁵ Hegmann, et al. (1999) list as an example of a cumulative impact "combined black bear mortalities within a given wildlife management unit from hunter harvest, road kills and destruction of nuisance animals."

⁶ One factor that CEAA cites in determining an adverse environmental effect is a "Detrimental change in the current use of lands and resources for traditional purposes by aboriginal persons" (1994).

much more significant than sporadic, short-term effects. Lastly, an assessment of the extent to which the effects are reversible is required because reversible ones may be less significant than irreversible ones.

Two other criteria are considered in the determination of significance. These are the probability of the occurrence of the effects and the confidence limits in the prediction of such occurrence. Following CEAA (1994), if there is a low probability of occurrence, significant beneficial or adverse effects are unlikely. With respect to confidence limits, we assess the certainty of likely effects on Innu land use recognizing that “if confidence limits are high, there is a low degree of uncertainty that the conclusions are accurate and that the significant adverse environmental effects are likely or not” (ibid.).

We rate the residual effects (significance) of the TLH during the construction and operations phases on Innu land use in terms of two aspects:

- a. harvesting activities including hunting, fishing, trapping, gathering, and wood cutting;
- b. occupancy including the Innu sense of independence from non-Innu people and their control, aesthetic appreciation of beautiful places, *communitas*,⁷ the meaning that is constructed through productive labour, sharing, exercise of religious beliefs, play, romance, education, learning about the history of one’s family and people in an area, place names, and all the other activities and cultural processes that occur while people are living on the land that are not narrowly economic in nature.

The following definitions apply to the determination of significance in each case:

A major (significant) effect is one where a core Innu land use area and most of the people who use it are affected in such a way that either the harvesting or occupancy aspect of their land use is affected, and where these effects extend geographically throughout major portions of the core area, and are not reversible within several generations (i.e. permanent). Such effects may extend beyond the people who use this area to other groups in the community;

A moderate (significant) effect is one where a moderate percentage of the core Innu land use area and a moderate number of the people who use it are affected in such a way that either the harvesting or occupancy aspect of their land use is affected, and where these effects are reversible within a generation.

A minor (not significant) effect – is one where a small portion of a core Innu land use area and a minority of the people who use it are affected in such a way that either the harvesting or occupancy aspect of their land use is affected, and where such effects are reversible within a period of several years.

⁷ *Communitas* (from the Latin word for community) refers to a psychological state where one feels a sense of belonging either to a community of people or a place; a feeling of being part of something bigger than oneself.

A **negligible (not significant) effect** is one where an extremely small part of a core Innu land use area is affected, involving only a few individuals in ways that have no effects on either the harvesting or occupancy aspect of their land use and where these effects are of very short duration and are reversible.

3.1.7 Monitoring

We accept Beanlands and Duinker's (1983:94) view that "monitoring of impacts is required to (i) test impact predictions and hypotheses, thus contributing to the body of knowledge for future assessments, and (ii) test mitigative measures, thus ensuring the protection of valued ecosystem components."⁸ Following Penn's definition, "Monitoring generally refers to the repeated collection of data over a period of time long enough to make it possible to document reliably the issues of concern to the community which will be using the data" (Penn, 2000:2).

At the end of the report, we propose a monitoring programme to collect data on the effects of key project elements, particularly during the operations phase, so that changes to mitigation measures can be made in a timely and effective manner.

3.2 Innu land use research methodology

3.2.1 Overview

Since the mid-1970s, considerable research has been done by the Innu Nation, university and independent researchers on Innu land use and occupancy. However, little of it was conducted for the purpose of environmental effects assessment. Most of the research was done to support land claims negotiations, where the primary goal was to show the location and extent of Innu land use. One exception is Armitage's 1989 study which documented contemporary Labrador Innu land use as part of a submission to an environmental assessment panel reviewing military flight training in Labrador and northern Quebec. However, all of this research was conducted at a broad geographic scale with no intention of applying the results to future environmental assessments. Nonetheless, there is much there that is of use to the assessment of the effects of the TLH Phase III on Innu land use.

In this report, our focus is on "contemporary" Innu land use, including the occupancy component mentioned above. As mentioned above, we have used 1969 to mark the beginning of this time period because it marks the start of the settlement period in Innu history, a time when Innu started to live in government-built houses, send their children to school, and take up full-time wage-employment. Sedentarization had significant consequences for Innu land use, one of the most important being a shift in the mode of transport to and from seasonal country locations, from canoe and snowshoe on the one hand, to aircraft, snowmobile and motorboat on the other. Many of the customary travel

⁸This reiterates the statement by Northland Associates Ltd. (1986:332), "Mitigation is...of little value without a monitoring program to assess the worth of the mitigation."

routes and portages that had been used to reach hunting territories or distant trading posts and missions were abandoned. The Innu Nation also used 1969 to distinguish the contemporary from the historic periods and its land use database is structured according to this temporal criterion.⁹

In creating this profile of Innu land use in the TLH Phase III study area, we accessed data primarily from Innu Nation sources. Data from previous Innu Nation land use and occupancy research included:

- 1977 Tanner – in 1975 and 1976, Adrian Tanner conducted numerous interviews in Sheshatshiu related to Innu land use. Tanner’s 1977 report was submitted to the Government of Canada as part of the Innu Nation’s Statement of Claim, a requirement for comprehensive land claims negotiations;¹⁰
- 1980 “LAMAP” - in the summer of 1980, Innu researchers mapped camp sites, travel routes, place names, camp and cache locations, and other information;
- 1979 Sakauye, Andrew and Gregoire - in 1978 and 1979, Brenda Sakauye, Alex Andrew and George Gregoire interviewed hunters and elders from Sheshatshiu and Davis Inlet about their historic land use;
- 1989 Armitage - during the period 1987-88, Peter Armitage recorded contemporary Innu land use to assist with the environmental assessment of military flight training (see Armitage, 1989);
- 1991 Armitage - in July 1991, following on the heels of the 1987-88 work, Armitage undertook additional land use research using the map biography;
- 1996 Armitage - in March 1996, Armitage conducted a pilot study for the Canadian Wildlife Service on Innu spatial knowledge of waterfowl habitat;
- Sheshatshiu Innu Band Council (SIBC) Outpost Programme records – for more than ten years, Armitage has been compiling data on camp locations established under the Band Council’s Outpost Programme.

One dataset in our possession, namely, Mailhot (1982), was not used directly in our assessment because it covers the pre-settlement period of Innu land use. Generated in the context of a Memorial University study – the Sheshatshit Socio-linguistic Variability Project – the data consist of life histories of 30 or more elderly or now-deceased men and women from Sheshatshiu. Despite the time period covered by these data, however, they helped us to understand the historical importance of the core Innu land use area in *Akamiupishk*^u (Mealy Mountains) and the nature of Innu land tenure.

We determined that the LAMAP data had limited utility for our assessment of the TLH

⁹ The Provincial Archaeology Office divides recent history into “ethnographic” and “historic” periods with 1960 as the dividing line between the two.

¹⁰ The Innu Nation was formerly known at the Naskapi Montagnais Innu Association. This name was changed to the Innu Nation in 1990.

Phase III effects on Innu land use because they cannot be broken down into shorter time periods. The data recorded there present a composite picture of land use extending from 1980 to as far back as the memory of the informants would permit (i.e. approximately to the 1920s). Despite this limitation, LAMAP is useful because of the large number of place names recorded, and because it helps our understanding of contemporary land use in relation to historic extent and trends. The travel route data included in LAMAP also facilitate an analysis of natural travel corridors in the highway project area.

At the commencement of our work concerning Innu land use in relation to TLH Phase III, we undertook a review of the existing Innu Nation data in order to identify data gaps. With the view to filling as many of these gaps as possible, Marianne Stopp undertook fieldwork in Sheshatshiu in conjunction with Innu co-researcher, Tony Penashue.

In what follows we provide a brief overview of the methods used in the abovementioned research projects from which data used in this report were derived. Armitage has described these methods in one way or another in other publicly available reports (e.g. Armitage, 2001, 1990).

3.2.2 Data from previous land use and occupancy research

3.2.2.1 Armitage 1991 landuse and occupancy data

Under contract to the Innu Nation, Armitage conducted several weeks of research into contemporary Innu land use and occupancy during the summer of 1991. The purpose of this research was to supplement other Innu Nation research that covered earlier time periods. He had previously gathered land use data for the period 1979 to 1987 (see below), and prior to that, Brenda Sakauye, Alexander Andrew and George Gregoire had gathered such data for the pre-1979 period.

Land use and occupancy research for all of these time periods relied heavily on the map biography method. Each biography is based on “informant recall” and constitutes, therefore, a record of an individual harvester’s land use both as part of community-based and country-based harvesting activities. The biographies record the locations of campsites, travel routes, birth and death locations, harvest areas for various animal species and wild fruit, and other information. In this context, harvesting behaviour

is comprised of several distinct components, including search or scan, location of fish or game, pursuit and retrieval (primarily in the case of game), and dispatch or harvest. In association with these behavioral phenomena are corresponding spatial phenomena which include travel corridors, camp sites, net sites, intercept points, trap lines, kill or harvest sites, pursuit or retrieval paths, general harvesting or search areas, specific search areas, and harvest areas (Ellanna, et al., 1985: 236-238).

The methods used in the preparation of Innu map biographies were in most respects similar to the land use mapping methodologies employed during the last 20 years by various First Nations in the Canadian north as integral parts of land use and occupancy studies.

The main intent of such studies has been to:

- document the extent of land use and provide the basis for claims to ownership or usufruct property rights to the land by traditional occupants (Ellanna, et al., 1985:7);
- provide an appropriate measure of compensation to Aboriginal peoples for loss of or disruptions to the use of traditional lands and resources (ibid.).

To a far lesser extent, land use mapping has been undertaken in the context of environmental effects assessment research and conflicts over land use. In general, however, researchers have applied mapping methodologies to document locations where Aboriginal peoples harvested particular wildlife species, to determine the spatial and temporal aspects of harvesting activities, to ascertain changes in land use patterns, and to obtain data on the cultural value of land use and land tenure mechanisms (i.e., rules for determining human access to land and resources).

In 1991, Innu co-researchers were retained in Sheshatshiu and Davis Inlet to work on the research project. They acted as translators and consultants during the interviews, facilitating both questions and the exchange of information. They played an extremely important role in translating the spatial knowledge of informants (particularly those who are map illiterate) into the two-dimensional cartographic representations recorded on the map biographies.¹¹

In order to facilitate map literacy and navigation during interviews, Armitage and his co-researchers used a toponymic base map generated during previous land use research. In 1987-88, key informants were asked to provide Innu place names for important geographic features in the harvesting territories of the Sheshatshiu and Davis Inlet Innu to assist in the production of the map biographies and the preparation of place name maps. These place names were recorded directly on the 1:250,000 scale National Topographic System (NTS) base map. Revisions to this map were made during the 1991 research in light of new information from informants, and with the addition of place names generated during the LAMAP project in 1980 (see below).

Both 1:50,000 and 1:250,000 scale NTS base maps were used in the 1991 research. The smaller scale topographic maps were trimmed and taped together to produce larger base maps of the major land use areas for each community. In total, four such base maps were created: one for the region southwest of Sheshatshiu, covering the *Akamiuapishk*^u (Mealy Mountains) area; one for the region west of Sheshatshiu covering an area between *Minai-nipi* (Minipi Lake) in the south and *Ashuapamatikuan* (Shipiskan Lake) in the north; one

¹¹ This process of translation requires a great deal of additional research.

for the area west of Churchill Falls covering the area of *Kainipassuakamat* (Lobstick Lake), Schefferville, and *Minaik*¹² (Menihek Lakes); and a fourth one covering the region west of Natuashish, bordered by *Shapeiau* (Shapio Lake) in the south, *Kauashekutapinanut* (Lac aux Goelands) in the west, and Nutak in the north.

In many instances where the informant's land use activities could be recorded at larger scale, 1:50,000 scale maps were used instead. These afforded a far greater level of geographic detail to the informants and greatly facilitated navigation across the maps, and elicitation of land use and occupancy testimony.

Prior to the commencement of the interviews, clear plastic overlays (acetate) were secured on top of these base maps. Informant identification, topographic map number, control points for subsequent digitizing, and other relevant information were written on them. Primary and secondary camp sites, travel routes, and harvesting areas for numerous wildlife species were recorded on the overlays. Harvesters were asked to delineate both the places where they killed individual animals species, but also the areas in which they travelled in search of game (i.e., scan and pursuit areas). The totality of an informant's land use in a particular geographic area was usually recorded on a single overlay sheet.

Harvesting areas for the following species categories were recorded:

- caribou, moose and black bear;
- furbearers (including martin, mink, weasel, beaver, muskrat, fox, and lynx);
- fish;
- small game (including porcupine, spruce grouse, willow ptarmigan and snowshoe hare);
- migratory waterfowl;
- wild fruits;
- seals.

Trap lines, fish net and boil-up locations were also recorded to the maximum extent possible, but especially when the biographies were generated using 1:50,000 scale base maps.¹²

Travel routes and narrow harvest corridors were recorded on the overlays as lines. Camp, net, trap and boil-up locations were recorded as points. Harvest locations were recorded either as polygons, lines, or points depending on whether they were generalized harvest areas or specific kill sites (moose and black bear).

The map biographies record the maximal extent of hunting, trapping, fishing, gathering and travel by individual harvesters. The lines, points and circles on the plastic overlays of the base maps denote, therefore, the furthest a harvester travelled in any direction from a primary or secondary hunting camp. They designate the total area around a camp or

¹² A trap line is defined as "a conceptualization of points in space joined together by the travel route between them" (Freeman, 1976, vol.3, p.50).

community in which a hunter scanned, retrieved, and killed game or harvested wild fruits.¹³

It is important to note that these map annotations do not indicate intensity of land use. The apparent density of lines and symbols in any portion of a map may simply be an artifact of the map biography method and subsequent incorporation into a GIS database rather than any real indication of heightened land use there. A single line could indicate a travel route used by a large hunting party of 12 people or one used by a solitary person checking his or her snares. Similarly, multiple lines in an area could represent one trip by several informants who were members of the same hunting group not several trips by several individuals or on several different occasions.

Harvesters were asked to delineate their land use activities in a given season between January 1, 1988, and July 1, 1991. The interviews commenced with questions about the locations of hunting camps during the study period. Data on hunting camp locations were also obtained from the SIBC “Outpost Programme” records. The data obtained from this source were useful in cross-checking the data provided by the harvesters concerning hunting group composition and the dates that they occupied specific camp locations.

In mapping projects of this kind, harvesters may have trouble determining exactly when they occupied a specific campsite given the fact that they may have repeatedly changed harvesting areas and camp locations from one season to the next. As a result, ensuring that the informants do not become confused in remembering their land use at particular locations in specific seasons can be a painstaking and time-consuming process.¹⁴ Nonetheless, as the time period covered in the project was relatively short (i.e., <4 yrs.), virtually all of the harvesters were able to remember in considerable detail which particular season they spent at a given location.

With respect to the sample of harvesters interviewed during this research, the sampling methodology must permit the generalization of mapped data to the community as a whole. As Ellanna, et al. (1985:166) note, sample size and composition “should be driven by research questions or problems” which, in the case of the 1991 mapping work, meant a focus on the extent of contemporary Innu land and resource use. This research problem biased the selection of informants in favour of those people with the most active and extensive land and resource use, in particular, those people who harvested from base camps in the country or who were frequent participants in community-based harvesting activities. Thus, “key informants” were harvesters of any age who frequently participated in country and community-based harvesting activities, in particular, older harvesters with extensive harvesting experience. For more on sampling methods in other land use mapping studies, see Ellanna, et al. (1985:164-166).

¹³ The total aggregate of such lines or circles around a camp in a given season constitutes the effective perimeters of a hunting range (see Freeman, 1976, vol.3, p.54).

¹⁴ See Ellanna, et al. (1985: 182-183) for a discussion of the reliability of informant recall over time.

In total, there were 177 adult males in Sheshatshiu who were 15 years or older as of January 1, 1988. The theoretical population of active hunters in the community was determined to be 96 adult males (54.2% of the total adult male population). The sample was developed as a result of consultation with two experienced harvesters as well as on the basis of interviews conducted in the context of earlier research (Armitage, 1990). The criterion used to define a person as an active harvester was participation in a single harvesting activity.

Of the 96 active harvesters, 21 were not available for interviews, so the study population consisted of 75 men. Of these, 25 harvesters were interviewed giving a response rate of 33.3%. However, the harvesting activities of many of the men who were not interviewed were described by the informants because, as stated previously, Armitage consistently asked them to list the members of their hunting groups whenever they described a particular hunting trip.¹⁵

With one exception, women were not interviewed in either community due to time constraints, and the fact that the geographic extent of harvesting by women is small in comparison to that of men. Priority was assigned to identifying land use by men with the maximal geographic extent of harvesting activity.

Mapping in both communities captured both community and country-based land use activities. Community-based land use refers to hunting, trapping, fishing and gathering activities of short-term duration where either the community of Sheshatshiu or Davis Inlet is used as the base of operations. Harvesters left the community and returned later in the day or at the most one to two weeks later. Harvesting activities, with the exception of caribou hunting trips by aircraft were generally restricted to a 70 km radius of the community. Country-based harvesting, on the other hand, refers to hunting, trapping, fishing, or gathering activities conducted for relatively long periods of time, where a base camp was established, and where the household was actually moved from the village to the country.

As far as mapping country-based land use is concerned, the sampling technique consisted of determining the location of hunting camps each season on the basis of Band Council records and discussions with Outpost Programme coordinators and informants themselves.¹⁶ Evidently, the number and location of occupied camps vary from one season to the next. However, once the locations and occupants of hunting camps had been established for each season, every effort was made to interview at least one adult male hunter from each camp. This provided a response rate of close to 100% given that the sample unit was really hunting groups.

¹⁵The problem of harvester reluctance to describe the harvesting activities of other people does not apply to caribou hunting groups when the hunters conduct their harvesting activities as a production unit. As a result, it is sufficient to interview one hunter from a large group in order to determine where all the members of the group travelled in the pursuit of caribou. Of course, additional interviews facilitate cross-checking and validation of individual map biographies.

¹⁶The coordinators are responsible for organizing the air charters that transport Innu to and from the country.

With respect to data verification, no community review of the map biographies was undertaken, however, the data were cross-checked using aircraft charter forms that list hunting group members and destinations of flights (i.e. camp locations), by reference to SIBC Outpost Programme records, and by comparing testimony from two or more informants at a given camp with the view to identifying inconsistencies.

3.2.2.2 Armitage 1988 landuse and occupancy data

The methods used with respect to this research were virtually identical to those employed in the 1991 work just described, the major difference being that the mapping was conducted exclusively at 1:250,000 scale. Most of the fieldwork which produced this dataset was conducted in Sheshatshiu and Davis Inlet in the fall, 1987, and winter, 1988. Fieldwork was also conducted in January, 1989, to verify and supplement data obtained previously.

With the assistance of four Innu co-researchers who acted as translators and consultants during the interviews, informants were asked to delineate their harvest areas in a given season, between January 1, 1979, and December 31, 1987. The year 1979 was chosen as the starting point for the study because land use data had previously been collected by Sakauye, et al. (1979) up until that date.

The interviews commenced with questions about the locations of hunting camps between 1979 and 1987. Data on hunting camp locations were also obtained from the SIBC Outpost Programme records and other documents (e.g. Gardner and Coombs, 1984).

The map biographies generated as part of the 1987-88 study were produced during the same interviews at which harvesting data were also obtained, and as a result, the informant samples for both the mapping and harvesting research were identical. The sampling method consisted of several steps. Firstly, lists of all the males in the two communities 15 years and older were made based on censuses of the two communities which were conducted in the early stages of the study. The total adult male populations (15 years old and above as of September 1, 1987) of Sheshatshiu and Davis Inlet were 186 and 109 persons respectively. Next, these theoretical populations of 186 and 109 males were broken into two types of sample units, namely, country- and community-based land use. The theoretical population was used as the study population for the sample as harvesters were not excluded from the sample for reasons of non-availability and other non-response reasons.

The total number of harvesters interviewed in Sheshatshiu and Davis Inlet regarding their country-based land use was 30 and 11 informants respectively. As far as the sampling of community-based land use is concerned, the study populations consisted of 52 harvesters in the case of Sheshatshiu and 42 in the case of Davis Inlet. These populations were further divided into sample units consisting of very active, moderately active, and minimally active harvesters. These units were defined informally on the basis of

discussions with a small number of active harvesters in each community.¹⁷ An inactive harvester was defined as someone who does not engage in any harvesting activities at any point in the year, while minimally active is defined as someone who may make one or two fishing trips a year, kill a few spruce grouse and partridge, and snare a few hare. Moderately active was defined as someone who may make a number of fishing trips in a year, regularly tend snares, establish a camp at *Uhuniau* (North West Point) or along the Churchill Falls road for a one or two week period, and kill several spruce grouse or partridge. Finally, a very active hunter was defined as someone who may make several fishing trips a year, constantly tend a fish net in the summer months, tend snares, hunt partridge on a weekly basis, set traps in the vicinity of the community, and establish camps at *Uhuniau* (North West Point) or Churchill Falls road for two or more weeks of the year to hunt migratory waterfowl and other species. Given study populations for Sheshatshiu and Davis Inlet of 52 and 42 people respectively, the response rate in sampling community-based harvesting was 46.2% (24 people) for Sheshatshiu and 45.2% (19 people) for Davis Inlet.

As far as community review is concerned, draft versions of blue-print composite land use maps were taken back to Sheshatshiu and Davis Inlet to ensure that no camp site areas or hunting, trapping, fishing, and gathering locations had been omitted or erroneously recorded. The maps were scrutinized by several harvesters in each community as well as by representatives of the Band Councils and Innu Nation. There were also presented for consideration at public meetings in both communities. In some instances, information gaps and errors were identified which necessitated correction and additional interviews with a number of harvesters.

3.2.2.3 Armitage 1996 land use and occupancy data

In March, 1996, under the terms of a contract between the Canadian Wildlife Service (CWS) and the Innu Nation, Armitage conducted a pilot research project in Davis Inlet and Sheshatshiu on Innu spatial knowledge of waterfowl using a key informant approach. Eight informants in Davis Inlet and six in Sheshatshiu were interviewed with the assistance of bilingual Innu co-researchers.

In Sheshatshiu, wings of several waterfowl species were used to facilitate identification. Otherwise, identification of bird species was at times difficult. More work is required to clearly identify the Innu words for individual waterfowl species.

Map biographies recording knowledge of waterfowl habitat were prepared in the context of interviews at 1:250,000 scale. Informants were asked to identify nesting, moulting, and staging areas for waterfowl species. The basemaps used for the mapping interviews was coded for place names to facilitate navigation by the informants and researchers. Once fieldwork had been completed, Armitage digitized the waterfowl data from the map

¹⁷This method of distinguishing between different types of harvesters has been employed elsewhere in harvesting studies (see JBNQNHRC, 1978:28; and Usher, et al., 1985:55).

biography overlays. These data are included in the Innu Nation's CREATOR database described below.

3.2.2.4 Sakauye, Andrew and Gregoire 1979 land use and occupancy data

Brenda Sakauye was retained by the Innu Nation in 1978 to conduct a detailed land use and occupancy study.¹⁸ In conjunction with Innu co-researchers, Alexander Andrew and George Gregoire, Sakauye recorded a variety of data on mylar overlays of 1:250,000 scale NTS base maps.¹⁹ The data included travel routes, camp sites, locations of caches, grave sites, birth places, caribou calving and migration areas, and harvest areas for furbearers, small game, fish, migratory waterfowl, bear, moose, wolf, caribou, and berries.

The data were recorded for three time periods: 1900 to 1930; 1931 to 1950; and 1951 to 1979. However, the specific years of land use (e.g. the year that someone travelled along a specific route) were often recorded on the map biographies.

In the early 1990s, Armitage contacted Sakauye to discuss her research and reviewed her correspondence and methodological notes. The research followed the standard map biography approach. It recorded data at 1:250,000 scale. Species codes and other symbols used in making the biographies were fully comprehensible. Twenty-three middle-aged and elderly people were interviewed in Sheshatshiu including one woman. Twenty-eight people were interviewed in Davis Inlet including three women.

3.2.2.5 Sheshatshiu Innu Band Council Outpost Programme records

For more than 25 years, the Sheshatshiu Innu Band Council (SIBC) has run an Outpost Programme (called *Kakushpinanut*) that finances travel by Innu families to and from camps in the interior of Labrador. Each year, a programme coordinator is hired whose responsibilities include determining the names of prospective participants, organizing aircraft charters and supplies or road transport, and communications with participants while in the country. Invariably, the coordinators prepared lists of people who participated in the programme each season. Armitage retrieved many of these lists from the Band Council files, but also asked the coordinators to provide lists at the end of each new season. Starting in the mid-1990s, therefore, he compiled a database of Outpost Programme participants and camp locations, and continued to update this whenever new information became available. The database covers the period 1973 to 2002 but is unreliable in certain respects prior to 1982 because complete lists of programme participants were not kept.

Geocoding of the camp locations was undertaken using the Innu Nation's place name database that has coordinates linked to each place name. It is important to note that the

¹⁸ Sakauye had previously worked on the Labrador Inuit Association (LIA)'s land use research project coordinated by Carol Brice-Bennett (Sakauye, personal communication).

¹⁹ Limited mapping was also conducted at 1:500,000 and 1:1,000,000 scales.

geocoding does not record the actual camp location but the centre-point of the lake where each camp was located.

3.2.2.6 LAMAP 1980 landuse data

LAMAP refers to a research project undertaken by the Innu Nation in the summer of 1980 when male hunters from Sheshatshiu and Davis Inlet were interviewed concerning their historic land use. 1:50,000 scale NTS map sheets were trimmed, joined together and laid out on the school gym floors in each community. Guided by Innu researchers, the hunters were taken across the maps in their stocking feet and questioned about their travel routes, camp locations, birth and grave sites, and place names.²⁰

In 1985 and 1986, José Mailhot and Anne-Marie Baraby, organized the maps, entered the place names and some other data recorded on them into a computer database, and made considerable progress in standardizing the spelling of the place names (Mailhot, 1986).

LAMAP has one great advantage over other land use studies. Although the majority of land use studies have been conducted at 1:250,000 scale, LAMAP used 1:50,000 scale maps thereby affording, at least potentially, greater locational accuracy and interpretative power for informants (who sometimes remark that they have trouble reading maps at 1:250,000 scale). Approximately 550 NTS map sheets were required to cover most of the Labrador Innu territory that extends well into Quebec.²¹

Only one time frame was used in the project - living memory. This means that land use activities cannot be queried using temporal variables. However, some indication of seasonality is assigned to many of the travel routes (not the camps) but the seasonal attributes are inconsistently applied across the study area.

Fifteen people were interviewed in Sheshatshiu and 20 people in Davis Inlet. As most of them are now deceased, it is extremely difficult to determine their levels of map literacy.²² The interviewing capabilities of most of the Innu researchers are unknown, although one researcher has raised questions about the rigour applied in interviewing informants regarding land use in some sectors of the territory. For example, some travel routes traverse unlikely terrain such as extremely steep cliffs. The Innu researchers appear to have received no detailed instruction in cartography, geography, or interviewing techniques prior to the commencement of the research. The project was not supervised by a qualified researcher.

²⁰ Mailhot, who is responsible for giving the mapping project its name, reports that “the more I consult LAMAP, the more I note that this database is incredibly rich. It is too bad that we have not been able to elucidate all the remaining problems. But even in it’s present state, I find it to be an inexhaustible source. I consult it constantly (translated from French, personal communication).

²¹ Map coverage does not extend to Fort Chimo (Kuujjuaq).

²² Some of the non-deceased informants are the only sources of mapped land use data in large portions of the Innu territory.

The maps record both major travel routes and “hunting pathways.” These latter features are confusing in that they suggest that the informant actually travelled along the indicated paths, when in fact they represent generalized harvest areas. In other mapping projects, such areas are represented by polygons.

Full appreciation of the accuracy of the LAMAP dataset awaits independent verification that may be provided by future land use research or archaeological surveys. Surveys by Doug Robbins (1995) at *Kakuseukakants* (north of Harp Lake), Fred Schwarz (1997) in the headwaters of the *Nutapinuant-shipu* (Eagle River), and members of the Labrador Hydro Project archaeological team on the Churchill River (1998-1999; IEDE/JWEL 2000), have generated data that can be used for verification purposes. Sightings of numerous abandoned Innu camps along *Ashuapun-shipu* (Adlatok River) by four recreational canoeists (including archaeologist Stephen Loring) who travelled along the river in September 2001 also lend some credibility to the LAMAP data (Bill Ritchie, personal communication).

In 1990, Armitage retained the services of Polaris Communications which copied all of the LAMAP maps using Photomechanical Transfer (PMT) technology, and generated several composite maps of the travel route and camp data from LAMAP at 1:250,000 scale. He subsequently digitized the data from these composite maps for inclusion in the Innu Nation’s database. They comprise two MAPINFO layers – one for travel routes, the other for camps.

3.2.2.7 Tanner 1977 data

As mentioned previously, Adrian Tanner conducted land use and occupancy research concerning the Sheshatshiu Innu in 1975 and 1976 the goal of which was to provide documentation for the Innu Nation’s Statement of Claim. While no methods statement is provided in Tanner’s 1977 report, it is clear that he based his findings on a review of a certain amount of the published historical literature concerning the Innu in addition to interviews with senior, male Innu hunters. He appears to have recorded toponyms for the *Akamiupishk^u* (Mealy Mountains) area and undertook limited mapping work. Four maps resulted from this work that depict harvest areas and environmental information concerning caribou, furbearers, waterfowl, porcupine, salmon and trout at approximately 1:1,013,760 scale.

Informants were asked to talk not only about their history of travel, trade and harvesting in Labrador and adjacent parts of Quebec, but also the wildlife and fish resources they found at various places throughout the territory. Innu life histories were divided into three time periods - 1900 to 1930, 1930 to 1950 and 1950-1976. Part of this latter period overlaps with the contemporary period (1969 to 2002) that is the focus of this report.

3.2.3 Supplementary Research – Stopp and Armitage 2003

Following our review of previous land use and occupancy research, we identified notable data gaps with respect to possible rotational harvesting methods, trap lines, portage

locations, travel routes, habitat observations and other environmental information which were partly addressed in the context of supplementary research by Marianne Stopp (Stopp and Armitage, 2002). A data gap recognized at the early stage of project scoping was the absence of information on Innu land use in the project area for the past 10 - 15 years, with the exception of the data from the SIBC Outpost Programme records on the location of lakes where Innu established camps. An informant interview process was therefore initiated that focused on collecting information on camps (their locations, as well as group size and social organization), resource areas, travel areas, harvested resources, seasonality, and species' availability. The interviewing process followed that described in preceding sections for the map biography method.

Prior to fieldwork, a co-researcher, Tony Penashue, was contracted with a comprehensive knowledge of the project area, map-reading skills, as well as fluency in English and Innu-aimun. As further preparation, an interview outline was developed; map materials were collected that included 1:50,000 NTS maps onto which data were recorded as well as 1:250,000 NTS maps that served as reference maps for Innu-aimun place names; recording equipment was acquired; and Innu vocabulary reviewed (e.g., place names, animal names, geographic/ habitat terms). The interview outline, interview methods and procedures were submitted to the Innu Nation for approval prior to the start of the interview process.

Potential informants were chosen chiefly on the basis of whether they had a history of living and/or resource harvesting in the project area. A secondary but relevant criterion was an informant's ability to read topographic maps. In the few instances where an informant had difficulty map-reading, the translator nevertheless was able to compile map data based on his knowledge of the resource region and the informant's descriptions.

Stopp conducted the informant interviews during the week of December 2-7, 2002, at the Innu Nation office in Sheshatshiu. Twelve people were interviewed - three of these informants were interviewed twice, resulting in a total of fifteen interviews (Table 1). The theoretical population of individuals from Sheshatshiu who have a history of land use and/or have participated in the Outpost Programme since 1982 within the project area, numbers 342 people. Many of these, however, are children and teenagers, or adults visiting the region for the first time. Armitage developed a priority list of informants from the total population that numbered seventeen individuals with a solid knowledge and history of land use in the project region. Thus, 71% of the key informants were interviewed for this project.

Informants consisted of both Innu with a lifetime of experience in the study area, and those with a few seasons of experience. The regions covered by the 2002 interviews include the lake regions of *Eskanat katshipukitinit*, *Kamishikamat*, *Iatuekupau*, *Mishtashini*, *Nekanakau* and *Uinikush* (see Map 4). The relevant, larger body of Innu Nation land use information available for this study covers an even broader region that extends from HappyValley-Goose Bay eastward to Sandwich Bay, and southwards along the *Pakua-shipu* (St. Augustine) and *Aissimeu-shipu* (St. Paul) watersheds.

Table 1: Summary Data on Informant Interviews

Age Range	Number	Gender
Age Range - 20 to 30 years	1	1 M.
Age Range - 31 to 40 years	2	2 M
Age Range - 41 to 50 years	2	2 M
Age Range - 51 to 60 years	4	4 M
Age Range - 61 and older	3	2M / 1F
Totals	12	12

The map biography method used in this supplementary work mirrored the approaches described previously in this report. Interview data were recorded using three methods:

- each interview was recorded onto 74-minute mini-diskettes using an “HHB Portadisc” digital recorder, a lavalier radio microphone, and an omni-directional microphone to ensure sound quality for subsequent translation. Interviews were, for the most part, in Innu-aimun, with questions posed in English and translated into Innu-aimun;
- salient points of each interview, such as descriptions of the locations placed on the topographic maps, were recorded by hand during each interview. This record became part of the interview summary, which was transcribed into WORD and WordPerfect format files. Full interviews have not been transcribed into Innu orthography, nor have they been fully translated into English due to time constraints and lack of availability of translators;
- all camps, resources areas, and travel routes, were mapped onto 1:50,000 NTS maps during the interviews.

3.2.4 Digitizing methods, data compilation, cartography

With respect to Stopp’s mapping work, the data recorded on the NTS map sheets were later transferred onto computer generated maps using Microsoft PowerPoint. Armitage subsequently extracted relevant information concerning Innu land use in the TLH Phase III area and combined it with the existing datasets derived from the aforementioned Innu Nation research.

Regarding the other spatial data considered in this report, Armitage digitized data from numerous map biographies between April 1996 and April 1998 for inclusion in an Innu Nation Geographic Information System (GIS) database. As noted previously, the biographies were prepared using NTS base maps at 1:250,000 and 1:50,000 scales (NAD 1927).

The GIS database is SPANS GIS Version 7.1 compliant and is managed with a programme called “CREATOR.” Written in Visual Basic by Scott Ennis, CREATOR is an interface for querying large quantities of landuse and environmental knowledge data stored in SPANS 7.1 GIS (vec/veh/tba) format. Once line, polygon and point data are digitized from the map biographies, CREATOR provides the means to efficiently query the digitized “layers” from multiple map biographies according to any combination of variables. For example, using CREATOR, one can easily generate new composite maps showing travel routes, camp locations, and/or harvest areas for one or more informants, for any consecutive period of time (Armitage and Ennis, 1998).

The universe for the SPANS database is a Lambert Azimuthal Equal Area Projection, ellipsoid GRS 1980.

Armitage used CREATOR to conduct specific queries of the total land use database. These included the following:

- all camp locations (primary and secondary) for the period 1969 to 1991, corresponding to the post-settlement period of land use;
- all harvest areas (polygons and vectors) for 1969 to 1991;
- all travel routes (vectors) for 1969 to 1991;
- cultural information such as birth, death and burial locations;
- important wildlife habitat and other areas comprising Innu environmental knowledge.

The results of these queries were processed as new layers within the SPANS GIS environment, and then exported to MAPINFO for analysis and cartographic presentation. The universe of this MAPINFO dataset is Universal Transverse Mercator, NAD 1927.

For the purpose of this report on the possible effects of TLH Phase III on Innu land use, we have not mapped data of a sensitive nature – in particular fishing locations and habitat. Burial locations presented are presented in a highly generalized manner at small scale so as to frustrate any attempts to find them on the ground.

4.0 Results – Contemporary Innu land use and occupancy in the TLH Phase III study area

4.1 Historic context

Current ethnohistoric, anthropological, linguistic, and archaeological research suggests that at the point of contact with Europeans, the Labrador Innu were part of a large group of Algonquian-speaking peoples whose territory covered much of the Quebec-Labrador peninsula, from the coast of Labrador in the east, to the Gulf of St. Lawrence in the south, James Bay in the west, and the barrens surrounding *Mushuau-shipu* (George River) in the north. Speaking related dialects of the same language, these widely dispersed groups maintained extensive trading and kinship relations across this territory. Despite the

extensiveness of kin and trading relations, however, the Innu were clustered into more closely related groups of people called “bands” each of which was associated with the watershed of a major river system, and each with access to caribou herds.²³ In the north, the barren-ground (*Mushuaunnuat*) Innu, were heavily dependent on the caribou that migrated back and forth across *Mushuau-shipu* (George River). In the south, various bands, also associated with watersheds, were known as the Michikamau, Petisikapau, St. Marguerite, Moisie, Mingan, Natashquan, Musquaro, St. Augustine, and North West River (Sheshatshiu) bands (so-named by American anthropologist, Frank Speck; Speck and Eiseley, 1942).

As the fur trade progressed, this band structure underwent many changes as the Innu travelled great distances to reach trading posts and missions that were situated along the coasts of the Labrador-Quebec peninsula (i.e., Ungava Bay, Quebec Côte-Nord, Labrador coast). One important change in band structure was that interior bands “broke up,” their members amalgamating with other bands. Hence, some members of the former Michikamau band situated at *Mishikamau* in central Labrador joined relatives in the Moisie band while others joined with relatives in the Sheshatshiu band. These changes did not stop the Innu from frequenting their customary territories, nor did they stop emigration to other bands for marriage and other reasons. Long-distance travel and family connections remained a hallmark of Innu society. The Innu Nation informant interview archive contains many examples of Innu who, prior to settlement, travelled between trading posts in Sept-Iles and Kuujuaq, Quebec, and Davis Inlet and Sheshatshiu in Labrador, hunting, fishing and trapping at various locations in between (e.g. *Mishikamau*).

As far as Sheshatshiu is concerned, Mailhot’s (1997) ethnohistorical research shows that the trading post at Sheshatshiu/North West River was visited by two distinct groups of Innu during the 19th century. It seems that these local groups comprised the North West River band that Speck included in his list of bands. One group,

Occupied the territory south of Lake Melville as far as the Gulf of St. Lawrence. The other was associated with the barren lands to the northwest, between Sheshatshit and Lake Michikamau.... In the post journal (Hudson’s Bay Company 1864-1910), the former are called ‘South side Indians’ and the latter ‘North side Indians’, ‘North side gang’ or ‘Grand Lake Indians’. We do not know how these groups were referred to in the Innu language (ibid.:41).

During the summer months, when they came out to trade and attend the mission, the “South side” Innu would establish camps at the mouths of *Mishta-shipu* (Churchill River) or *Tshenuamiau-shipu* (Kenamu River), the primary camp situated at *Mutnek* (Mud Lake) (ibid.:41). The descendants of the “South side” Innu are, today, the people associated with the Eagle River plateau – the Pasteen, Pashtitshi, Penashue, Pokue, and Pone families. Collectively, they are referred to as *Mashkuanunnuat* (Musquaro people) due to

²³ A great deal has been written on this topic, all of which is in the public domain. See Armitage (1990), Mailhot (1997), Leacock (1954), Speck and Eiseley (1942), and Tanner (1977).

the fact that in the late 1800s and early 1900s, their ancestors frequented the Catholic mission at Musquaro on the Quebec Lower Côte-Nord. While continuing to trade back and forth between Lake Melville and the Lower Côte-Nord, these people maintained close ties to the Innu in St. Augustine and La Romaine (Mailhot, 1997:45-46).²⁴

When heading into the country each year, the “South side” Innu took one of a number of routes to their fall hunting and trapping territories. Their principal routes followed the *Manatueu-shipiss* (Traverspine River) and *Tshenuamiau-shipu* (Kenamu River). An alternative route onto the plateau followed the *Akaneshau-shipu* (English River) on the south-eastern shore of *Atatshuinipek*^u (Lake Melville). *Manatueu-shipiss* (Traverspine River) took the Innu to *Minai-nipi* (Minipi Lake) from whence the Côte-Nord could be reached via *Natuakamiau-shipu* (Petit Mecatina River). *Tshenuamiau-shipu* (Kenamu River) was the main route for reaching the Eagle River plateau, with families moving upstream in relays, poling and paddling canoes loaded with hunting and trapping equipment, flour and other staples, tents, stoves and personal belongings. Informant interviews tell us that the journey upstream against the current was arduous and took several weeks in late summer.

The first way to reach the Eagle River plateau from the *Tshenuamiau-shipu* (Kenamu River) valley was to follow *Mitshuap-shipiss* (a river approximately 50 km from the mouth of the Kenamu) eastward to *Kaitu-kupitak*, and henceforth to *Enakapeshakamau*, *Mishta-utshashk*^u, and *Iatuekupau* (Park Lake). The second way was to follow *Utshashumeku-shipiss* (the Salmon River) east to *Unikush* and the *Mishtashini-Nekanakau* complex of lakes, or alternatively to branch off to the southeast from *Utshashumeku-shipiss* to *Tshishkuepeu-shipiss* (Little Drunken River) and from there to *Mishtashini* and other lakes.

An important late-summer camp on this journey, situated at the confluence of *Tshenuamiau-shipu* (Kenamu River) and *Utshashumeku-shipiss* (Salmon River), served as a staging area for winter camping in the plateau region - salmon were caught and dried here, moccasins and snowshoes were prepared for winter, and warm-season gear was left in storage for recovery in springtime. Archaeological evidence has shown that the ancestors of the Innu came to this camp location at least 2,500 years ago, when it may also have served as a mid-journey waypoint and winter preparation camp (IELP, 2002, Stopp, 2002a).

While living on the Eagle River plateau, the Innu would meet up with relatives from St. Augustine, and they would sometimes descend *Aissimeu-shipiss* (St. Paul River) or *Pakua-shipu* (St. Augustine River) to trade on the coast or to travel to Musquaro. On the plateau they would trap various fur bearing animals, fish salmon and other species, and in the winter hunt caribou. Small game such as snowshoe hare, partridge, and porcupine was harvested to complement the menu of caribou, fish and migratory waterfowl.

²⁴ It is important to note that these Innu were not confined to the area south of Lake Melville. The nature of Innu land tenure is such that they could harvest in other parts of the territory using their kinship relations with people living there. Hence, members of the *Mashkuanunnuat* group sometimes hunted and trapped in the Goose River and Naskaupi River areas.

Attended by mid-wives, many Innu women gave birth at various locations on the plateau, while the sick and elderly passed away and were buried at principal lakes such as *Iatuekupau* and *Nekanakau* (see Map 6). Occasionally, during the winter, the men would travel to *Nutapinuant* (Cartwright) or *Uinuut* (Rigolet) for supplies. At Christmas, families would gather at the posts at Sheshatshiu/North West River or St. Augustine and then return to *Akamiuapishk*²⁵ (Mealy Mountains) to hunt caribou and trap once again as spring approached.

The travel routes used by the Innu on the Eagle River plateau prior to the settlement period are shown on Map 2. These routes are from the LAMAP data set which includes the lengthy period of land use from 1980 as far back as the memory of the informants would permit. The LAMAP data present a reasonable picture of travel routes up until the settlement period in the 1960s. Other land use data (e.g. Tanner, 1977; Sakauye, et al., 1979) indicate that many of these routes were abandoned after settlement, a point we return to below.

4.2 Contemporary land use

With settlement, a major shift in Innu land use took place as housing was built, children were sent to school, and the Newfoundland government looked for ways to involve the Innu in wage employment (see Armitage, 1990:5-15). In 1976, several of Tanner's (1977) informants from the *Akamiuapishk*²⁵ (Mealy Mountains) area described what happened at this time:

During this period, the requirement to send children to school caused most of the women to stay at North West River with their children, and the men did not hunt and trap as far away from the settlement as they had in the past. Even the pattern of spending the summer in camps near Hamilton Inlet began to come to an end during this period because the people had to look after their houses and property at North West River. The men continued to trap and hunt at a reduced rate, using areas by then abandoned by White trappers, such as the Kenamu and the Traverspine rivers, and other areas, such as Kenamich River, Carter Basin, and the Mealy Mountains.²⁵

Starting in 1973, several families began to use the area south of the Mealy Mountains again, flying inland to spend several winter months there. These activities have been centred on two areas that had formerly been intensively used, *Iatuekupau* (Park Lake) and an area of lakes around *Mishtashini* Lake. They

²⁵ We have written these place names in standard orthography. While the text here refers to using areas "abandoned by White trappers," it would be more accurate to describe this as a reoccupation of areas previously used by the Innu. In 1976, Tanner interviewed the late Mishen Pasteen and Matiu Penashue who told him that from 1900 to 1930 "there was an influx of Whites into the Kenamu River area, first trappers, then woodcutters, who enlarged the communities at Mud Lake and Traverspine" (Tanner, 1977:75).

Map 2. Historic Innu travel routes in the TLH Phase III study area

found that several of the lakes in these two areas were heavily used by sports fishermen who reached them by aircraft (Tanner, 1977:77).

The use of aircraft to reach interior lakes was made possible by the Outpost Programme (*Kakushpinanut* Programme) run by the Sheshatshiu Innu Band Council (SIBC) that we discussed in the methods section above. This programme has provided a vital lifeline between the village with all its troubles and western influences and the country where Innu traditions could be practiced. However, even with the programme, the geographic extent of Innu land use never returned to what it was in pre-settlement times.

Today, Innu no longer access the plateau by way of *Akaneshau-shipu* (English River), nor do they travel to *Nutapinuant* (Cartwright) or *Uinuat* (Rigolet) for supplies, nor do they travel by canoe and snowshoe to St. Augustine and Musquaro to trade and attend the mission. However, for the “South side” Innu, their hub of activity continues to be the same as in the pre-settlement period. This hub is centred on the matrix of lakes at the headwaters of *Nutapinuant-shipu* (Eagle River) and its tributaries that includes *Enakapeshakamau*, *Eshkanat katshipukutiniht*, *Kamishikamat*, *Iatuekupau*, *Mashku-nipi*, *Mishtashini*, *Nekanakau*, *Pepauakamau*, *Tshishkuepeu-nipi*, and *Uapanatsheu-nipi*. This is the core land use area for the “South side” Innu (Map 3).

To place this area in a wider context of land use by Sheshatshiu Innu, there are two other core areas in the territory (see Mailhot, 1997:157). The first is bounded by the *Uinnukapau* (Winnokapau Lake) in the south, the Smallwood Reservoir (formerly *Mishikamau*) in the west, and *Atshuku-nipi* (Seal Lake) in the north, and *Nipishish* (Nipishish Lake) in the east. The second is centred on three lakes – *Ashuapamatikuan* (Shipiskan Lake), *Ashtunekamuk^u* (Snegamook Lake) and *Shapeiau* (Shapio Lake), a border area between the Sheshatshiu and Barren-ground bands. Recent changes in land use, where Innu harvest along the TLH and secondary roads between Goose Bay and western Labrador, supplement land use in these core areas, and are discussed in the effects assessment section below.

We have relied on two types of data in our consideration of contemporary land use in the TLH Phase III project area. The first is the SIBC Outpost Programme records that provide the names of the lakes where base camps were established and the names of the people who occupied each camp. The records do not indicate the precise location of the base camps. The other dataset includes the composite travel routes, harvest areas, camp locations, and wildlife habitat information collected by Sakauye, et al. (1979), Armitage (1989, 1991, 1996), Stopp (2002a), and Stopp and Armitage (2003) through the use of the map biography technique.

[Map 3. Innu camp locations post-1969](#)

The locations of lakes where Innu established base camps since 1982, according to the SIBC Outpost Programme records, are shown on Map 4. Table 2 lists the dates during the fall and spring since 1982 when Innu established camps at these lakes, according to the same records. The Outpost Programme records indicate that the lakes where the Innu most frequently establish camps in the TLH study area during the last 20 years are *Mishtashini* and *Iatuekupau*, followed by *Mutnek*, *Uapanatsheu-nipi*, and *Enakapeshakamau* (see Table 3). Camps were established on the remainder of the lakes only sporadically during this period.

In total, we estimate that base camps were established in the study area 60-62 times between 1982 and 2002. In total, 680 Innu people spent at least one season (6 to 12 weeks) at a bush camp during this period, a sizeable portion of Sheshatshiu's population which is currently about 1,500 people. This figure does not include all of the occupants of the *Amishku-shipiss* camp, where Innu from Sheshatshiu have joined relatives from St. Augustine on two occasions.

The base camps were established on lakes large enough to allow float- and ski-equipped aircraft to land and take off. Occasionally, base camps would be moved during a season if the underlying ground became too wet, or if greater proximity to wildlife resources was desired. Two to eight tents were set up on the north or south sides of lakes in locations that made possible a commanding view of the lake, where swimming muskrat, waterfowl, and even caribou could be spotted (see Armitage, 1990:47).

Secondary or satellite camps on the other hand were established in the context of hunting, fishing, or trapping trips away from the primary camps so that distant beaver lodges and other wildlife "hotspots" could be accessed. In general, such camps were established for a short duration – one to three days depending on the nature of the harvesting activity, weather conditions and other factors.

A slightly different picture of where camps are established is presented in Map 4 based on georeferenced data from map biographies. This map shows more accurately the location of primary and secondary camps, but only those occupied by people who were interviewed. Camps established by people who were not in the interview sample (e.g. at *Amishku-shipiss*) are not captured in this dataset.

Contemporary harvesting locations and travel routes in relation to these camps are shown in Map 5. The harvest areas, which are both the polygons and lines on the map, depict the places where Innu searched for game as well as where they actually harvested it. Caribou, black bear, beaver, martin, mink, weasel, lynx, wolf, porcupine, snowshoe hare, spruce grouse, willow ptarmigan, migratory waterfowl and fish have been harvested at various locations in these areas since 1982.

Of all the species harvested over the years by the Innu on the Eagle River plateau, caribou are by far the most important. Although the number of animals killed in recent years has dropped considerably due to a sharp decline in the size of the *Akamiauapishk^u* (Mealy Mountains) herd and the need for strict conservation measures, caribou continue

[Map 4. Lakes where Innu camps were located, 1982-2002](#)

Table 2. Location of Innu camps in the TLH project study area, 1982-2002 (combined fall and spring), under the SIBC Outpost Programme

Camp locations (spring-fall)	spring	fall	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Amishku-shipiss	■																		■		■		
Enakapeshakamau	■	■																					■
		■			■	■	■																
Eshkanat katshipukutiniht	■																■			■			
		■																					
Iatuekupau	■		■*			■	■			■	■	■		■		■	■	■	■				
		■	■*			■																	
Kaitu-kupitak	■																						
		■												■									
Kamishikamat**	■																						
		■								■													
Mashku-nipi**	■				■																		
		■																					
Mishta-utshashk ^u	■																						
		■			■																		
Mishtashini	■		■		■			■	■	■						■	■				■		■
		■		■			■	■	■														
Mush-nipi	■																						
		■						■						■									
Mutnek	■				■									■		■	■			■			
		■		■		■	■																
Nekanakau	■								■					■									
		■																					
Pepauakamau	■													■			■	■					
		■																					
Tshishkuepeu-nipi	■																						
		■								■													
Uapanatsheu-nipi	■							■	■		■	■				■					■		
		■																					
Uinikush	■																						
		■		■										■									

* Unsure of the season, could have been the spring or fall. ** There are two lakes known as *Kamishikamat* in the Eagle River plateau area. However, the older name for the more southerly one is *Mashku-nipi*.

Table 3. Number of camps at each location, spring and fall, 1982-2002, under the SIBC Outpost Programme

Camp location	Number of camps (spring)	Number of camps (fall)	Total number of camps (spring & fall)
<i>Amishku-shipiss</i>	2		2
<i>Enakapeshakamau</i>	1	3	4
<i>Eshkanat katshipukutiniht</i>	2		2
<i>Iatuekupau</i>	1-2	10-11	12-13
<i>Kaitu-kupitak</i>		1	1
<i>Kamishikamat</i>		1	1
<i>Mashku-nipi**</i>	1		1
<i>Mishta-utshashku</i>		1	1
<i>Mishtashini</i>	9	4	13
<i>Mush-nipi</i>		2	2
<i>Mutnek</i>	5	3	8
<i>Nekanakau</i>	2		2
<i>Pepauakamau</i>	3		3
<i>Tshishkuepeu-nipi</i>		1	1
<i>Uapanatsheu-nipi</i>	6		6
<i>Unikush</i>		2	2
TOTAL	32-33	28-29	60-62

to hold great symbolic importance for the Innu. Caribou meat has been a staple in the Innu diet since time immemorial, and men could acquire great prestige by being good caribou hunters. In the pantheon of animal masters in Innu religion, the master of caribou known as *Papakashtshihk*^u (aka *Kanipinikassikueu* or *Katipinimitautsh*), is the most powerful (Armitage, 1992). The ritual feast, *makushan*, cannot be held without caribou meat and bone marrow. Directed by a senior male or female (*utshimau-ushkun*), the feast is a ritual way for the Innu to reconfirm their interdependence with one another as well as their relationship with the caribou master (Henriksen, 1977:8). Many *makushan* have been held over the years at *Iatuekupau*, *Mishtashini* and other locations on the Eagle River plateau.

Not captured in the land use maps and the Outpost Programme data considered in this report is any number of ongoing, itinerant, community-based land use activities in the TLH study area. Here are some examples of recent travel and harvesting activities on the Eagle River plateau, all involving people reaching the area by snowmobile:

Map 5. Travel routes and harvest areas post-1969

- Informant 1 has been to the *Akamiuapishk*["] area on snowmobile five times in the past five years. His trips lasted from three days to one week. The last time was in March, 2002. He went with three other people to *Iatuekupau* and some lakes just north of it to hunt and fish;
- Informant 2 has travelled to the area by snowmobile three times during the past five years. He stayed three days to one week. The last trip was in 2001 when he travelled with two other people to *Iatuekupau* to hunt and fish;
- Informant 3 has travelled to *Iatuekupau* by snowmobile three times in the last five years to hunt partridge, snowshoe hare, and porcupine and fish. His trips were of short duration, that is, approximately three days;
- Informant 4 went to the *Akamiuapishk*["] area by snowmobile three times during the last five years. The most recent trips were in 1999 and 2002. He visited *Iatuekupau* with two other people on trips lasting 2-3 days;
- Informant 5 has travelled by snowmobile to the area five times in the last five years, once each year. He visited *Iatuekupau* to hunt and fish with three other people on trips lasting approximately three days;
- Informant 6 has been in the *Akamiuapishk*["] area by snowmobile five times in the past five years, the last time being March 2002. He has gone hunting and fishing at *Iatuekupau*, *Kaitu-kupitak*, *Enakapeshakamau* and *Mishta-utshashk*["] on trips lasting approximately three days.

Itinerant trips of this nature cover a large area on snowmobile yet for a relatively short period of time when compared to travel associated with Outpost Programme camps (cf. Stopp, 2002b). These short-term trips appear to involve a small number of people in Sheshatshiu, meaning that the most important land use in the *Akamiuapishk*["] (Mealy Mountains) area occurs in the context of the SIBC's Outpost Programme. Camps at *Mutnek* (Mud Lake) may be an exception to this in that they are much more accessible to the Sheshatshiu Innu by way of boat and snowmobile, both from the village and Happy Valley-Goose Bay.

In terms of gender and age, the Outpost Programme provides an opportunity for women, children and elders to participate in country activities, whereas itinerant hunting and fishing trips, particularly when they are distant from the village, are almost entirely the domain of vigorous younger men. Reaching the plateau area on snowmobile can be very difficult as there are only a couple of access points near *Atatshuinipek*["] (Lake Melville), and these can be very arduous depending on snow conditions and whether the brooks are flooding. It is this difficulty of access that has restricted snowmobile travel to the area by

all but the most adventuresome residents of both Cartwright and Happy Valley-Goose Bay.²⁶

4.3 Innu land occupancy

In the methods section of this report, we provided a lengthy definition of the rich bundle of cultural components included under the umbrella term “occupancy.” This includes land tenure and non-economic behaviour and belief, that is, all the beliefs, practices and cultural processes associated with living on the land.

Land tenure refers to the way that people regulate their social relations with one another with respect to the land and its resources; the social rules that determine who lives where, who has access to which resources in a given territory. Much has been written about Innu land tenure elsewhere (see Mailhot, 1997; Armitage, 1990; Tanner, 1977), and there is no need to repeat any more than the pertinent details as they relate to the TLH Phase III project area. The salient feature of Innu land tenure, which Mailhot calls “structural mobility,” is that Innu access to different parts of the territory is determined in large measure by kinship. Certain families are affiliated with certain parts of the territory, a point we made above when talking about Innu bands and the “South side” Innu. While Innu are in theory able to travel and hunt anywhere they please throughout the territory, in practice, they have camped and harvested in areas that they were already intimately familiar with, or else in areas where they had kinship relations with the residents. This makes complete sense when one considers the requirements of hunting peoples. Intimate knowledge of geography, climate, plant, animal, and fish resources in an area is absolutely essential if one is to survive in a territory that at times can be extremely difficult. That Innu have lived in this territory since time immemorial is a testament to their country skills, their knowledge of the land and its natural resources, and various techniques for wresting a living from it.

What facilitates movement outside of one’s familiar territory is the fact that one has kinship relations with people resident elsewhere who have an intimate knowledge of the land and its resources there. Over time, if one has a large network of kin relations throughout the territory, one can acquire a wide repertoire of land use experiences and the knowledge that goes with this. In the past, the bilateral kinship system of the Innu provided a safety net, whereby if wildlife and fish resources were in short supply in one part of the territory, Innu could move in with relatives somewhere else where resources were more plentiful. Similarly, kinship could be relied upon to switch territories in the event of the death of a spouse and other close family members.

In Sheshatshiu, there are a few older people who have this extensive repertoire of land use, and some of them include the *Akamuiapishk* (Mealy Mountains) region in it. However, the majority of families have a relatively restricted repertoire of harvesting

²⁶ Land use by residents of Happy Valley-Goose Bay appears to have expanded east along the south shore of *Atatshuinipek* (Lake Melville) in recent years. Cabins have been built along the shore, and convoys of ice-fishing snowmobilers are commonly sighted at the mouth of *Tshenuamiu-shipu* (Kenamu River) during the winter.

locations, and this applies to the aforementioned families – the Pasteens, Penashues, Pokues, Pones and Pashtishis – who have been long been associated with *Akamiuapishk*²⁷. While the TLH between Goose Bay and western Labrador has resulted in some changes to this pattern of land use, by giving the “South side” Innu access to new territory without having to bother with kinship relations, these Innu would be seriously disadvantaged if they were dislocated from the *Akamiuapishk* area. They lack environmental knowledge of the other core regions in the Sheshatshiu territory, they have little if any historical ties, no close relatives born or buried in other regions, few emotional attachments, and know few place names in such areas. Thus, proposed projects such as the TLH Phase III can have differential effects on the people of Sheshatshiu in that they may affect one subgroup in the village more than any other.

With respect to the many other components of Innu occupancy, we provide only a sample, recognizing that a detailed presentation on the topic is beyond the scope of this report. Let us start by attempting to show how the country (what the Innu refer to as *nutshimit*), and the *Akamiuapishk* (Mealy Mountains) area in particular, are important to Innu people in Sheshatshiu.

In general, many Innu in the village continue to “construct” their worlds in terms of two, polar opposites, the village on the one hand and *nutshimit* on the other. These are the “two worlds of the Innu” as presented in the 1994 BBC documentary (BBC-2, 1994).²⁷ The village is seen as a place of domination by Euro-Canadian institutions and mass-American culture (Armitage, 1990:13-15; see also Henriksen, 1973), of family dysfunction, alcoholism and gas-sniffing, squabbling between and within families, and break-down in sharing and the transmission of Innu traditions to younger generations. The country, on the other hand, is a place of contentment and productivity, of communion with a beautiful land and history, a place where people can regain their mental and physical health, and learn much from their elders.

While many Innu today reject this rather stark contrast between the “two worlds,” especially the view that the community is nothing more than a “concentration camp,” many Sheshatshiu Innu continue to retain firm attachments to the country and their hunting-based culture. Their reasons for maintaining these attachments range from the simple to the complex. And, while some might accuse the Innu of being overly romantic or nostalgic about their life on the land, we must remember that romantic constructs of identity and culture are indeed real, and that people act on the basis of such constructs. They provide the cultural scaffolding upon which perceptions about the effects of projects like the proposed TLH develop, and upon which people make decisions about future land use in relation to the real and perceived effects of the development. Some useful examples of Innu discourse about the country can be found in two publications that resulted from community consultations in the early 1990s – one following the tragic deaths of six children in a house fire in Davis Inlet (Fouillard, 1995),

²⁷ The term “construct” comes from a theoretical framework in the social sciences dealing with “social construction,” where beliefs in the value of *nutshimit* would be seen as “products of a process of collective definition instead of existing independently as a set of objective social arrangements with an intrinsic makeup” (Blumer, 1971:298; see also Garfinkel [1967] regarding phenomenology and ethnomethodology).

the other sponsored by the Royal Commission on Aboriginal Affairs (Fouillard, 1993). These examples help to illustrate Innu beliefs concerning the value to country-living – the independence, self-worth, good health, and grounding in culture and history they experience there.

The sense of independence

“There is a lot of freedom and happiness in *nutshimit* – the beauty of nature, sharing and communication. I also see how the elders and young children develop a special bond together” (Fouillard, 1993:68).

“There are many good things about going to *nutshimit*. It is like we are going home when we go to the country. People go to get away from the white man’s world” (ibid.:64).

“When we are in *nutshimit* some of us say we become more aware that we are the caretakers of the land and have to look after the animals. In *nutshimit*, we don’t have to follow the laws of the governments... It strengthens our spiritual beliefs... We are more environmentally alert” (Fouillard, 1995.:155).

Intergenerational transmission of knowledge and values

“Children do not get influenced by TV, movies and videos in *nutshimit*. They only learn about families, history, the land and nature, the animals and so on” (Fouillard, 1993:66).

“I think *nutshimit* is nice to live in and to listen to the elders’ stories about what they saw long ago” (ibid.:68).

“Our children learn from their parents and grandparents in *nutshimit*. The kids look at their mothers and fathers as their role models. Children learn how to carry the canoe, how to build things, how to make things like moccasins and snowshoes, how to hunt...” (Fouillard, 1995:156)

Sense of community – *communitas*

“People are much closer in the country, especially when we are in small groups of three or four families. There is a lot of sharing in the country. And there is a lot of laughter as well” (Fouillard, 1993:69).

“Families are together and close when they are in *nutshimit*; everyone pitches in and helps out. It is a sober environment. We go to sleep early and wake up early but well rested for the next day (Fouillard, 1995:156).

“ In camps, we go often to each other’s tents and visit. In the community we don’t see each other as much. That is sad... In the country we get to know each other. We open up more to each other about our different emotions. And there is a lot of laughter. People feel safe and feel good about themselves, who they really are as Innu” (Fouillard, 1993:69).

Sense of place and history

“When we are in *nutshimit* we see many old Innu camps. This keeps us in touch with our past. There is so much to discover. We see old sticks where people had their tents, but they are rotten now. We might find a shoe and try to imagine if it is maybe fifty years old and who the family was that camped there. We wonder if the camp was built in the summer or fall, if they killed caribou and so on” (Fouillard, 1995:157).

Spirituality

“My grandfather Uatshitshish (Sylvester Pokue) was talking to my older brother Antuan. He said you can’t practise Innu religion in the community. You have to be in *nutshimit*. You depend on the animal masters out there. It won’t fly in the community. It’s in the country you get dreams I don’t have those dreams any more because I am in the community. You can make canoes and snowshoes in the community, but can’t practise our spirituality. Now we just live day by day by day. In *nutshimit*, it was different because we used to have dreams about what we would get by hunting. Spirituality is the most important part of the culture. We have to believe in it to exist” (Fouillard, 1993:92).

Health

“People get a lot of exercise in *nutshimit* and that is good. The exercise keeps people healthy, like when people go walking for hunting....And people are more healthy because of the food that we eat out in *nutshimit*” (Fouillard, 1993:66).

“Some people ask to go to the country to hunt and fish. They say that is their way of healing, when they go out on the barrens....The culture in *nutshimit* is healing....Culture is part of healing” (Fouillard, 1995:147).



Pien Penashue overlooking *Enakapeshakamau* (photo Nigel Markham)



Innu camp at *Iatuekupau* (photo Daniel Ashini)



Innu children playing at *Enakapeshakamau* (photo Nigel Markham)

“In *nutshimit*, our Innu life still rotates around hard work and hunting for food. We don’t have social services out there, but we go out hunting. We want to go where the caribou is roaming, where it is plentiful. One of the good things about *nutshimit* are the challenges we face out there....In the country, there is always the challenge of finding wildlife, of figuring out where it is, of having to do things like going through rapids. This motivates people to find the food necessary for their families. We hunt for goose, caribou, partridge and so on. We take pride in what the hunters get when they come back from a trek. We work hard in others ways too, like getting wood” (Fouillard, 1993:66).

History comes alive for many Innu people when they are in the country. Their parents and grandparents tell them stories about the land, point out places where humorous events transpired or where wildlife and fish are abundant. Birth places and grave sites are mentioned. The remains of old camps, tree stumps, blaze marks and old portage trails are encountered – all of which speak to history on the land. Map 6 shows the approximate locations of birth, death and grave sites of Innu people in the *Akamiuapishk*^u (Mealy Mountains) area.

Ritual also comes alive in the country. *Makushan* is held and people practice respect for the animal masters by placing goose wings, bear skulls and other animal remains in trees or on scaffolds.

The sense of belonging to the *Akamiuapishk*^u (Mealy Mountain) area is especially strong in the Pasteen, Penashue, Pokue, Pone and Pashtitshi families who have a long historical association with this territory as explained above. This sense of belonging is part and parcel of the strong Innu conviction that they are the rightful owners of their ancestral lands throughout the Quebec-Labrador peninsula, and helps to explain why sports fishing camps and other developments in the *Akamiuapishk*^u (Mealy Mountains) area have been strongly resented and opposed in the past.

The prominent place of the *Akamiuapishk*^u area in the identities of these families is captured in a 1996 song by the popular Innu band, Meshikamau, which includes two young Penashue men who spent considerable time in the *Akamiuapishk*^u (Mealy Mountains) area when they were younger, hunting, trapping and fishing. Here are the lyrics of “*Tshiuauiten Kamiuapisku* – You talk about the Mealy Mountains.”

You, dad, who have always hunted. You always talk about being prevented from going...from going there, and that you miss the area when you look at it. The amount of land you own in the Mealy Mountains area, and we understand what you are telling us.

The amount of land you own in the Mealy Mountains area, and we understand what you are telling us.

That's where we were born.²⁸

²⁸ Thanks to Daniel Ashini for translating the lyrics into English. “Being prevented from going...” refers to restrictions on hunting caribou in the area (Daniel Ashini, personal communication).

Map 6. Locations of deaths, graves and birth places in the
TLH Phase III project area



Jean-Pierre Ashini at *Mishtashini* with a stone pestle found at the campsite (photo Innu Nation)



Lizette Penashue lacing snowshoes at *Enakapeshakamau* (photo Nigel Markham)



Jack Penashue by the trail from *Mishta-massek*^u to the plateau (photo Peter Armitage)



Max Penashue with two porcupines harvested in the *Akamiuapishk*^u area (photo Peter Armitage)

4.3.1 Place names

Naming places demonstrates human presence because where humans walk, they also name the geographic features they encounter along the way. Naming places is an act of possession, which is why newcomers to a territory are quick to rename features with pre-existing indigenous names. Place names are not only instruments for the communication of information about the land and its resources, they are also an important means by which hunting peoples navigate across a landscape. “The Innu discuss with each other in detail their experiences hunting, trapping, fishing, and gathering in the bush, and the toponyms aid in this, as the terms often encode description information about the regions and their importance of harvesting or travel activities” (Tanner and Armitage, 1986:40). As Table 4 illustrates, Innu place names in the *Akamiauapishk*^u (Mealy Mountains) area show this propensity for describing places in terms of their physical characteristics or resources (e.g. *Iatuekupau* refers to a row of willows around the lake, Mailhot, 1995:100).

Place names do more than record geographic and resource information. They also record a variety of cultural information, sometimes mythical in nature. Throughout the Labrador Innu territory, we find place names referring to the people buried there, canoe-making sites, places where shamans encountered evil creatures, and where mythical beings reside. *Uapanatsheu-nipi*, “sneaking creature lake,” is an example of one such place name in the *Akamiauapishk*^u (Mealy Mountains) area. Some Innu place names are of relatively recent origin reflecting the fact that Innu toponymy, like Euro-Canadian, is flexible. Other place names suggest considerable age. For example, the name *Tshenuamiau-shipu* (Kenamu River) appears as *tinoamyou* on the 1748 French map by Louis Fornel (Mailhot, 1995:105; 1997:12). The name, Sheshatshiu, also dates to this period, if not long before. In the mid-1700s, the French called the trading post at North West River, across from Sheshatshiu, “l’établissement de Kissessakiou” (Mailhot, 1997:12). Sheshatshiu is a modern-day contraction of this word, *Kishe-shakiau*, “Great Outlet,” which Mailhot believes the Innu once used to apply to all of Lake Melville (ibid.:2-3).

Table 4. Some Innu place names on the Eagle River plateau²⁹

Innu name	English name	Translation
<i>Akamiuapishk^u</i>	Mealy Mountains	White mountain across
<i>Akaneshau-shipu</i>	English River	English river
<i>Amatshuatakan-shipiss</i>		Ascending trail brook
<i>Enakapeshakamau</i>	“Pants Lake”*	Pants lake – shaped like pants
<i>Eshkanat katshipukutiniht</i>		Where hanging antlers block the way
<i>Iatuekupau</i>	“Park Lake”*	Row of willows
<i>Iku-shipiss</i>		Louse brook
<i>Kamishikamat</i>		Big lake
<i>Kanutaikant</i>		Shooting-in-the-air place
<i>Kaupashit</i>		Small neck place
<i>Mashku-nipi</i> ***		Bear lake
<i>Mishta-masseku</i>		Big marsh
<i>Mishtashini</i>	“Rocky Pond”*	Big rock
<i>Misht-utshashku</i>		Giant muskrat
<i>Mitshishutshishtun</i>		Eagle’s nest
<i>Nekanakau</i>	“1155”*	Sandy island
<i>Pepauakamau</i>	Crooks Lake	?
<i>Pishiu-nipi</i>		Lynx lake
<i>Tshenuamiu-shipu</i>	Kenamu River	Long river**
<i>Tshishkuepeu-shipiss</i>		Silly drinking brook
<i>Uapanatsheu-nipi</i>	“Noname Lake”*	Sneaking creature lake
<i>Unikush</i>	“Banana Lake”*	2 possible meanings – sleepwalking or tonsils?
<i>Ukaumau-nipi</i>		Mother lake

* not official place names

** translation provided by Pien Penashue, October 2002.

*** source, Greg Penashue, personal communication. This lake is often referred to as *Kamishikamat*, but another *Kamishikamat* exists a short distance to the north.

4.3.2 Environmental knowledge

An important aspect of occupancy is environmental knowledge. With the exception of pilot study on migratory waterfowl conducted for the Canadian Wildlife Service, such knowledge was acquired only incidentally in the case of other Innu Nation land use studies. We present a summary of some of the environmental knowledge recorded for the *Akamiuapishk^u* (Mealy Mountains) area by Tanner in his 1977 land use study for the Innu Nation in Appendix B. While the supplementary fieldwork conducted by Stopp in the fall of 2002 obtained additional environmental knowledge information, the aggregate data considered in this report do not capture what we believe is a far greater breadth of

²⁹ Most of these place names are taken from Mailhot (1995). It is important to know that much of the Innu place name work is incomplete. More research is required to finalize spellings, meanings and precise locations.

knowledge for the area. For example, Armitage (2001:21) collected data on otter slides and resting areas known as *utamiatshuk* in the context of research related to the designation of a “safety template” around the *Minai-nipi* (Minipi Lake) bombing range. However, in the area of the proposed TLH Phase III, informants have identified locations where they harvested otter, but we have not obtained information on the locations of *utamiatshuk*. It would be extremely surprising if the Innu did not know of such places in the vicinity of the proposed highway given their encounters with otter there, and the fact that such places have been identified a relatively short distance to the west at *Minai-nipi* (Minipi Lake). Similarly, the nests of goldeneye ducks (which nest near the water’s edge) were identified in the *Minai-nipi* (Minipi Lake) research, but none were identified for the TLH study area even though goldeneyes were seen there. The absence of data of this nature for the study area constitute data gaps.

For the purpose of this environmental assessment, we have extracted spatial data from the Innu Nation’s GIS database relating to habitat for a variety of species including caribou, migratory waterfowl, beavers, porcupine, and fish. However, with the exception of salmon-bearing waterbodies, no cartographic data concerning fish are presented in this report due to the sensitive nature of Innu fishing locations.³⁰ It is true to say, nonetheless, that many of the lakes used by the Innu today, that are proximate to the proposed TLH Phase III, are well known for their abundance of salmon and trout, which is why several fishing lodges have been built there over the years. Environmental knowledge data from the Innu Nation database were supplemented with additional information from Stopp’s supplementary fieldwork during the fall, 2002 (Stopp and Armitage, 2002).

4.3.2.1 Waterfowl

Innu informants identified extensive areas at *Iatuekupau*, *Nekanakau*, *Mashku-nipi*, *Mishtashini*, *Pepauakamau*, and *Eshkanat katshipukutiniht* that are important habitat for migratory waterfowl. Map 7 shows the areas where a variety of species have been encountered in the post-settlement period. Nesting areas are also depicted on this map. Waterfowl species observed and/or harvested by the Innu in this area include Canada geese, American black duck, scoters, common loon, red-throated loon, common pintail, goldeneye duck, gulls, harlequin duck, oldsquaw duck, red-breasted merganser, and scaup.

One of the reasons the Innu return repeatedly to the Eagle River plateau in the spring is its abundance of migratory waterfowl. Many of the species just mentioned stage through the area in the spring, and many stay to breed and moult. Upon arrival in the spring, waterfowl search out areas of open water which the Innu call *ashkui*.³¹ *Ashkui* constitute

³⁰ The release of geo-coded information concerning fish could lead to immediate over-exploitation of prime fishing areas with the opening of the highway.

³¹ As Fletcher and Breeze (2002:2) note, *ashkui* “are known to be productive areas that attract a variety of birds, fish and mammals, particularly in the spring. Additionally, a significant part of the Innu definition of *ashkui* is the element of danger. *Ashkui* are viewed as dangerous by participants in our research, and especially dangerous for children.”

Map 7. Innu environmental knowledge – waterfowl habitat

extremely important habitat in the spring; they are magnets for waterfowl, and it is not surprising, therefore, that the Innu frequently establish their camps in close proximity to them. In pointing to some *ashkui* at *Iatuekupau*, one of Stopp's informants said,

These areas were open before others, by early to mid-April, and ice-fishing was done at their edges. We did not fish in the open water because the ice edge was too dangerous. There are always camps in this area because of the open water, and it's a good place to get geese and ducks. These spring, open-water areas are known all through the region by the Innu, who choose to camp near them because of the early appearance of ducks and geese (Stopp and Armitage, 2002: interview, SP, 3 December 2002).

We note here that the Innu fish at *ashkui* as well as hunt waterfowl. Even before they open-up in the spring, *ashkui* may be good places to fish because the ice is thin there.

In the country, the Innu identify two types of *ashkui* – those that freeze over in the winter and re-open in the spring, and those that remain open all year (where there is fast-moving water) (Fletcher and Breeze, 2002:3). Important *ashkui* near the TLH Phase III were identified at *Pepauakamau*, *Mishtashini*, *Mashku-nipi*, *Nekanakau* and *Iatuekupau*. In the spring, these *ashkui* are accessible by snowmobile. Informants rated these open-water areas in terms of the abundance of waterfowl that staged on them, described which did not freeze over and their patterns of enlargement as spring progressed. They also described the temporal sequence of waterfowl that came to them (e.g. Canada geese first, followed by black duck, with loons at the very last).

4.3.2.2 Caribou

We mentioned previously that the geographic extent of Sheshatshiu Innu land use has contracted in the post-settlement period in certain respects. While they may nowadays use the TLH to travel to Esker to hunt caribou, Innu no longer travel to *Nutapinuant* (Cartwright) or *Uinuut* (Rigolet) in the winter to trade furs for supplies of flour, sugar, tea and other staples. This change in land use has implications as far as Innu environmental knowledge is concerned. Such knowledge is predicated in large measure upon the Innu actually being physically present in a territory in order to observe wildlife and other ecosystem components. In the pre-settlement period, when Sheshatshiu Innu used to trade on the coast of Labrador and used the *Akaneshau-shipu* (English River) to reach *Iatuekupau* and other lakes on the Eagle River plateau, they had far greater contact with caribou from the *Akamiuapishk^u* (Mealy Mountains) herd. They were able to learn as a result where the caribou calved, and where they were most likely to encounter them in the winter when they were needed for meat, clothing and sinew.

Given the current extent of land use in the *Akamiuapishk^u* (Mealy Mountains) area, we do not expect Innu to have much to say about current calving grounds. They do have something to say, however, about where the caribou used to calve. This knowledge is captured in Map 8 which shows historic (i.e. pre-settlement) calving grounds for the

Map 8. Innu environmental knowledge – caribou habitat

*Akamiuapishk*³² (Mealy Mountains) caribou. A major calving ground for the herd was located in the headwaters of *Akaneshau-shipu* (English River) south to *Nutapinuant-shipu* (Eagle River). A smaller calving ground was located north of the proposed TLH, north of *Mashku-nipi*. This map also shows locations where Innu have seen and/or harvested caribou from this herd during the post-settlement period.

Today, the Innu consider the area around *Mishtashini* and *Eshkanat katshipukutiniht* to be an important area for caribou. They call it *ushakatik*, a place where there are always caribou. Concerns were expressed by some Innu about the effects that the proposed TLH Phase III could have on this “sensitive” caribou habitat given its close proximity to the proposed road. Caribou resident in this area could be affected by highway traffic and increased harvesting efforts and poaching by Innu and non-Innu alike.

4.3.2.3 Salmon

Several older Innu people in Sheshatshiu remember harvesting salmon on the upper tributaries of the *Nutapinuant-shipu* (Eagle River) using *uashuakan* (leister, fish spear). According to one informant, the leister consisted of a long pole and “attached at the front was two curved sticks with a spike in the middle where the fish was speared. This was done in the night times, using the bark of the birch trees as a torch. This was before the nets were used” (Sakaue, et al., 1979). Older Innu can identify locations where they used to fish salmon with spears. They can also describe the various brooks and lakes frequented by this species (Map 9). These include *Tshenuamiau-shipu* (Kenamu River), *Utshashumeku-shipiss* (Salmon River), *Tshenuamiau-shipiss* (Kenamich River), and the tributaries of the *Nutapinuant-shipu* (Eagle River) leading to *Iatuekupau* and north to *Enakapeshakamau*. Lakes close to the TLH Phase III such as *Mashku-nipi*, *Mishtashini*, *Pepauakamau*, *Eshkanat katshipukutiniht*, *Uapanatsheu-nipi*, and *Nekanakau* have salmon populations in season. They will all be accessible by boat from the preferred routing option for the highway by way of *Uinikush* that will intersect the highway at its north end.

4.3.2.4 Other species

Innu spatial knowledge of wildlife and their habitats has provided information about a variety of other species besides those considered above. For example, in the past, older Innu hunters have identified the locations of bear dens near burnt areas where wild berries were in great abundance. Bald eagles were sited in the spring near *ashkui* preying on ducks and other waterfowl. The locations of beaver lodges and good porcupine areas were also been identified. In relation to the proposed TLH route, Map 10 shows the locations of beaver lodges and habitat as well as good porcupine areas according to Stopp’s informants. The time span for this information is the last 10 years.

³² These data are from Sakaue, Andrew and Gregoire, 1979.

Map 9. Innu environmental knowledge – salmon-bearing waterbodies

Map 10. Innu environmental knowledge – some porcupine and beaver locations in the project area

4.4 Data Gaps

Having reviewed the available Innu Nation land use and occupancy data, and conducted supplementary fieldwork to obtain additional information, we can say that a number of gaps remain in our data which could have a bearing on the confidence of the effects predictions in this report.

One data gap relates to contemporary land use in the project area by Innu from the Quebec Côte-Nord. A number of these Innu, particularly people from St. Augustine, have kinship connections with Sheshatshiu Innu, and they have used portions of the project area in the pre- and post-settlement periods. While we were not mandated to conduct research into the land use of Quebec Innu with respect to the TLH Phase III project, we note that data on their land use could provide a more complete picture for the project area, and could assist in predicting the effects of highway operation (e.g. predict the location and intensity of harvests by Quebec Innu and the relationship between their harvesting and that of the Labrador Innu).

With respect to our informant sample, the bulk of our interview data come from male informants. In the case of the December 2002 supplementary research by Stopp, three women with extensive experience in the project area had been identified originally, but two were unavailable during the time of the interviews. Although women traditionally remain close to camps and do not travel widely to hunt and trap, they nevertheless possess certain relevant environmental knowledge developed through discourse with camp members, from processing the results of the harvest, and from carrying out their own resource harvesting, albeit close to camp (e.g., harvesting fish, snowshoe hare and partridge). Thus, to the extent that women's environmental and land use knowledge is different than men's, our sample may have produced data gaps in certain crucial areas of land use.

The data used for this assessment suffer from an additional bias in that they are derived to a major extent from accounts of harvesting activities based at camps established under the SIBC Outpost Programme. As a result, we may have under-represented itinerant harvesting and travel in the study area, particularly when such activities involve snowmobiles during the winter months. We have not mapped the specific routes and harvesting locations of itinerant harvesters during the post-1991 period even though we obtained verbal descriptions of destinations from several of them. Furthermore, we have not conducted a systematic survey of all potential harvesters in Sheshatshiu to determine which of them have participated in itinerant harvesting and travel activities in the project area in recent years.

With respect to Innu environmental knowledge, such knowledge could be tapped for considerably more information through careful interviewing and use of the map biography method. More information concerning *utamiatshuk* (otter slides and resting areas), goldeneye nests, and *ushakatik^u* (caribou areas) could be obtained that would

assist in managing the mitigation and monitoring of TLH effects. More systematic research concerning the location and timing of *ashkui* and the sequence, timing, distribution and abundance of waterfowl could be undertaken that would help with mitigation and monitoring efforts. Similarly, more research into Innu knowledge of salmon habitat could also prove useful to such efforts.

5.0 Environmental Effects Assessment

5.1 The effects of roads on land use - comparative data

Many environmental impact statements (EIS) have predicted effects related to road construction and operation, be they primary transportation routes, hydro dam or forest access roads, or snowmobile trails, but such effects predictions cannot be readily verified due to the lack of monitoring research. Highways and other transportation corridors have been subjected to environmental assessment (EA) in other Canadian provinces and throughout the United States. The following discussion is based upon a small sample of this EA literature.

Corner Brook Pulp and Paper Ltd.'s 1986 EIS predicted a range of possible effects resulting from the construction of forest access roads including increases in moose and small game hunting, trapping, and fishing trout and salmon in the company's wood harvesting areas. With respect to salmon, the "potential impact on fish resources of the Main River and Upper Humber River watersheds may result from both the access road and the actual forest harvesting operations....the projected possible angling catch could result in a decline in the salmon resource and require closer management of salmon stocks in the river" (Northland Associates Ltd., 1986:267-268).

In the Star Lake Hydroelectric Development EIS (JWEL, 1996:201), the authors predicted that "During operation of the project, increased accessibility will lead to an increase in angling (and possibly poaching) pressure." Such effects had been observed at the Cat Arm and Baie D'Espoir reservoirs. However, in the authors' professional judgment, "Increased angling pressure, on a scale experienced at the other reservoirs, will produce a minor impact on the brook trout population and negligible impact on the Arctic char population" (ibid.:201). This effects prediction was quickly proven wrong. The federal Department of Fisheries and Oceans (DFO) closed Star Lake to anglers in 2001 because of concerns about fish stocks in the lake.³³ Road access to the Star Lake was also

³³ DFO's area manager, Morley Knight, was quoted saying "the amount of fishing on the lake has risen dramatically in the past couple of years, since a new road was built. Knight says the department doesn't have any concrete figures on how many fish have been taken out of the lake. But he says there's sufficient concern to close the lake for the next few months (CBC Regional News - Thursday, January 25, 2001, evening news). Berkeley Slade, DFO Staff Officer with DFO's Resource Management Division in St. John's, said the department estimated that on one weekend alone, at one point in the summer of 2000, there were 500 anglers on the lake including many non-residents. 12,000 to 15,000 fish could have been removed from the lake that summer – all through legal fishing (personal communication).

predicted to increase harvesting pressure on caribou, moose, black bear aquatic furbearers and migratory birds, but the effects were predicted to be minor to negligible (ibid.:205).

The 1994 Environmental Preview Report for the proposed Ptarmigan Snowmobile Trail (running parallel to the preferred route for Phase III of the TLH, between Sandwich Bay and Goose Bay) predicted that the “principal negative impact here is the potential increase in fishing, hunting and trapping pressure (legal and illegal) on these particular resources because of the improved access (Northland Associates Ltd., 1994:144). The report’s authors noted that in the context of public consultations, the Sheshatshiu Innu expressed concerns that

the trail will open the country to large numbers of people and perhaps encourage the establishment of additional commercial outfitting camps. This increased competition for the resources of the land is something the Innu wish to prevent, and could prevent, or at least regulate, if negotiations resulted in some degree of control over the land and its resources. Unless a land claims settlement is achieved, or unless some degree of interim control is awarded to them, the Innu (while not totally negative to the project otherwise) will oppose the development of the Ptarmigan Trail (ibid.:155).

In the end, the trail was routed to *Atatshuinipek* (Lake Melville) to the east of *Akaneshau-shipu* (English River) rather than across the Eagle River plateau. This alleviated concerns about increased access to the wildlife and fish resources of the plateau by way of a snowmobile trail.

The 1998 EIS for the Phase II of the TLH from Red Bay to Cartwright (JWEL., 1998) also predicted possible effects as a result of increased human access and harvesting efforts including:

- a decline in waterfowl density in the vicinity of the road (p.109);
- an increase in trapping and snaring snowshoe hares (p.129);
- an increase in recreational cabin use (pp.129, 197-198);
- a decline in marten populations or changes in their distribution in the vicinity of the road (p.129);
- improved access to watercourses with a resultant increase in fish harvesting (pp.149, 156);
- an increase in competition for prime resource use areas such as waterfowl habitat and fishing pools (pp.197-198);
- an increase in illegal hunting and fishing (p.198);
- increased potential for outfitting and tourist lodge development (p.276).

It is not possible to determine the accuracy of any of the effects predictions in the aforementioned environmental impact studies due to the lack of monitoring research along the road. With the exception of a short-term marten study, no other environmental effects monitoring was recommended (ibid.:vi).

Harry Martin, a conservation officer with the Department of Forest Resources and Agrifoods (DFRA) in southern Labrador, says it is still too soon to tell what effects on wildlife and fish the road will bring, as the final section was only completed in November 2002. Martin says conservation officers spent a fair bit of time on completed sections of the highway last summer, but encountered few harvesters. Nonetheless, they anticipate a great deal of highway traffic next summer, and they are very concerned about poaching and over-harvesting (personal communication).

Outside of Newfoundland and Labrador, predictions and concerns about the effects of highways and other linear transportation corridors mirror those stated for domestic projects. In his 1977 report of the Mackenzie Valley Pipeline Inquiry, Justice Tom Berger considered the possible effects of the Dempster Highway, winter roads, seismic lines and other access routes on the Porcupine caribou herd, predicting that unrestricted access “would lead to intolerable pressure on the herd.” He advocated controls on hunting on all access routes not just the Dempster Highway (1977:42).

The Alaska Highway Pipeline Inquiry Report (Lysyk, et al., 1977) did consider the relationship between access and Aboriginal land use in predicting that the Dempster highway would result in increased wildlife harvesting, in particular caribou from the Porcupine Herd, and increased competition between Aboriginal and non-Aboriginal users of wildlife resources. The Inquiry found that the pipeline would probably have a “significant adverse effect on the people whose existence is dependent on the land....competition for renewable resources, such as game and fish, will come from pipeline workers and from the increased population” (ibid.:67).

Available monitoring data and analysis with respect to transportation corridors come more from focused government agency or university research (and anecdotal information) than research initiated directly as a result of environmental assessment, but such research is conducted on a limited range of biophysical effects resulting either from the physical characteristics of the corridor or its operation. The latter includes primarily cumulative effects associated with increases or changes in human harvesting activities that follow the opening of formerly remote areas to human access. For example, in Ontario, wildlife biologists studied the effects of forest access roads on declines in moose populations. They linked these declines to increased harvest pressure which was, in turn, the result of increased road access in recently logged areas with extensive road networks and where cover for moose had been greatly reduced (Eason, et al., 1981; see also Euler, 1985; Timmerman and Gollet, 1983).

In the Yukon, the territorial Department of Renewable Resources published a report in the 1980s concerning access-related effects of backcountry roads on wildlife (Mychasiw and Hoefs, 1988). The report noted that wildlife can be affected not only by increased harvest pressure facilitated by roads but also by traffic disturbance referring to the “avoidance response of wildlife to vehicles and others forms of human activity associated with roads” (ibid.:6).³⁴ Two of the case studies referenced by the authors are of particular

³⁴ The report’s authors say that road access “to formerly inaccessible areas can have beneficial effects if it redirects hunting pressure away from wildlife populations in danger of over-harvest or already undergoing

interest. The first concerns a mine access road, the “Nahanni Range Road,” built in 1965 across part of the Nahanni caribou herd’s range.

By 1973, caribou were seen only occasionally in this part of the Hyland Valley and hunting activity focused on two large mineral licks near the road. The practice was to wait at the roadside until some caribou came to the lick. Road access into the upper Hyland resulted in a harvest (including poaching by mine workers and legal hunting by Native people of the Watson Lake Area) between 1956 and c. 1973 that exceeded the recruitment rate of the herd, causing it to decline in numbers (ibid.:15).

The second case study concerns the construction of another mine access road, this time a road built by Morengo Resources Inc. in 1987 into mountain goat habitat. The Yukon Department of Renewable Resources,

was aware of the presence of a small goat population (of 9 to 12 animals) in this area, but had no means of imposing hunting restrictions, as the hunting season had already begun. The Department opposed the construction of any form of overland access, anticipating that hunters would quickly respond to the new road. Morengo Resources personnel subsequently informed the Department that a hunting party practically followed the caterpillar tractor being used to construct the road. Three goats were reportedly shot in this area, one of them less than 100m from the drill pad (ibid.:16).

Further south, McLellan and Martin (1991:60-61) studied the effects of commercial forestry on grizzly bear populations in southeastern British Columbia. They concluded that forest roads increase legal and illegal hunting in remote areas. Furthermore, as roads increase in number, the efficiency of enforcement officers declines so that it is increasingly easy for poachers to escape detection and control. In their view, “for species such as caribou and grizzly bears that are both vulnerable to illegal killing and have low reproductive rates, access is an important factor that may determine their continued existence in some locations” (ibid.:60-61). The extrapolation to be made from these findings is that increases in harvest pressure (whether by Aboriginal or non-Aboriginal peoples) can lead to significant declines in wildlife abundance. The law of diminishing returns is thereby launched meaning that the more unrestricted harvesting occurs, the less wildlife remains to be harvested. Harvesting effort may increase in the short term to offset declining wildlife abundance, but sooner or later, even this cannot compensate for the scarcity of game caused by collective over-harvesting.

The effects of roads in British Columbia was summarized by Sean Sharpe, the Research Manager for the Institute for Environmental Monitoring and Research in Happy Valley-

decline. However, there can be no lasting benefit if the harvest rate in the near area escalates to a level where the overhunting/decline cycle is repeated” (Mychasiw and Hoefs, 1988:10).

Goose Bay (letter to Peter Armitage, 10 January 2003).³⁵ In his experience, the greatest effects of roads

are almost always related to resource depletion of areas near new access. In northern systems, there tends to be a rush into newly accessible areas, resulting in a rapid and unsustainable harvest of wildlife and fish. This is particularly a great risk if roads are near wintering areas of moose and caribou, or populations of trout and salmon in low productivity lakes and rivers that previously had limited or no access. Effects are not limited to the road footprint: the growing prevalence of ATV and snowmobile access expands the impacts of road corridors substantially.³⁶

In cases where new roads are opened through formerly inaccessible territory without adequate regulation and increased enforcement, poaching is a significant risk to wildlife and fish. Aboriginal harvests can also result in wildlife population declines if they are not regulated through Aboriginal government mechanisms (ibid.).

In southern Labrador, Garrido and Stanley (2002) surveyed residents concerning their perceptions of the effects of the Red Bay – Cartwright section of the TLH, which at the time of the research had not yet been completed. Respondents reported no change in the abundance of the region's wildlife and fish resources. However, "there is widespread fear that the influx of fishers and hunters from outside will result in the rapid depletion of animal and fish resources in the region, particularly in areas where the road travels closely alongside rivers, such as near Paradise River. This fear is stoked by the heightened presence of outsiders engaged in harvesting activities (mostly freshwater fishing) in and near communities" (p.14).³⁷ Similarly, Settler/Metis trappers from Happy Valley-Goose Bay expressed concern for existing trap lines that will be traversed by the highway between *Tshenuamiu-shipu* (Kenamu River) and the bridge over *Mishta-shipu* (Churchill River) (Stopp, 2002b).

Also in Labrador, Smith (2001) conducted masters degree research into marten populations in the vicinity of the Red Bay-Cartwright TLH. One objective was to examine the spatial effects of trapping on the study population. His research showed that "Half of the marten whose home ranges came within 5 km of the trap line were removed. Trapping in this study removed animals whose home ranges were up to 7.4 km away from the trap line. The two week trapping effort effectively removed all marten whose movements within their home range brought them into contact with the trap line" (ibid.:36). Having noted that the TLH would lead to increasing trapping pressure on marten, he concluded that the sustainability of marten harvests in the area would depend

³⁵ Trained in biology, Sharpe worked on comprehensive resource planning in northern Ontario, managed park resources in Northern B.C., worked as the provincial carnivore specialist for the B.C. government, and acted as the Regional Wildlife Section Head for the Skeena Region in northeastern B.C.

³⁶ See also Bennett's (1991:111) generalization, "Road systems provide hunters, poachers and trappers with access to areas inhabited by wildlife, and so increase their efficiency in exploiting wild populations."

³⁷ Research into local citizen perceptions/observations of road impacts could be an important component in monitoring work to determine if impact predictions are accurate and mitigation measures are working. More on this point below.

largely on source populations more distant from the road dispersing to the road's vicinity (ibid.:37).³⁸

This review of some of the literature concerning the effects of roads and increased human access to wildlife populations is cursory to say the least, but its purpose is to suggest that biophysical effects on wildlife harvested by the Innu could have direct effects on Innu harvesting success and land use in general. The key points to be understood from existing comparative literature on linear transportation corridors are:

- species depletion along the road corridor, and in areas accessible from it, are highly probable;
- Innu will have to compete with others in their traditional harvesting areas;
- any increase in either temporary camps or more permanent cabins (by Innu and non-Innu alike) will further serve to affect resource stability and alter the natural environment; and,
- environmental monitoring programmes can potentially provide the only meaningful statements on effects, yet are absent elements of the majority of environmental impact studies.

The discussion of possible biophysical effects of the TLH from Cartwright to Goose Bay is presented in greater detail in other components of the EIS (JWEL/IELP, 2003) that this component study contributes to.

5.2 The social effects of roads – comparative data from the James Bay area of Quebec

The social effects of road development in James Bay, Quebec, are a useful comparison with the Labrador situation. Road construction in that region was associated with the James Bay Hydroelectric Project and other developments such as commercial forestry. Roads from Matagami in the south to the northern Hydro-Quebec town of Radisson, and the Cree communities of Chisasibi, Wemindji, Eastmain and Waskaganish have had significant effects, both good and bad.³⁹ Using numerous electricity generating facility and dam and dyke service roads, both Cree and non-Aboriginal people have gained considerably greater access to hunting and fishing areas in northern Quebec. With respect to Cree land use,

The new road network has had a major effect on resource harvesting methods. Trucks, all-terrain vehicles and snowmobiles are more practical and economical than planes for travelling inland. Winter roads, logging roads and reservoirs have become the preferred routes for reaching fishing, hunting and trapping grounds.

³⁸ Simon, et al. (1999) found that marten populations in a relatively accessible area in central Labrador showed signs of over-harvest, while those in an inaccessible area did not. Trapping access was by way of Grand Lake forest access roads and the TLH between Goose bay and the Pinus River.

³⁹ The evaluation of whether impacts are good or bad often depends on whether an individual benefits from the road or experiences negative impacts – in the balance. Therefore, opinion on road impacts among the James Bay Cree is mixed.

Whereas the most favorable sites for resource harvesting where camps were located, it is now proximity to roads and reservoirs that serves as the main criterion. The improvement in means of transport has improved the geographical distribution of activities (Hayeur, 2001:73).

Alan Penn, Science Advisor to the Cree Regional Authority, supports these observations. In his view,

The roads specifically built for hydro-electric project construction have generally reinforced Cree use of inland hunting territories. It is true that there has been a dramatic rise in the capital and operating costs associated with running hunting camps – or a network of camps, but on the other hand individual families with access to land (and the income required to support hunting) benefit from the possibilities of being able to move easily and sometimes weekly between their home communities and their family hunting territories. There has been an undeniable increase in the frequency of travel to the deep inland hunting territories in the case of Chisasibi, and in the time spent at hunting camps. The inland hunting territories themselves have acquired important characteristics of family property, and become a basis for diversification, e.g. into outfitting. A substantial number of Cree ‘tallymen’ are now retired Cree administrators or political figures who now use their territories as a source of family income (Penn, 2003:2).⁴⁰

In the days prior to hydroelectric development and road construction, rivers and lakes were the primary conduits of travel for the Cree to inland camps and harvesting locations. These natural travel corridors have been supplanted in large measure by roads which allow Cree harvesters to maintain both a semi-sedentary life in the communities as well as a presence at bush camps in order to meet the requirements of the Guarantee Annual Income Programme under the terms of the James Bay and Northern Quebec Agreement.⁴¹

While the available evidence suggests, then, that roads have had a significant effect on Cree social structure, economy, land use and land tenure, some of which have been positive, they have also brought a variety of negative effects. Scott (1995:7-11) enumerated these effects in the context of interviews with Cree people in the early 1990s.⁴² They include:

⁴⁰ A tallyman is a senior, male hunting group leader – an *utshimau* – who, at least theoretically, exercises a custodial role in relation to his hunting territories and the wildlife resources present there (see Tanner, 1979:182-202).

⁴¹ Scott (1995:6) also notes that main roads and highways in addition to “access roads to borrow pits, dikes and reservoirs, trails for ATV access to lakes, roads for logging, and new snowmobile corridors....are associated with new patterns of access to land and resources by both Cree and outsiders, patterns that are still very much in a process of trial, adaptation and evolution. Some outcomes have been quite positive; others decidedly negative. Roads, clearly, are viewed by Cree as one of the more powerful sources of cumulative impacts.”

⁴² Scott (1995:6) warns us that this list is not an exhaustive summary and that a more systematic investigation of Cree perceptions of road impacts might be a first step in a monitoring programme.

- the influx of thousands of recreational hunters and fishers each year who compete with Cree for wildlife resources in particular in areas adjacent to the roads;⁴³
- construction of temporary and permanent cabins and camps by recreational hunters, some of whom establish more distant structures by transporting construction materials on ATVs;
- disruption of the customary Cree wildlife management system (based on the leadership of “tallymen”) by non-Aboriginal hunters who fail to respect Cree hunting territory custodianship;⁴⁴
- public safety problems due to the frequent discharge of firearms near roads;
- disrespect for Cree religious beliefs and contamination of drinking water and fishing sites due to the improper disposal of animal carcasses;
- a dramatic increase in theft from and vandalism of Cree camps and equipment;
- increase in inter-community “poaching,” e.g., harvesting of beaver from lodges on individual hunting territories by Cree from other communities.

Problems of competition with non-Cree harvesters were exacerbated once the Quebec Government removed restrictions on highway access north of Matagami in the mid-1980s and actively promoted a “free” hunt by “southern sport hunters who would gain access by road, without the use of guides or other services” (Scott and Webber, 2001:153).

Forestry and forest access roads raise different kinds of problems compared to the transportation infrastructure for hydroelectric generation. Penn’s main concern is with the loss of Cree ability or authority to control access to their hunting territories as a result of forestry roads. Large numbers of leases for hunting camps have been issued to non-Cree so that in the southern parts of the James Bay territory, “Cree families may be outnumbered perhaps by ten to one by these non-native hunting camps. In such situations, competition for access to land and resources is a tangible and omnipresent issue, superimposed as it were on the more direct ecological impacts of forestry operations” (Penn, 2003:3).

Feit and Beaulieu (2001:131) report that while forest access roads have improved access for Cree to their hunting camps, the downside is that the roads also improve access for non-Cree. In such cases, vandalism and theft have at times been so serious that Cree hunters are obliged to transport snowmobiles and other equipment back and forth between their communities and their camps due to the insecurity of leaving equipment at unattended camps. Theft, vandalism and increased transportation requirements have added to the monetary cost of harvesting activities for some Cree people. Such problems appear not to have existed prior to the construction of roads into the region.

⁴³“Access roads to electrical transmission lines, and other roads, are used to reach areas; hunting usually takes place within a few kilometres either side of the road. All watercourses accessible by road that have potential for fishing are harvested” (Hydro-Quebec. 1993b:40).

⁴⁴Based on the idea of people receiving invitations to use a territory from the tallyman.

5.3 Existing road effects on Labrador Innu land use

In 1986, the provincial Department of Transportation commissioned an EIS on the section of the TLH referred to at the time as the Ross Bay Junction – Churchill Falls Tote Road (DeLCan, 1986; Tanner and Armitage, 1986). A variety of possible effects on land use were predicted including:

- increased tourist traffic (DeLCan, 1986:5-16);
- the establishment of restaurant stops, motels and other facilities at key points on the route (ibid.:5-16);
- new cabin construction (ibid.:5-16);
- an increase in trap lines operated by non-Innu both along the highway and subsidiary roads (ibid.:5-16);
- more recreational sports fishing and hunting (ibid.:5-18);
- increased winter recreational vehicle use (ibid.:5-14);
- competition between Innu and non-Innu for wildlife resources (ibid.:5-14);
- increased use of wildlife and fish resources by non-Innu leading to the restriction of traditional Innu land use patterns and hence conflict and significant social-cultural effects (ibid.:5-18).

No systematic monitoring work was undertaken to verify these predictions. However, it would appear that the assessment failed to predict certain positive benefits of road construction for Innu land use, namely, increased access to hunting and fishing areas by Labrador and Quebec Innu, even in the face of resource competition with non-Innu. Harvesting success in the face of such competition is unknown. Moreover, in recent years, Labrador Innu have built a dozen or so cabins along the road from Goose Bay to Churchill Fall and from there to Esker. More attention is devoted to this matter below.

In the absence of systematic monitoring of the effects of existing roads in Labrador, we are obliged to comment on such effects on the basis of anecdotal evidence and limited data from provincial government and Innu sources. We have neither conducted systematic research into the effects of existing Labrador roads on the Innu nor attempted to sample their opinion about such effects.

Nonetheless, the available evidence suggests that the TLH from Goose Bay to Labrador City and other roads such as the secondary road off the TLH to Esker, the Orma Dyke and Lobstick Lake roads maintained by CFLCo, Grand Lake forest access roads, the road to *Uhuniau* (North West Point), and even the 32 km stretch of highway between Goose Bay and Sheshatshiu have altered Labrador Innu land use patterns. Innu from Sheshatshiu and Davis Inlet/Natuashish, as well as Innu from Sept-Iles/Maliotenam, Betsiamites, and the Quebec Côte-Nord use the TLH to harvest caribou, porcupine, beaver, ptarmigan and other species that may be encountered opportunistically in the vicinity of the road.⁴⁵

⁴⁵Even La Romaine Innu who are not currently connected to the Quebec road network access the TLH using vehicles parked in the neighbouring village of Natashquan.

5.3.1 Increased road camps

Increasingly, Sheshatshiu Innu harvesting efforts and camp establishment are occurring in the vicinity of roads rather than more remote locations formerly accessible by canoe and snowshoe, and in more recent years by aircraft. In the fall of 1995, Sheshatshiu Innu established camps near Valley River at the turnoff on the TLH to Wabush-Labrador City, on the Esker Road near McKay Lake, at the junction of the TLH and the Twins Falls Road, *Kakauakamat* (Wilson Lake), Pope's Hill, Gull Island, "Mile 41" near *Etuatshipiss* (Edward's Brook), and Grand Lake Road. Only one hunting group did not harvest near a road, and this was at the head of *Kakatshu-utshishtun* (Grand Lake), accessible by boat. The trend towards increased use of roads is illustrated in Table 5 which compares Innu camp locations over a 12 year period – near roads versus remote country locations. The table shows a significant increase in the establishment of road-accessible camps starting in the spring of 1998.

Table 5. Comparison of Innu camp locations, roads versus remote locations (data from Sheshatshiu Innu Band Council Outpost Programme records collated by P. Armitage)

Year/season	No. of remote camps	No. of camps along TLH & Esker Road	No. of camps along other roads	Total camps
2002 spring	4	6	0	10
2001 spring	4	10	0	14
2000 spring	9	8	0	17
1999 spring	9	3	0	12
1998 spring	8	9	0	8
1997 fall	7	0	0	7
1997 spring	12	0	0	12
1996 spring	14	0	0	14
1995 fall	1	6	1	8
1995 spring	14	0	0	14
1994 spring	9	1	0	10
1993 fall	10	0	0	10
1993 spring	13	0	0	13
1991 spring	7	0	0	7
1990 spring	8	0	0	8

It is important to note, however, that the figures presented here do not include temporary camps frequently established along the Sheshatshiu to Goose Bay road, on Grand Lake forest access roads, or at North West Point which is accessible by road.⁴⁶ They also do not capture any number of itinerant harvesting activities both along roads or at remote locations in Innu territory, such as the trips to the Orma Dyke road or Esker to hunt

⁴⁶ We know of one Innu man who, riding a mountain bike, routinely hunted ptarmigan with a sling-shot along the *Uhuniau* (North West Point) road in the fall of 2002.

caribou. In addition, winter camps established by snowmobile or summer camps established by boat (which are seasonal fixtures at Kenamu/Kenamich, Sebaskachu River and at the Grand Lake Rapids) are not included. These figures show only the locations of camps to which transportation was facilitated and subsidized by the Sheshatshiu Innu Band Council.

For more than 20 years, Sheshatshiu Innu established remote camps located north and south of Goose Bay using aircraft. As mentioned previously, the cost of chartering aircraft has been financed through Outpost Programmes (known as *Kakushpinanut*) administered by the Band Council. One of the consequences of this programme is that Innu are now heavily dependent on it for access to remote harvesting locations. In years when funding is in short supply, the Band Council cannot afford to fly families into the country, and so, the more remote parts of Innu territory are virtually abandoned for the year with the exception of itinerant caribou hunting parties.⁴⁷ At such times, Outpost Programme funding may be used to subsidize the costs of establishing camps along the TLH. Hence, road-based camps become a type of compensation for curtailed access to the back country, with the added benefit of allowing people to commute between their camps, the village, and stores in Goose Bay or Churchill Falls. Road camps also provide access to country areas for people who hold full-time employment in the village and who, therefore, cannot take advantage of the Outpost Programme and its longer-term fly-in camps. People who have health problems or who are pregnant and who therefore need rapid access to hospitals can also obtain some semblance of country-living and harvesting by staying at road camps.

On the other side of the equation, road camps have certain disadvantages. Noise and dust can be a problem as can access to alcohol that roads permit. For some Innu, the frequent coming-and-going from camps, and regular visits from friends and family, distract from the stability, tranquility and solitude of remote camps. Constant commuting between camps, the village, Churchill Falls or Goose Bay can at times assume a frenetic character. In addition, frequent visits by relatives can put pressure on a family's supplies of *nutshimiu-mitshim* (bush meat) due to social obligations to send meat to elders and family members back in the village. We suspect that for most Innu who like *Innu-aitun*,⁴⁸ there is a significant difference between living at remote camps in the country and living along the road, and that the majority of them prefer the country, even though the road provides certain benefits mentioned previously.

In the absence of monitoring work, we cannot say if theft and vandalism at Labrador Innu road camps has been a problem. However, we note that, on occasion, theft has been an issue at remote camps where fly-in access facilitated the crime. Several years ago, the Mushuaunnu Band Council (Natuashish) had electrical generating equipment stolen by fly-in thieves from its mobile treatment facility at *Ashuapun* (Border Beacon). In the late

⁴⁷ Furthermore, given apparent limits to programme funding in recent years, the Band Council has supported travel far into the country only in the spring. Since 1997, no remote country camps were established in the fall under the Outpost Programme.

⁴⁸ *Innu-aitun* means things concerning the Innu, things done the Innu way, Innu "traditional" work hunting, trapping, fishing, gathering, cleaning animals, cooking bush food, making Innu crafts, etc.

1970s, Innu reported the theft of traps from caches in the *Akamuiapishk*⁴⁹ (Mealy Mountains) region. One person said he “lost two hundred traps in the *Iatuekupau* (Park Lake) area. “He blamed the sports hunters and fishermen for the occasion and he never did recover his traps” (interview by Alex Andrew, 15 Jan. 1979).⁴⁹ In the past, some owners of sports fishing lodges have also complained of theft and vandalism, but have blamed Innu for such losses. If such occurrences have been reported when access was difficult and infrequent, road access will do little to improve the situation

In addition to facilitating harvesting and country-living, the road has in previous years also been important to Sheshatshiu Innu because of a commercial whitefish fishery which operated in the late 1970s and early 1980s. Trailers and other facilities were set up near the Lobstick control structure to accommodate Innu workers and their families, but the site served as a base camp for a variety of harvesting activities not just commercial ones. In 2002, the Sheshatshiu Innu Band Council established a Country Family Treatment Programme at the former Lobstick Lodge on the road to Esker. Participants in the programme are encouraged to hunt and fish during their stay at the facility (Lyla Andrew, personal communication).

The abovementioned changes in Innu land use have occurred in the context of competition for wildlife and fish resources with non-Innu people from central and western Labrador. Many non-Innu residents of Labrador use the Churchill Road to harvest George River caribou, especially in the Orma Dyke road and Esker areas. This often brings them into direct contact with Innu harvesters. Whereas, trappers of Settler/Metis descent continue to subscribe to some version of their customary trap line system, at least in the Grand Lake region (see Zimmerly, 1975:145), trapping along the highway is a “free-for-all,” where there is apparently no mechanism in place to regulate trapping locations (Frank Phillips, personal communication). Non-Innu trapping along roads appears to have little if any direct economic effects on Innu harvesting given that Sheshatshiu Innu conduct very little trapping of furbearers these days; the primary focus of their harvesting efforts is on meat-yielding species.⁵⁰ However, historically at least, the establishment of trap lines has been a source of tension between Innu and Settler/Metis, as trap lines are perceived by many Innu as unwelcome intrusions into their hunting areas, while Settler/Metis have historically claimed proprietary rights over trap lines. Such attitudes may persist among the Innu, and if so, may negatively affect the occupancy attributes of their land use (e.g. their sense of independence and control over their territory).

⁴⁹ Although sports fishing camps are now well-established on the Eagle River plateau, in the 1970s they were still vehemently opposed by Innu hunters. One hunter, now deceased, said the “Indians never knew that government was giving permission for people to set up fishing camps. That’s why the Indians don’t like the fishing camps, the government’s attitude of not consulting with them” (interview by Matthew Rich, 23 March 1975; reported in Tanner, 1977:127).

⁵⁰ This is a speculative statement given the absence of concrete data.

5.3.2 Increased cabin development along roads

Cabin development in Labrador has also been facilitated by road development. A significant percentage of cabins have been built beside roads (see Map 11). We conducted a simple GIS analysis to demonstrate this point using two digital map layers – one of the existing roads in Labrador, the other an incomplete 1997 Crown Titles database obtained from the Department of Government Services and Lands (derived from point data recorded on 1:50,000 scale maps).⁵¹ The database lists 1248 “cottages” for all of Labrador. Of these, our GIS analysis indicates that 462 were located within one kilometre of a road.

Quebec Innu have also built cabins in Labrador, but these are located primarily along the Quebec North Shore and Labrador Railway line from Sept-Iles to Schefferville. Quebec Innu have been using this railway since the 1950s to reach their customary hunting territories in Western Labrador. In 1955, their hunting territories in the region were included in the Saguenay Beaver Preserve, the purpose of which was to rebuild beaver populations throughout Northern Quebec and adjacent parts of Labrador. Gary O’Brien, a conservation officer with the Newfoundland and Labrador Department of Forestry and Agrifoods, estimates that there are at least 16 Innu cabins between Seahorse and Menihek along the railway (personal communication). Snowmobiles, ATVs and canoes are brought to these locations to facilitate more distant hunting and fishing activities.

In recent years, Sheshatshiu Innu have started to build cabins beside the TLH and tributary roads. These replace the “post-contact traditional,” canvas, prospector’s tent that has served as an icon of Innu land use over the years. Understandably, cabins eliminate many of the onerous aspects of camping such as sleeping, cleaning animals and cooking in cramped quarters and other discomforts, cold and black flies included. Cabins can also be left indefinitely without the worry of damage from snow-loading on fragile canvas roofs. However, cabins can induce their owners to return repeatedly to the same place rather than change harvesting locations more frequently from one year to the next using the portable canvas tent for accommodation.

At least twelve cabins have been built by Sheshatshiu Innu along the TLH or spur roads in recent years at various locations including Esker, Simms River, Churchill Falls, Wilson River, Edward’s Brook, Wabush road turnoff, Grand Lake road, and “Four mile” road near Grand Lake. These complement the dozen (or so) Innu cabins built at *Uhuniu* (North West Point), and more remote cabins, including cabins at *Ashuapamatikuan* (Shipiskan Lake), *Kakatshu-utshishtun* (Grand Lake), *Mutnek* (Mud Lake), and elsewhere in the territory.

To summarize this section, we have concluded that there is no simple response to questions about the effects of existing Labrador roads on the Labrador Innu. The available evidence points to a mixture of effects both negative and positive. Only

⁵¹The province is unable to quantify the level of error and incompleteness in this database (Barry Ivany, Government Services and Lands, personal communication), and an updated version of it could not be prepared for us in time to complete this report.

Map 11. Cottages in relation to linear transportation corridors in Labrador

additional research can provide a clearer picture of what these effects actually are as well as the ratio of good to bad. Even with the continuation of the Outpost Programme, we can expect Innu to continue to use roads both to establish camps and conduct harvesting activities. The proposed road through the Eagle River plateau will contribute to this trend in land use - a subject we discuss in the next section.

5.4 Potential effects of the Trans Labrador Highway Phase III

As noted previously, for the purpose of this effects assessment, we are considering only the preferred route (see Map 1) from the *Mishtashini-shipiss* (Black Rocks –A1) crossing of the Churchill River, to *Uinikush* Lake(A4), and hence, across the *Nutapinuant-shipu* (Eagle River) watershed south of *Iatuekupau* (Park Lake – A5), to the Cartwright Junction (87 km south of Cartwright).

The foregoing discussion, in addition to the concerns outlined by Sheshatshiu Innu during community consultation meetings during the winter, 2002, has facilitated the scoping and assessment of possible effects on Innu land use.

Potential interactions between the project and Innu land use may occur during both the construction and operational phases of the project. Such interactions include:

- during the construction phase, physical disturbance and habitat changes could result from right-of-way clearing, the establishment of construction camps, transport of equipment and personnel to these camps, blasting operations, excavating and disposal of excess or waste rock, the establishment of borrow pits, subgrade construction, installing watercourse crossing structures, and activities in and around watercourses;
- during construction and operation, accidental events such as a forest fires or chemical spills could contaminate water or wildlife and affect wildlife and fish populations harvested by the Innu;
- during operation, competition with non-Innu for wildlife and fish resources with non-Innu harvesters travelling considerable distances from the road by way of motorized vehicles;
- during operation, increased Innu land use facilitated by road access;
- during operation, cabin and commercial development by Innu and non-Innu along the road and in adjacent areas via natural transportation corridors;
- during operation, tourist-related, non-consumptive recreational activities along the road and in adjacent areas;
- during operation, the cumulative effects of resource extraction activities along the road and in the interior where natural transportation corridors and secondary roads offer access.

5.4.1 Construction phase

The project has certain physical attributes that could damage wildlife and fish habitat and generate, as a result, short and long-term decreases in wildlife and fish abundance.⁵²

These include the potential hydrological effects of placing subgrade across wetlands in the *Nekanakau* area and culverts across fish-bearing watercourses. Depending on their significance, such effects could have a negative impact on Innu land use by eroding the natural resource base of their harvesting activities. While the potential biophysical effects of the road are the subject of other components of the EIS, and have not been integrated into this study, we wish to emphasize the linkage between changes to wildlife and fish habitat and Innu land use.

The highway construction season will likely extend from mid-May to the end of November. At this time, it is not possible to determine if, when, and where, Innu will be harvesting in the vicinity of the preferred route. Innu could establish camps at *Uinikush* Lake on occasions when construction work is being undertaken near its north end. The proposed route traverses the estuary of a small brook at the north end of the lake. Construction activities and the noise associated with them could disrupt harvesting activities at the lake by altering wildlife behaviour (e.g. driving away migratory waterfowl or small game) and disturb the quality of a relatively tranquil and isolated country experience.

Hunting and fishing by construction personnel could affect the harvesting activities of Innu who may be in the area during construction. However, given the relatively small numbers of personnel involved (i.e. approximately 50 workers at a construction camp) and the long hours they are likely to work each day, it is unlikely that the small numbers of game and fish they harvest would have much effect on species abundance. In addition, recent environmental protection practices in Labrador have placed significant restrictions or outright bans on harvesting activities by construction workers. Therefore, unless the siting of construction camps dislocates Innu from favoured hunting and fishing places, construction personnel are not likely to have a significant effect on Innu land use in the project area.

Uinikush Lake is the only location where we anticipate a direct conflict between road construction and Innu land use. Other lakes where Innu have established camps in previous years, at *Mashku-nipi/Kamishikamat*, *Eshkanat katshipukutiniht*, and *Nekanakau*, are far enough from the proposed route (i.e. >6 km) to allow Innu to escape most of the noise, dust, and other disturbances resulting from road construction. However, disturbance could still be experienced by Innu based at these locations who harvest small game, waterfowl, and fish north of their camps closer to the road construction site.

⁵² In the second phase of the TLH, between Red Bay and Cartwright, WST prepared an Environmental Protection Plan (EPP) outlining a variety of regulations and requirements with respect to road construction. An EPP is also being prepared for TLH Phase III. Among other provisions, construction personnel will be required to follow all applicable federal and provincial legislation concerning hunting, fishing, and trapping in the project area.

In the James Bay region of Northern Quebec and northern Alberta, reclamation of borrow pits along highways has produced artificial waterfowl habitat, especially when remediation measures such as planting grasses and sedges were employed (Alan Penn, Cree Regional Authority and Bruce Turner, Canadian Wildlife Service, personal communications). The new wetland habitat, easily accessible by road, is used to hunt migratory waterfowl. Should post-construction reclamation permit “pooling” to occur at borrow pits along the TLH, particularly in wetland areas with high waterfowl densities, the new habitat and its proximity to roads could increase the efficiency of waterfowl hunters (i.e. bigger harvest for less effort).⁵³ Public safety and law enforcement concerns with respect to the discharge of firearms near highways may result. This could result in effects on Innu land use within the project area.

5.4.2 Operations phase

The most significant potential effects on Innu land use will occur during the operations phase of the project. There are both temporal (short-term and long-term) and demographic components to these effects. The available evidence from Labrador as well as elsewhere in North America (briefly surveyed above) shows rather convincingly that roads and other linear transportation corridors into previously inaccessible areas can lead to a variety of effects related to increased harvesting activities.

For the Labrador Innu, this will probably translate into increased competition with non-Innu people for wildlife and fish resources unless the latter’s access is regulated in some way. Residents of the Island of Newfoundland, non-Innu residents of Sandwich Bay and the south coast of Labrador as well as the Upper Lake Melville area will commence harvesting activities on the *Nutapinuant* (Eagle River) plateau. We note that a few people from Mud Lake, Goose Bay, North West River and Sandwich Bay hunt, trap and fish on some of the lakes on the plateau, but their numbers are very small (Goudie, 1991; Stopp, 2002b). Several outfitting businesses also operate at various lakes on the plateau that have been used by the Innu for many years (e.g. *Iatuekupau*, *Eshkanat katshipukutiniht*, *Pepauakamau*, and *Nekanakau*).

While Sheshatshiu Innu have experienced some conflict with these activities in the past (see the reference to theft above), in recent years mutual accommodation appears to have been established. However, the TLH could bring increased non-Innu harvesting and other forms of land use to the plateau at an order of magnitude far greater than is the current situation. Given the well-known wildlife and fish abundance in the Eagle River watershed, and the role it plays in building an image of Labrador as a “fisherman’s paradise,” the area is likely to attract many sports fishermen – quickly.⁵⁴ Evidence

⁵³ It is beyond the scope of this study to assess the possible cumulative biophysical impacts of the creation of new waterfowl habitat along the road.

⁵⁴ The Eagle River is widely known as the best salmon fishing river in the province. Labrador as a whole is presented in marketing literature as an untamed, virgin wilderness overflowing with natural resources. One provincial government tourism brochure advertises Labrador thus - “Your wildest dreams. Unique and exotic...this land of boundless beauty and endless adventure. Labrador! There are few places remaining on

elsewhere (e.g. Star Lake, Yukon) strongly suggests that the first few years after the opening of the road are a crucial period where a great deal of damage can be done to local wildlife and fish stocks unless harvesting is carefully regulated and supervised. This is the temporal aspect of the effect we mentioned previously. The demographic aspect refers to the large influx of non-Innu harvesters into the region immediately following road completion who could quickly overexploit the local resources, with possible long-term consequences both for the resources and the Innu people who use them.

In the longer-term, the Innu face construction of cabins by non-Innu as was the case elsewhere along the TLH, its side roads, and the Grand Lake forest access roads. Commercial facilities could also be built near the road (e.g. motels, hunting and fishing lodges) to take advantage of the region's beautiful scenery and current wildlife and fish abundance. Paradoxically, such developments are based on attributes which are often compromised by careless management of human access. Taken together in all its forms, a greatly expanded non-Innu occupation of the Eagle River watershed could seriously restrict the freedoms that Innu have enjoyed there for centuries if not millenia, usurp their favourite hunting places and fishing holes, and displace them from preferred camping areas.

On a symbolic level, the TLH Phase III, and the greater access to the plateau area that it will facilitate, is likely to encourage the renaming of geographic features that already have Innu names. While this process started some time ago, with outfitters, bush pilots and the odd trapper adding their own names to major lakes in the Eagle River watershed, almost none of these colloquial English place names have achieved official status. Older Innu have, in the past, resented the imposition of English and French names over Innu ones and have linked it to the idea that "the government" and/or "White people" are stealing Innu land. This phenomena has been observed on the Churchill Falls highway, where highway signs declaring "Arch's Brook," "Bob's Brook," "Divers Brook," etc. have been placed at stream crossings in recent years.⁵⁵ No consultation on these names was undertaken with the Innu Nation, and it does not appear that inquiries were made concerning pre-existing Innu place names for features in the area.

Quick action by governments on the officialization of Innu place names on the Eagle River plateau could help mitigate the sense of dispossession and loss of independence that older Innu in particular experience when they see their place names disappearing from the map. Acceptance of Innu toponyms would also recognize the important cultural heritage of the region. As an added measure, the Government of Newfoundland and

earth that offer such a rich combination of nature's wonders, fascinating experiences, wilderness adventure, and unique history...Labrador has the power to unlock your spirit of adventure and awaken your wildest dreams!" (NFLD Dept. Tourism and Culture, 2001).

⁵⁵ Other examples of colloquial names include "Park Lake" for *Iatuekupau*, "1155" for *Nekanakau*, "Rocky Pond" for *Mishashtini*, "Banana Lake" for *Unikush*, "Birchy Lake" for *Amishku-nipi*, and "Noname Lake" for *Uapanatsheu-nipi*. "Crooks Lake" (*Pepauakamau*) and another "Parke Lake" are two of the few English place names to be officialized in the plateau region. With respect to "Parke Lake," the Canadian Permanent Committee on Geographical Names, *Gazetteer of Canada*, lists a "Parke Lake" just south of the other, colloquially-named "Park Lake" (*Iatuekupau*) (1983:132, NTS map 13B/14). This more southerly "Parke Lake" appears to have no Innu name.

Labrador could give the new highway an Innu name (e.g. the “Akamiuapishk^u Highway,” although the actual name would necessarily be the subject of consultations with the Innu community). We note that such practices are not without precedent in other provinces.⁵⁶

We noted elsewhere that the roads in Labrador have changed Innu land use patterns with many Innu now using the road network to harvest wildlife and fish and establish camps and cabins. Such land use is all the more prevalent when the Sheshatshiu Innu Band Council’s Outpost Programme is not functioning and people cannot travel to remote locations. The final phase of the TLH, from Cartwright to Goose Bay will extend this pattern of land use. More Sheshatshiu Innu will use this area for harvesting and a certain percentage of these will want to construct cabins there. This outcome was suggested as a possible benefit of the road by Innu elders during the community consultation process in the winter of 2002. They thought the road “could be beneficial in the sense that it would facilitate access to the territory by younger generations of Innu people who are heavily dependent upon modern forms of transportation such as skidoos, cars, trucks and aircraft” (Innu Nation, 2002:5).

The Eagle River plateau will be especially attractive to Sheshatshiu Innu with historic roots there. As noted earlier in this study, the system of Innu land tenure that Mailhot (1997) labels “structural mobility,” has meant that certain families are associated with particular portions of the total Innu territory called *Nitassinan*. The Pasteen, Pashtitshi, Penashue, Pokue, and Pone families in particular have had a long association with this area and have extensive kinship linkages to Innu in *Pakua-shipu* (St. Augustine), which makes them members of the sub-ethnic group of Innu known as *Mashkuanunnuat* (“Musquaro people”) (see Mailhot, 1997:40-48). Almost all of their land use is in this region south of the Churchill River – the *Akamiuapishk^u* (Mealy Mountains) area in particular.

While on the land, senior male members of these families served as *utshimau* – hunting group leaders. As far as we can tell, not having conducted ethnographic research with these families, the *utshimau* were responsible for supervising the harvesting activities at their camps. Their stewardship responsibilities included ensuring that proper relations with animal masters were maintained through the correct disposal of animal remains, preventing wastage of meat, and promoting a conservation ethic (Armitage, 1992). In recent years, age and illness have caught up with these *utshimau* and they no longer travel to the Eagle River plateau area. Who from the younger generation will fill their shoes and assume their custodial responsibilities is still an open question.

In any event, opening the area to generalized access by way of the TLH could have an impact on the land tenure system. Innu associated with the *Penipuapishk^u* (Red Wine Mountains), *Ashtunekamuk^u* (Snegamook) and *Ashuapamatikuan* (Shipiskan Lake) areas could start to use the *Akamiuapishk^u* (Mealy Mountains) area, when in the past, they did so either sporadically or only in cases where they had close kinship relations with southern Innu. We have seen this change already in the harvesting activities by people

⁵⁶ E.g., the connector highway between Merritt and Peachland, B.C., was given a Halkomalem Salish name - the “Coquihalla Highway.”

associated with *Akamiauapishk*^u (Mealy Mountains) group who, nowadays, hunt and fish in areas not normally associated with their group – namely in central and western Labrador – locations accessed by way of the TLH.

On the other hand, the land tenure system could be maintained, because with the completion of the final stretch of the TLH, many more family groups will have road access to their familial territories. Under this scenario, the Penashues, et al. would continue to exploit primarily the *Akamiauapishk*^u (Mealy Mountains) area, the Andrews, et al. the areas west of Goose Bay, and so forth. However, Innu associated with the northern regions, likely to remain inaccessible by road for the foreseeable future, would be left out of this equation, if indeed it is still meaningful to the Innu given the increasing complexity of inter-group kinship relations. Their only recourse, in the absence of Outpost Programme support to fly to remote camps, will be to harvest along roads. Phase III of the TLH will be an addition to their, and everyone else's, repertoire of hunting and fishing areas accessible by road.

We noted previously that linear transportation corridors – railways and roads – have facilitated Quebec Innu access to Labrador as well. Customary hunting territories for the Sept-Iles and Schefferville Innu in Labrador west, for example, are reached by the railway and roads. However, Innu from the Quebec Côte-Nord are also hunting there these days even though their historical connections to these areas are weak.

We expect harvesting by Quebec Innu in this region to increase significantly as a result of the TLH access. St. Augustine Innu, in particular, who consider the region to be part of their ancestral territory will use the TLH to reach the Eagle River plateau for hunting and fishing. They already harvest in the border regions north of their community, areas accessible by snowmobile and aircraft (e.g. *Amishku-nipi*).

Collectively, increased harvests by Labrador and Quebec Innu in the *Akamiauapishk*^u (Mealy Mountains) region could result in increased pressure on wildlife and fish populations. Combined with non-Innu harvesting, the aggregate effects could see significant reductions in wildlife and fish abundance. The future of the threatened *Akamiauapishk*^u (Mealy Mountains) caribou herd is of particular concern, as the proposed TLH Phase III will provide access to important caribou habitat, what the Innu call *ushakatik*^u (see Map 8). Poaching animals from the threatened woodland herd by people who gain access to the area by way of the TLH could push the herd to extinction or, at least, seriously retard its regeneration to the point where a limited Innu hunt would be possible.

The relationship between road access and over-exploitation of wildlife and fish populations is all the more important when one considers the fact that the preferred route for the TLH will intersect a number of natural travel corridors. Map 12 depicts many of the more important corridors in the project area. The dark blue routes on the map would be accessible from the road by boat in summer and snowmobile in the winter, while the green ones would be accessible by snowmobile only in the winter. In the words of Innu Nation representative, Greg Penashue, “once you get on top, you can go anywhere you

Map 12. Natural travel corridors on the Eagle River plateau

want.” What Penashue is referring to is the fact that *Tshenuamiau-shipu* (Kenamu River) and the steep slopes lining the Eagle River plateau have for decades served as a serious barrier to travel for people from communities in the Upper Lake Melville region. There are few access points on snowmobile, and the summer portage routes are well up *Tshenuamiau-shipu* (Kenamu River) and are difficult to navigate. The region’s distance from the coast of Labrador has also helped to maintain its isolation. Building the TLH through this area will remove the natural barriers to this isolation, and as Penashue says, once on top, people will experience little difficulty in travelling great distances on either side of the road.

We have identified a number of places along the preferred route of the TLH where access to the surrounding hinterland is especially easy. One important area is the north end of *Unikush* Lake.⁵⁷ With the proposed TLH routing, hunters and fishers will be able to park their vehicles at this location and boat through a large network of lakes, all with healthy populations of trout and salmon. *Mishtashini*, *Pepauakamau*, *Nipi-nipi*, *Eshkanat katshipukutiniht*, *Mashku-nipi/Kamishikamat* and *Nekanakau* will all be accessible by boaters launching from the north end of *Unikush*. During the winter, the road will make these lakes accessible from other points as well including a natural corridor to the east of *Mashku-nipi/Kamishikamat* and another at the northeast end of *Nekanakau*. Travel to the north on snowmobile will also be easy.⁵⁸ Using natural corridors, *Iatuekupau* (Park Lake) and *Enakapeshakamau* will be readily accessible as well as all of the valleys that run east-west across the top of the plateau. Ice-fishing throughout this area, starting with the best known locations such as *Iatuekupau* (Park Lake), runs the risk of seriously reducing fish stocks. We noted previously that DFO has scheduled *Iatuekupau* as a way to prevent ice-fishing. The scheduling of other lakes in the *Nutapinuant* (Eagle River) watershed should be given serious consideration for the same reason.

Further west, toward the Churchill River, we have identified an access concern at *Mush-nipi* which is located approximately 12 km from the Churchill River and 8 km from the preferred route (A3) (see Map 12). Innu based at this lake in the late 1980s used a river valley running east from the lake to trap and harvest ptarmigan and snowshoe hare. The preferred A3 route would give snowmobilers easier access to this river valley. Non-Innu from Happy Valley/Goose Bay have apparently built a cabin at *Mush-nipi* in recent years, which they access by snowmobile. The TLH could improve their access there, and facilitate its use by other residents of Happy Valley-Goose Bay as well for trapping and recreation.

Conflict between Innu land use based at *Mutnek* (Mud Lake) and non-Innu land use is unlikely to increase as a result of highway construction given *Mutnek*’s distance (over 20 km) from the proposed road. Direct conflicts due to road access at *Manatueu-shipiss* (Traverspine River) and *Tshenuamiau-shipu* (Kenamu River) are also unlikely in large

⁵⁷Two men from Happy Valley/Goose Bay own a cabin on the northeast side of this lake, which some non-Innu refer to as “Banana Lake.” The road will certainly improve their access to the lake, and may encourage other Happy Valley/Goose Bay residents to build there as well.

⁵⁸Greg Penashue says return trips from *Iatuekupau* to *Pepauakamau* are easy to do in one day on snowmobile (personal communication).

measure because Innu stopped travelling along these rivers by canoe and snowshoe after settlement in the 1960s, when bush planes became a preferred means to access inland territory. However, *Tshenuamiau-shipu* (Kenamu River) is a culturally sensitive area because of its role as a key, traditional travel route for Innu, with archaeological sites and a former portage within striking distance of the proposed bridge. More recent Innu usage has been through annual spring canoeing expeditions initiated on *Tshenuamiau-shipu* (Kenamu River) by some young Innu men several years ago. Travel upstream and downstream from the bridges proposed for these rivers between break-up and freeze-up would be difficult due to the number and size of the rapids located there. But while these features may attract white water kayakers and canoeists in future years, a possibility that might prove appealing to Innu interested in adventure tourism, increased non-Innu access to *Tshenuamiau-shipu* (Kenamu River) may also be perceived as having an adverse effect on Innu perceptions of occupancy.

Speaking of tourism, one possible positive effect of TLH construction on the Eagle River plateau is that it might facilitate the operation of adventure tourism and outfitting businesses by Innu. In recent years, a number of Innu have expressed interest in such enterprise. An Innu-owned lodge at *Kamishtashtin* (Mistastin Lake) west of Natuashish is nearing completion, and one Sheshatshiu Innu family has already experimented with adventure tourism in the *Akamiuapishk*" (Mealy Mountains) area. The road could reduce the operating costs of transporting clients to *Akamiuapishk*", but Innu-run tourism here would likely face stiff competition from existing outfitters as well as newcomers.

We have identified a concern with possible increased salmon fishing effort on *Tshenuamiau-shipu* (Kenamu River). The river is not currently a scheduled salmon river, but it supports a significant Innu salmon fishery downstream. Innu and others may be able to access areas downstream of the bridge (not easy but possible), including the confluence of *Tshenuamiau-shipu* (Kenamu River) and *Utshashumeku-shipiss* (Salmon River), which is also considered a sensitive zone with respect to archaeological resources (IELP 2002).⁵⁹ This may have effects on salmon populations if not carefully monitored and regulated, and Innu harvesting would suffer as a consequence. In order to protect the salmon in the *Tshenuamiau-shipu* (Kenamu River) and *Utshashumeku-shipiss* (Salmon River) systems, we recommend that DFO schedule these systems and establish a monitoring programme to assess harvesting effort and population levels there.⁶⁰

The last potential effect we wish to consider is the effect that building a road through the Eagle River plateau could have on the establishment of a new national park. A study on the feasibility of the proposed *Akamiuapishku* (Mealy Mountains) National Park is in its early stages and park boundaries remain undetermined.⁶¹ One important point to note for the purpose of this land use study is that the preferred TLH routing is well within the

⁵⁹ One of the first non-Innu accounts of travel up *Tshenuamiau-shipu* (Kenamu River) was written by Lionel Leslie – “We poled and paddled alternately until we reached the mouth of Salmon River, which flows into the Kenamu from the east. Here we could see salmon rising in the water almost continuously - but alas! We had no tackle” (Leslie, 1931:199-200). See <http://www.innu.ca/leslie2.html>

⁶⁰ There is a great deal that remains unknown about this salmon population from a scientific perspective.

⁶¹ The study is likely to be completed in two years.

study area for the proposed park. How much of the Eagle River plateau is included in it will be decided once the feasibility study and a series of public consultations and negotiations between governments and Aboriginal groups are completed (Gary Pittman, Parks Canada, personal communication). This process of consultation and negotiation will last several years.

The Innu Nation has endorsed the establishment of the national park, and would like to see the core Innu land use area on the Eagle River plateau included in it. However, should the construction and operation of the TLH result in effects that detract from the values and objectives underlying park establishment, there is a risk that the park, when it is finally established, could exclude significant Innu land use areas reached by the road. The failure to include these areas in the park would therefore constitute a negative effect on Innu land use given the benefits that park establishment provides. We discuss the issue of the national park and its role in effects mitigation below.

In sum, to reiterate Sean Sharpe's comment above, "the greatest impacts of roads are almost always related to resource depletion of areas near new access." We have identified access to the Eagle River plateau and the core Innu land use in this area as the single most serious potential effect of the TLH project. Increased human presence, both Innu and non-Innu, could result in over-harvesting. After that, biophysical effects that reduce species abundance are also a significant concern. Finally, the exclusion of core Innu lands from the national park configuration as a result of highway construction could negatively affect Innu land use as well.

5.4.3 Accidental events

Accidental spills of gas and oil from construction vehicles and storage tanks during the construction phase and release of harmful substances during the operation phase of the highway are a concern. We are unable to quantify the risk associated with such accidents, but we note that should they result in the destruction of wildlife and fish or the contamination of Innu drinking water and camp sites, effects on Innu land use would occur.

Similarly, forest fires started by people who access the area by road could result in damage to vast tracks of Innu harvesting territory resulting in significant (reversible) changes to species abundance and composition. The visual impact of forest fires is also a significant (reversible) effect as it erodes the aesthetic values associated with the region and damages its tourist potential. Such effects would particularly affect Innu people with an interest in running adventure tourism or outfitting businesses. We are unable to quantify the increased risk of forest fires on the Eagle River plateau, in the *Tshenuamiushipu* (Kenamu River) valley, and along other sections of the TLH toward *Mishta-shipu* (Churchill River) resulting from increased human access due to the road, but note that there is logically an increased risk of accidental forest fires of anthropogenic origin with increased human access and presence.

5.4.4 Cumulative environmental effects

We have identified commercial forestry, mineral exploration and development, and tourism as the three most likely categories of cumulative effects associated with the third phase of the TLH between Cartwright and Happy Valley-Goose Bay. We see no necessary linkage between the road and hydroelectric developments on *Tshenuamiu-shipu* (Kenamu River) or *Nutapinuant-shipu* (Eagle River) should such developments ever occur, although a road would certainly assist in the construction of facilities in the watersheds of these rivers (see SNC and Nolan, White and Associates. 1978).

Portions of the proposed TLH pass through Forest Management Districts (FMD) 19 and 20 in central Labrador and to the west of Sandwich Bay. FMD 20 contains merchantable timber in the Eagle River valley but these stands begin downstream at distances greater than 20 km from the core, contemporary land use areas for Sheshatshiu Innu. Commercial exploitation of these stands, should it ever occur, would have little direct effect upon contemporary Innu land use given its current configuration unless salmon and other migratory species were affected. In any event, this portion of FMD 20 is included within the *Akamiuapishk*⁶² (Mealy Mountains) National Park study area which would make such commercial exploitation highly controversial.

FMD 19 is another matter. The construction of the TLH through this district, and in particular, the establishment of a bridge across the Churchill River, would open the black spruce forests on the south side of the Churchill River to commercial exploitation. Future commercial harvesting of these forests is currently the subject of negotiations between the Innu Nation and the provincial Department of Forest Resources and Agrifoods with good progress having been made on a management plan. The cumulative effects of the road through FMD 19 will depend in large measure on the provisions of this plan, which presently predicts a harvest of approximately 140,000 m³/year. Accessing this volume will require 20-30 km/year of new access road construction, likely as branches from the main TLH corridor (Jay Forsyth, Innu Nation forester, personal communication). This additional road access is likely to be a significant source of cumulative effects resulting from commercial forest developments in conjunction with the TLH.

With respect to mineral exploration and development, the TLH project area currently holds unknown mineral potential due to the relative lack of geological research and prospecting in the area. Much of the plateau is “widely known as a bog hole” because of its extensive wetlands and difficulty of access (Derek Wilton, Memorial University Earth Sciences, personal communication). During the height of the mineral exploration rush after the discovery of nickel at Voisey’s Bay, three companies had mineral claim blocks near the preferred route not far from *Uinikush* Lake. These included Devonian Resources, Peckford Consulting Ltd., and Vulcan Minerals. However, these claims have lapsed and there are currently no mineral claims anywhere in the TLH project area.⁶²

⁶² See NFLD and Labrador, Dept. Mines and Energy website – Online Access to Maps and Reports of the Geoscience Resources of Newfoundland and Labrador, <http://gis.geosurv.gov.nf.ca>.

Currently, the study area for the proposed *Akamiauapishk*^u (Mealy Mountains) National Park, which the proposed TLH project passes through, is designated as “Exempt Mineral Lands” which precludes any new mineral claims. Accordingly, we do not expect an increase in mineral exploration on the Eagle River plateau as a result of highway construction. However, should exploration once again be permitted, and if commercially viable deposits were discovered, the TLH would undoubtedly facilitate the development of a mine. Mineral exploration, including prospecting, the cutting of survey lines, test drilling, establishment of exploration camps and other activities and the construction and operation of mines would have a variety of additional effects which can only be assessed through further study.

With respect to quarry materials, the proposed TLH will require such materials for construction. After construction has terminated, sites near communities may be re-licensed for commercial operation. This has already occurred along the TLH near Happy Valley-Goose Bay. The operation of these quarries could result in cumulative effects on Innu land use.

Elsewhere in this report, we referred to the possible increase in adventure tourism and outfitting activities that could follow road construction. Both Innu and non-Innu could commence such activities in the vicinity of the road which would add to the effects of existing outfitter operations on Innu lands. Non-Innu have a head-start in this industry in terms of existing facilities, access to capital and technical experience, meaning that they presently enjoy a competitive advantage over the Innu and most other new entrants as far as future operations may be concerned. By the time Innu business people emerge who wish to invest in tourism enterprises that operate in the *Akamiauapishk*^u (Mealy Mountains) area, non-Innu may already occupy the best locations (expressed qualitatively in terms of wildlife and fish abundance and scenery). To some extent, this has already occurred as existing operations at *Iatuekupau* (Park Lake) and other lakes attest. An increase in tourism operations along the road, particularly in the *Akamiauapishk*^u (Mealy Mountains) area, is a high probability, and such operations constitute significant potential effects in terms of Innu land use.

5.5 Mitigation

Mitigation is required to deal with both the construction and operations phases of the project as far as Innu land use is concerned. The mitigation of possible biophysical effects that might reduce the abundance of wildlife and fish species harvested by the Innu is discussed in the main body of the EIS. Such mitigation measures also end up being mitigation measures for Innu land use because of the relationship between Innu harvesting and species abundance.

5.5.1 Construction

We noted in the effects section above that it is not possible to determine if, when, and where, Innu will be harvesting in the vicinity of the preferred route. Highway routing across the north end of *Uinikush* Lake is a special concern. One partial solution to the

access problems here, subject to road engineering considerations, would be to realign the road 1.5 km or more to the north to frustrate access to the lake by boaters.⁶³

With respect to the possible effects of harvesting by construction personnel on Innu land use, based on the proponent's estimates of the size and duration of work camps, we do not believe that the numbers of workers involved and the small quantity of fish and game they are likely to harvest in their free time will be in numbers sufficient to have a significant effect on species abundance. However, we note that the policies of the Voisey's Bay Nickel Company (VBNC) and the Labrador Hydro Project have been to prohibit such activities by workers for health and safety reasons. The VBNC Environmental Protection Plan (September 19, 2002 version, section 4.2) says "'Wildlife encounters pose a risk for stress or injury to both the wildlife and site personnel. Control measures and environmental protection procedures have been put in place to minimize the risk to wildlife and humans. As a protection measure, hunting, trapping or fishing by project personnel is not permitted on site.'" Similar policies for the Trans Labrador Highway should be considered if work camps are established in close proximity to Innu camps or harvesting areas, or if the size and duration of work camps exceeds present expectations.

Whether harvesting by workers is permitted or not, in the lead-up to construction work each season, the proponent should maintain contact and undertake consultation with the Innu Nation to determine whether Innu families and harvesters will be establishing camps at *Unikush*, *Mashku-nipi/ Kamishikamat*, *Eshkanat katshipukutiniht*, or *Nekanakau* during the construction season. Construction managers and the proponent could meet directly with the Innu Nation and its members who are using the area in order to arrange the best measures to minimize disturbance. Such measures could include curtailing or postponing blasting and similar activities that could disrupt Innu camps. Construction managers and workers would have to be educated with respect to Innu presence, including the need to respect their privacy and the importance of hunting and fishing activities in Innu culture. If harvesting by workers is permitted during the construction phase, monitoring may be required to ensure that it does not result in land use conflicts, poaching or unsustainable harvesting pressures.

With respect to public access to the road during the construction phase, a complete interdiction on public use of the road could be imposed until it is completed in order to control potential over-harvesting and poaching pending the introduction of longer-term mitigation measures. This would give wildlife and fish resource managers time to collect additional baseline monitoring data, if required, in preparation for a longer term monitoring programme. It would also help protect core Innu land use until longer-term mitigation measures are implemented. However, this mitigation measure is not practical due to the immense problem of trying to keep snowmobilers and ATV users off the road 24 hours per day.⁶⁴

⁶³ However, the road would cross a brook at this point which may still provide easy boating access to the lake.

⁶⁴ In order to mitigate the effects of new or improved access from roads related to over-harvesting, the Yukon government has, in the past, prohibited "hunting for a specified distance to either side of some

5.5.2 Operation

In the effects section of the report (Section 5.0), we identified increased access to core Innu lands as the most significant potential effect resulting from TLH construction. The highway would bring many more non-Innu and Innu harvesters to the region, more cabins and tourism activities, mineral exploration (e.g. prospecting) and other activities which could negatively affect wildlife and fish abundance or interfere with Innu harvesting. Innu could be displaced from their customary camping and harvesting locations or experience significant declines in wildlife and fish populations that they have been harvesting since time immemorial. A greater Innu presence in the area could also result in over-harvesting and the erosion of the natural resource base of their domestic economy.

As experience in other parts of the province and North America has shown, mitigation of such effects can be a challenge, but governments have the legal tools at their disposal to implement effective mitigation if applied in a timely and comprehensive fashion. We envisage three mitigation scenarios to deal with these effects, each with different outcomes in terms of their effectiveness and the level of residual effects (significance) that remain. They include (1) existing provincial and federal legislation, (2) Innu land selection and co-management under a treaty with the federal and provincial governments, and (3) the inclusion of core Innu lands in a new *Akamiauapishk*⁶⁵ (Mealy Mountains) National Park. We believe that these mitigation scenarios are complementary, not exclusive, that is, scenario 2 builds on the effectiveness of scenario 1. All three scenarios (1, 2 and 3) are, in principle, mutually compatible in operation.

5.5.3 Existing provincial and federal legislation

Federally, the *Fisheries Act* and *Migratory Birds Convention Act* (MBCA) administered by the Departments of Fisheries and Oceans (DFO) and Environment Canada (Canadian Wildlife Service - CWS) respectively are the two main mechanisms by which harvests can be regulated.⁶⁶ However, DFO's track record in terms of managing sports fishing has been spotty in recent years, as the Star Lake example mentioned above attests. Berkley Slade, a staff officer with DFO working on recreational salmon fishing says that his department recognized the problem at Star Lake, and subsequently took measures to deal with the effects of increased angling effort anticipated along the TLH (personal

roads. This establishes a no-hunting corridor which deters most hunters from taking advantage of easy access to big game" (e.g. ban on caribou hunting along the Dempster Highway) (Mychasiw and Hoefs, 1988:5).

⁶⁵ In the future, Innu governments in Labrador and Quebec will likely play an important role in regulating the harvests of their members, but the mechanisms by which this will occur, will not emerge until after treaties have been concluded. At the moment, Innu governing bodies have few formal legal mechanisms to regulate harvesting by their members. Nonetheless, the Innu Nation has in recent years acted on complaints concerning salmon fishing methods, and has been very proactive in getting its members and Quebec Innu to stop hunting caribou from the threatened *Akamiauapishk*⁶⁶ (Mealy Mountains) herd.

⁶⁶ Aboriginal people with recognized aboriginal or treaty rights under section 35(1) of the Canadian Constitution Act (1982) are able to harvest subject only to the requirements of conservation or other justified limits.

communication, 6 January 2002). Nine salmon rivers on the south coast of Labrador have been scheduled and the daily catch limit cut from four to two salmon following consultations with coastal residents. Furthermore, a new trout management zone was established for southern Labrador starting in the winter of 2002. Restrictions were applied to two lakes with known “trophy” trout, where the daily harvest limit was cut from ten fish to six, and the daily limit made the personal possession limit.

Slade notes that DFO encountered a problem at *Iatuekupau* (Park Lake) in the 1980s due to people flying in and removing large quantities of fish. The department dealt with this by scheduling the lake for salmon fishing between 15 June and 15 September each year, meaning that ice fishing was banned. With respect to other lakes on the Eagle River plateau, Slade says DFO is looking at imposing other restrictions on salmon and trout fishing in order to protect the stocks from over-harvesting. However, despite an agreement with the Labrador Metis Nation to employ five fishery guardians, and with the Innu Nation to employ two, DFO will need more resources and strategies to deal with fish harvesting along the Cartwright to Goose Bay section of the highway.⁶⁷ DFO has not presently allocated any additional funds to support the increased enforcement effort anticipated for this last leg of the highway.⁶⁸

We cannot assess the likely success of conservation and enforcement efforts by DFO with respect to salmon and trout in the core Innu land use areas in the project area without knowing more about the regulatory regime that will be established here and the enforcement resources available.

As far as migratory waterfowl are concerned, the *Migratory Birds Convention Act* (MBCA) gives the federal government the power to make regulations providing “for periods during which, and the areas in which...migratory birds may be killed, captured or taken [and] for limiting the number of migratory birds that a person may kill, capture or take in any period when doing so is permitted by the regulations.” In 2002, regulations under the Act established periods in the year when waterfowl could be hunted, as well as bag and possession limits. A complete interdiction on hunting harlequin ducks has been in place for many years. Also, regulations now require that non-toxic shot be used in all areas of Canada as far as migratory waterfowl are concerned.

The Eagle River plateau contains important habitat for Canada geese and ducks as noted elsewhere in this report. Over-harvesting is a real concern, but the CWS has no funding to establish an enforcement presence in the area (Bruce Turner, CWS, personal communication). In fact, CWS conducts no real monitoring of waterfowl harvesting and

⁶⁷Northland Associates Ltd. (1986:317-318) recommended in the Upper Humber/Main River Wood Harvesting Operation EIS that “consideration could be given to instituting special regulations on [the Main River]...to limit the number of anglers. This could only be done by Fisheries and Oceans and would require additional enforcement personnel to prevent poaching.”

⁶⁸DFO has a cooperative agreement with the Newfoundland and Labrador DFRA to share enforcement resources. This means that provincial conservation officers can conduct surveillance of angling activities and enforce the Fisheries Act. CWS has a similar arrangement with DFRA regarding waterfowl, but DFRA’s conservation resources are far from adequate to monitor and control waterfowl harvesting (Harry Martin, personal communication).

enforcement anywhere in Labrador with the exception of sporadic forays to the Strait of Belle Isle. CWS has only two enforcement officers for the entire province. While the CWS has cooperative enforcement arrangements with the RCMP and provincial wildlife officers, who are empowered to enforce the MBCA, other agencies tend to emphasize enforcement activities within their core mandates and jurisdictions, and as a consequence, may only enforce migratory bird regulations incidentally.⁶⁹

A start to addressing the CWS's lack of enforcement resources could be made with the hiring of Aboriginal guardians, a policy adopted by DFO several years ago. In any event, unless significant improvements are made in the near future to the CWS's enforcement capabilities, any new regulations concerning the harvest of waterfowl in the project area could have little effect in terms of mitigation. In other words, the mitigation of effects resulting from increased human access through the MBCA is likely to be limited.

Provincially, the *Wild Life Act*, and the *Lands Act* hold the best promise of providing meaningful mitigation as far as Innu land use in the project area is concerned, but the *Forestry Act* also provides regulatory protection for such use. Under the *Wild Life Act* the minister has the power to make regulations that (*inter alia*):

- “prohibit the hunting, taking or killing of wild life or classes of wild life whether in particular places or at particular times and seasons or by particular methods except under license or permit, or generally;”
- “provide for the issue of licenses or permits to fish for, take or kill a fish...;”
- “set aside reserves in which wild life or a specified class of wild life may not be hunted, taken or killed or may be hunted, taken or killed, subject only to conditions and restrictions set out in the regulations, and within which camping or travelling may be prohibited or may be permitted subject to restrictions, and fixing the limits of the reserves;”
- “control and regulate the conduct of and the issue of licenses to guides and other paid helpers...;”
- “protect, preserve and propagate the wild life and the control of shooting and hunting of wild life.”

Under the *Wild Life Act*, and its regulations, the province has prohibited hunting, shooting and snaring in numerous places including islands in Conception, Placentia, Fortune and Hare Bays, and in three ecological reserves for sea birds. In addition, bag limits and other restrictions (e.g. on snaring) are set out which restrict harvesting activities in various zones throughout the province as defined in a schedule. For small game, there are two zones in Labrador – one for the north and one for the south, the latter including the project area in its entirety. Furbearers are managed in two zones – one a small area in the Upper Lake Melville area, the other for the remainder of Labrador. Caribou are managed in multiple zones but a complete interdiction on hunting woodland caribou in the project

⁶⁹ In 2001, DFRA recorded 27 violations under the MBCA province-wide (DFRA News Release, 20 February 2002).

area applies. Hunting moose and black bears is controlled through “management areas” (see Government of Newfoundland, 2001).

These regulations, management areas and zones could be revised to provide additional protection to the wildlife and fish resources in areas made accessible by the TLH project.⁷⁰ Such protection is required if effects on Innu land use are to be avoided due to excessive hunting and fishing pressure. Moreover, regulations will have to be implemented quickly - from the very moment that the core Innu land use areas are made accessible to new users (which may occur even before the road is completed).

Regulations and their enforcement with respect to wildlife harvesting, ATV and snowmobile use on the Eagle River plateau and in other areas made accessible to hunters is the responsibility of the Department of Forest Resources and Agrifoods (DFRA). Ken Colbert, Regional Resource Director for DFRA in Labrador, said he is confident this Department will be able to cope with the demands placed upon his conservation officers when the TLH opens new areas to harvesting (personal communication). “We shouldn’t be overly taxed,” he stated, because of their excellent equipment (snowmobiles and boats) and staff. DFRA has ten conservation officers in Upper Lake Melville and seven on the south coast of Labrador. However, Colbert agreed that the Department does not conduct inland patrols (e.g. airborne) except in response to a complaint. Budgetary constraints mean that DFRA does not have adequate funds for airborne surveillance. With respect to inland fishing activities, a cloudy area of jurisdiction where provincial and federal responsibilities overlap, Colbert stated that DFO’s enforcement efforts are “minimal to non-existent.”

We were unable to verify if DFRA’s current resources are sufficient to enforce existing and new regulations that may apply to the project area. We have no way of predicting whether enforcement efforts will successfully mitigate the effects of the TLH project as they relate to ATV use and wildlife and fish harvesting. However, one future avenue to explore in attempting to predict the potential success of wildlife enforcement mechanisms is to collect data on the enforcement effort along existing roads. This could be done by reviewing monthly reports filed by conservation officers which contain information on the number of hours spent on patrol, complaints investigated, infractions discovered and charges laid (Harry Martin, personal communication). The information in the reports could be used to determine how much of the work by the officers is actually spent on conservation/enforcement work. We note that conservation officers have many responsibilities in addition to the enforcement of wildlife and ATV regulations. They are called upon to lay out timber cutting blocks in commercial forestry operations, monitor such operations, fight forest fires, and do administration as well. The addition of new territory to their area of responsibility may degrade their enforcement capacity. It will also make it more difficult for the officers to engage in preventative work (e.g. public

⁷⁰Northland Associates Ltd. recommended in the Upper Humber/Main River Wood Harvesting Operation EIS that “Consideration should be given to Government to establishing a controlled access policy for the project area. Increased access to the area with the attendant increases in legal and illegal hunting and harassment of wintering moose and caribou has been identified as a potential negative impact of the development” (1986:338-339).

relations concerning conservation) rather than pursuing complaints and investigating possible infractions. In any event, the Department's lack of resources to patrol off-road areas means that poaching and over-harvesting away from the TLH could well go undetected.

Under Section IV of the *Lands Act*, the province is empowered to establish a "Special Management Area" where the erection of buildings, leasing, licensing of conveying of lands, or "the application of those lands for agricultural, commercial, industrial, recreational, residential or other purposes" is prohibited. Establishing a "Special Management Area" in the *Akamiuapishk*" (Mealy Mountains) area, pending the outcome of the national park feasibility study and land claims negotiations with the Innu, would do much to control development in the short-term until long-term land use planning mechanisms can be implemented.

In contrast, the "Protected Road Zoning Regulations" under the *Urban and Rural Planning Act 2000* provide only limited protection from development along the TLH. These regulations apply to a strip of land that, at its maximum, is 400 metres from the centre line of a highway designated as a protected road. Rather than having as its goal the prevention of development along highway corridors, it allows for a very wide array of developments along highways in a more orderly fashion than might otherwise occur. While building gas stations and motels beside the highway could be controlled under these regulations, they would be unable to restrict hunting and fishing, commercial forestry, mining and other such developments beyond the 400 metre buffer. Both sections of the existing TLH (Goose Bay to Labrador City and Cartwright to Red Bay) are designated as protected roads.

In 2000, the province protected lands with Special Management Area status pending the establishment of a national park reserve in the Torngat Mountains in northern Labrador. This step was taken in the context of a memorandum of understanding on interim measures with the Labrador Inuit Association. No commercial, industrial or mineral development is allowed in this area, which is currently administered by the Department of Tourism, Culture and Recreation in close consultation with the Labrador Inuit Association.

Special Management Area status for the *Akamiuapishk*" (Mealy Mountains) area would mitigate certain cumulative effects associated with road development. However, such a designation would not address issues relating to harvesting activities and ATV use. Other legislation mentioned above would have to be employed to this end.

The provincial *Forestry Act* also provides the possibility of regulatory protection for Innu land use, namely, by providing for the regulation of commercial and domestic woodcutting in proximity to the new road. Such protection is required in FMD 19 because the TLH will facilitate commercial forest operations between *Tshenuamiu-shipu* (Kenamu River) and *Mishta-shipu* (Churchill River). The Act allows for the preparation of forest management plans which are "designated to organize timber harvesting, renewal and protection activities so as to provide for an optimum continuous supply of timber in a

manner consistent with other resource management objectives, sound environmental practices and the principle of sustainable development.” As mentioned previously, DFRA and the Innu Nation are nearing the completion of such a management plan. This plan anticipates the opening of the area as a result of road construction and will include measures to mitigate the effects of logging and forest access road construction. This plan will be submitted to environmental assessment under the provincial *Environmental Protection Act*.

5.5.4 Innu land selection and co-management provisions under a treaty

The Innu Nation is in the final stages of negotiating an Agreement in Principle (AIP) with the federal and provincial governments. Once the AIP is concluded, the three parties will negotiate a Final Agreement which will ultimately be ratified as a treaty by all three governments and receive constitutional protection. The AIP phase of the process will include an agreement by all parties on categories of land and the management powers and responsibilities that the Innu, and federal and provincial governments will exercise on each. It will also include an agreement on the amount of land (quantum) that will fall into each category and some form of resource management board that will make land use recommendations to responsible federal and provincial ministers. The Innu AIP will likely be similar to the AIP concluded with the Labrador Inuit Association (LIA) in 1999. In the LIA agreement, two primary land categories are designated – Labrador Inuit Lands and a Labrador Inuit Settlement Area.⁷¹ During the negotiation of the Final Agreement, the location of lands that will be included in each category will be decided.

Given the fact that a large portion of the Eagle River watershed is a core land use area for the Sheshatshiu Innu, we expect the Innu Nation to select land here under similar categories, that is, Labrador Innu Lands or the Labrador Innu Settlement Area. The Innu government powers or co-management arrangements that result in the region could play a significant role in mitigating the effects of the TLH.

If we use the LIA’s AIP as a guide to predicting the outcome of AIP negotiations between the Innu Nation and the federal and provincial governments, we can anticipate a division of powers and responsibilities among these three levels of government as they apply to lands in the TLH project area. Depending on what is decided in the AIP and Final Agreement negotiations (on which categories of land are selected in which locations), the maximum amount of protection for Innu land use in the TLH project area would probably be achieved if adjacent lands were designated as Labrador Innu Lands. Innu may well have an exclusive right to harvest wildlife and plants on these lands (see Section 12.2 of the LIA AIP) in addition to various powers to regulate land use, including the permitting of cabins and outfitting operations.⁷² Outside of Labrador Innu Lands, in the Settlement Area, non-Innu would be allowed to harvest wildlife and fish but a co-

⁷¹See the “Agreement-in-Principle Between the Inuit of Labrador and Her Majesty the Queen in Right of Newfoundland and Her Majesty the Queen in Right of Canada,” 10 May 1999 - <http://www.gov.nf.ca/laa/claimsaip/liaaip.htm>

⁷²However, even decisions by Innu government concerning Innu Lands would continue to be subject to federal and provincial laws of general application.

management board, analogous to the Torngat Wildlife and Plants Co-management Board, would make recommendations to the minister concerning harvesting restrictions, the establishment of protected areas for wildlife, plants and habitat, etc. What types of restrictions might apply to non-Innu in these areas is an open question, but should wildlife populations fall below a certain level, the Innu may have a right to a guaranteed annual harvest.

The foregoing is a sweeping overview of the types of land use planning possible in an Innu AIP and Final Agreement. Without knowing the exact provisions in these agreements and where different categories of land will be selected, we can have little confidence in our assessment of the effectiveness of treaty provisions in mitigating the potential effects of the TLH on Innu land use. One thing is clear, however. A Final Agreement between the province, federal government and the Innu is still several years away, meaning that the provisions of the Agreement that may assist in mitigating project effects may not come into force until the Cartwright to Goose Bay section of the TLH is completed. As a result, **interim measures** will be required to mitigate project effects on Innu land use. We note that the LIA was successful in negotiating interim measures to protect Inuit interests in northern Labrador using provisions in existing federal and provincial legislation.

5.5.5 Proposed *Akamiuapishk*" (Mealy Mountains) National Park

The third mitigation scenario envisaged is the proposed *Akamiuapishk*" (Mealy Mountains) National Park. This scenario holds the greatest potential for protecting Innu land use in the area of the proposed TLH.

As noted previously, the planning for this park has only just begun even though it has been on the Parks Canada agenda for more than 20 years. A feasibility study is being prepared which should be completed in two years (Gary Pittman, Parks Canada, personal communication). Given the uncertainty of the park's boundaries in relation to the TLH, it is difficult to determine what benefits a national park would bring to the Innu in terms of mitigating highway effects on their land use. Restrictions on non-Innu land use in the park will be decided through a "multi-stakeholder" process of consultation, and a land transfer agreement with the province, but ultimately, non-Aboriginal land use in the park will be managed through the *National Parks Act*.⁷³ Non-Aboriginal people will be subject to regulations that may restrict harvesting wildlife and fish, operating snowmobiles and ATVs, building cabins, or carrying on commercial outfitting operations in the park. However, some non-Aboriginal activities are likely to be "grand fathered," that is, allowed to continue for a fixed period of time.

Innu land use within the park, on the other hand, would be managed under the terms of an Impact Benefit Agreement and the provisions of the Innu treaty as spelled out in the Final Agreement. For Innu treaty rights to apply in the park, the Innu would have to select

⁷³ The TLH, should it traverse the area of the proposed national park, would be a provincial government highway. However, provisions for maintenance operations, truck stops and other transportation facilities along the road would be spelled out in the aforementioned land transfer agreement.

lands there under the Settlement Area category. Some kind of a co-management board would be established comprised of Parks Canada, Innu and representatives of other Aboriginal groups with treaty rights in the park, which would make decisions concerning Innu harvesting and other land use practices. Maintaining conservation objectives would be a priority for Parks Canada.

Following the completion of the feasibility study, public consultation and negotiation of the land transfer agreement, a National Park Reserve would be established pending the completion of treaty negotiations with the Innu. In the short-term, pending the establishment of a park and the conclusion of treaty negotiations with the Innu, both of which have significant implications for the mitigation of TLH effects on Innu land use, interim protection measures are required.

We have suggested that existing government legislation such as the *Lands Act* and its Special Management Area provisions could provide such interim protection. However, we wish to reiterate the point that solid mitigation measures must be implemented before construction begins. This is a real risk that significant damage could be done to wildlife and fish resources in the project area in the period between Phase III construction and the implementation of land use plans and a regulatory regime.

5.6 Residual environmental effects

Residual environmental effects are those that remain after mitigation measures have been implemented. In the case of the TLH, the magnitude, geographic extent, duration, and frequency of residual effects depends both on the mitigation measures which may be applied in the interim, and in the final analysis, the outcome of the Innu treaty negotiations, and the decisions taken with regard to the potential establishment of the proposed *Akamiauapishk*^u (Mealy Mountains) National Park.

We noted above that in terms of their capacity to mitigate highway effects on Innu land use, the establishment of a national park, which would completely enclose the Eagle River plateau portion of the road, is presently the most effective option, followed by Innu land selection, followed by the options available under existing federal and provincial land use and wildlife conservation legislation. However, to reiterate an important point made previously, these mitigation scenarios are complementary, not exclusive, that is, scenario 2 builds on the effectiveness of scenario 1. All three scenarios (1, 2 and 3) are, in principle, mutually compatible in operation.

With respect to the latter, the efficacy of specific legislation to mitigate effects, be it the *Migratory Birds Convention Act* (MBCA) or the *Wild Life Act*, depends on the initiative and capacity of governments to apply specific regulations, and to support effective enforcement efforts. Without effective mitigation, the adverse effects of the TLH on Innu land use will be major (significant). In order to reduce these potential adverse effects to moderate (significant), minor (not significant) or negligible (not significant), a mix of legislation and enforcement efforts is recommended, especially in the interim period pending new arrangements under a treaty and/or a possible national park. The Star Lake

experience with its rapid influx of fishers and unsustainable angling effort must not be repeated on the Eagle River plateau.

In what follows, we enumerate the predicted residual adverse effects of the TLH project under the three mitigation scenarios described above: (1) mitigation using provisions in existing legislation; (2) mitigation under the terms of a land claims agreement with the Innu Nation; and (3) mitigation under the terms of a possible *Akamiauapishk*" (Mealy Mountains) National Park. Given the different intensities in contemporary land use between the Eagle River plateau and the *Tshenuamiu-shipu* (Kenamu River) to *Mishta-shipu* (Churchill River) area, and the fact that a separate mitigation scenario could apply on the Eagle River plateau because of the proposed national park, we have divided the effects analysis between these two geographic areas. Thus, we present the rationale for assigning different effects ratings according to the category of land use and location of the land use for each of the three mitigation scenarios.

5.6.1 Scenario 1 Rationale

Table 6. Scenario 1 - Residual adverse effects (significance) regarding Innu land use, mitigation using existing legislation

Area	Land use category	Construction	Operation	Accidental Events
Eagle River plateau	Hunting	Minor	Moderate to Major (Significant)	Negligible to Minor
	Fishing	Minor	Moderate to Major (Significant)	Negligible to Minor
	Trapping	Negligible to Minor	Minor	Negligible to Minor
	Gathering & woodcutting	Negligible	Minor	Negligible to Minor
	Occupancy	Minor	Moderate to Major (Significant)	Negligible to Minor
Kenamu to Churchill	Hunting	Minor	Minor to Moderate (Significant)	Negligible to Minor
	Fishing	Minor	Minor to Moderate (Significant)	Negligible to Minor
	Trapping	Negligible	Minor	Negligible to Minor
	Gathering & wood cutting	Negligible	Minor	Negligible to Minor
	Occupancy	Minor	Minor to Moderate (Significant)	Negligible to Minor

Under this scenario, where provincial and federal legislation is fully implemented in the TLH project area, with effective monitoring and enforcement, Innu land use will still

experience minor to major significant adverse residual effects. These residual effects are more likely on the Eagle River plateau for the following reasons:

- it is a core Innu land use area;
- the TLH would provide easy access to most of this core area by way of natural travel corridors;
- all the Innu who use this area could be affected;
- competition with non-Innu or Quebec Innu over wildlife and fish would increase even if a Special Management Area is designated;
- even if there were no declines in wildlife and fish abundance, the occupancy component of Innu land use (e.g. sense of independence, control over territory, etc.) may be adversely affected;
- adverse effects in the form of increased competition with non-Innu or Quebec Innu may outweigh the benefits of the highway for the Labrador Innu such as easier access to their camps and harvest areas.

We have rated the residual effects of the project on Innu trapping as minor but this could increase to moderate in the future depending on the extent to which trapping/hunting by non-Innu or Quebec Innu, or accidental events, affect Labrador Innu harvests of beaver. Marten, mink, weasel, muskrat, fox, and lynx are not currently trapped in large numbers by the Labrador Innu as noted previously.

Residual effects of the TLH on fishing in the Kenamu to Churchill area during the operations phase have been rated minor to moderate (significant) due to the possible effect of salmon fishing by Innu and non-Innu downstream of the bridge crossing on *Tshenuamiu-shipu* (Kenamu River). We have recommended that DFO include it in its list of scheduled salmon rivers and implement a monitoring programme to assess harvest effort and population levels there.

There is a great deal of uncertainty in the effects predictions under this scenario due to the uncertainty surrounding the way in which provincial and federal legislation will be applied to mitigate project effects on Innu land use and the efficacy of monitoring and enforcement efforts. However, the extent to which such legislation is NOT applied, and/or enforcement is ineffective, will increase the certainty that moderate (significant) or major (significant) effects will occur. Conversely, should the full range of legislative measures, and effective monitoring and enforcement efforts be implemented, the residual effects may well approach the minor side of the spectrum.

5.6.2 Scenario 2 Rationale

Table 7. Scenario 2 - Residual adverse effects (significance) regarding Innu land use, mitigation under the terms of an Innu land claims agreement (i.e. treaty)

Area	Land use category	Construction	Operation	Accidental Events
Eagle River plateau	Hunting	Minor	Moderate (Significant)	Negligible to Minor
	Fishing	Minor	Moderate (Significant)	Negligible to Minor
	Trapping	Negligible to Minor	Minor	Negligible to Minor
	Gathering & woodcutting	Negligible	Minor	Negligible to Minor
	Occupancy	Minor	Moderate (Significant)	Negligible to Minor
Kenamu to Churchill	Hunting	Minor	Minor to Moderate (Significant)	Negligible to Minor
	Fishing	Minor	Minor	Negligible to Minor
	Trapping	Negligible	Minor	Negligible to Minor
	Gathering & wood cutting	Negligible	Minor	Negligible to Minor
	Occupancy	Minor	Minor to Moderate (Significant)	Negligible to Minor

In this scenario, construction of the TLH would precede the completion of land claims negotiations with the Innu Nation, so this mitigation scenario differs from the preceding one only during the operations phase. The residual effects of accidental events (e.g. forest fires, oil spills) would be the same as the preceding scenario, as they are by definition “accidents” - nothing in the land claims agreement that could prevent such occurrences.

Prior to a land claims agreement (in the absence of any interim measures), competition for wildlife and fish resources can be expected because non-Innu and Quebec Innu would have access to the core land use area on the Eagle River plateau. We expect non-Innu and Quebec Innu to travel over much of this area for hunting and fishing activities.

However, under a land claims agreement, the Labrador Innu can be expected to gain more control over land-use decisions, including an ability to regulate access and activities by non-beneficiaries of the treaty on Innu lands. Such regulatory capacities, when exercised by a future Innu government, could go a long way to mitigating the effects of the project on Innu values concerning independence and control and other aspects of their occupancy (defined previously).

In this scenario, we continue to rate the residual effects of the TLH on fishing in the Kenamu to Churchill area during the operations phase as minor to moderate (significant)

due to the possible effect of salmon fishing by Innu and non-Innu downstream of the bridge crossing on *Tshenuamiu-shipu* (Kenamu River).

There is a great deal of uncertainty about the residual effects predictions under this scenario due to the fact that land claims negotiations between the Innu Nation, federal and provincial governments have not yet resulted in an AIP. Accordingly, we do not know if there are specific provisions in the treaty that could mitigate the effects of the TLH project. It will be many years before we know whether the treaty and the way it is implemented will succeed in mitigating the effects of the TLH project on Innu land use.

5.6.3 Scenario 3 Rationale

Table 8. Scenario 3 - Residual adverse effects (significance) regarding Innu land use, mitigation under the terms of an *Akamiuapishk*^u (Mealy Mountains) National Park

Area	Land use category	Construction	Operation	Accidental Events
Eagle River plateau	Hunting	Minor	Minor	Negligible to Minor
	Fishing	Minor	Minor	Negligible to Minor
	Trapping	Negligible to Minor	Minor	Negligible to Minor
	Gathering & woodcutting	Negligible	Minor	Negligible to Minor
	Occupancy	Minor	Minor	Negligible to Minor
Kenamu to Churchill	Hunting	Minor	Minor to Moderate (Significant)	Negligible to Minor
	Fishing	Minor	Minor	Negligible to Minor
	Trapping	Negligible	Minor	Negligible to Minor
	Gathering & wood cutting	Negligible	Minor	Negligible to Minor
	Occupancy	Minor	Minor to Moderate (Significant)	Negligible to Minor

Under the national park scenario, the residual effects of the TLH on Innu land use will probably be minor as far as the Eagle River plateau is concerned. The effects off the plateau in the *Tshenuamiu-shipu* (Kenamu River) to *Mishta-shipu* (Churchill River) remain the same as under the previous two scenarios because these areas are expected to be largely outside of the proposed National Park, as they are not presently included within the park study boundaries. As well, construction would precede the establishment of the park, so the environmental effects which arise during the construction phase would not be mitigated by the establishment of a National Park. We note that the most significant effects in the area of the Kenamu-Churchill corridor during the operational phase will likely arise as a result of cumulative effects of other land use decisions, notably any future forestry operations in that area.

We continue to rate the residual effects of the TLH on fishing in the Kenamu to Churchill area during the operations phase as minor to moderate (significant) due to the possible effect of salmon fishing by Innu and non-Innu downstream of the bridge crossing on *Tshenuamiu-shipu* (Kenamu River). This crossing and the section of the river downstream as far as *Utshashumeku-shipiss* (Salmon River) are not included in the study area for the *Akamiuapishk*" (Mealy Mountains) National Park and are unlikely to be included in it, if and when it is established. As a result, provisions of the *National Parks Act* and co-management arrangements with Aboriginal groups that would protect salmon in the river system would not apply.

The residual effects of accidental events would probably decline under a national park scenario because stricter land use controls would apply resulting in less development along the road, and as a result, a lower risk of forest fires, spills of harmful substances and other events.

There is less uncertainty about the effects predictions under the national park scenario than under the previous two given what we anticipate in the way of Aboriginal land use policies under the proposed *Akamiuapishk*" (Mealy Mountains) National Park (Gary Pittman, Parks Canada, personal communication). However, the benefits of the park as far as mitigating the TLH's effects on Innu land use are concerned could fail to materialize if it were not established or its boundaries exclude the core Innu land use area. There remains some uncertainty on both these points, despite the interest of the federal government in establishing a national park in this area.

Under all of the above scenarios, Innu land use could be negatively affected by over-harvesting by the Innu themselves, greatly facilitated by road access. In this case, co-management in the context of a national park or resource management board set up under the treaty, and Innu government regulations must provide the mechanisms to ensure that over-harvesting and other activities do not occur. There remains considerable uncertainty as to the extent of jurisdiction and regulatory mechanisms that the Innu government may be able to exercise under a treaty to manage the anticipated increases in Innu harvesting in this area which will follow construction of the TLH.

5.7 Monitoring

As noted in much of the environmental assessment literature, one of the most important rationales for monitoring is that it allows proponents, regulators and affected members of the public to determine if mitigation measures are effectively reducing or eliminating project effects (i.e. are the effects predictions accurate given the mitigation measures that were implemented?).⁷⁴ We believe that a monitoring process is required for the TLH Phase III during both the construction and operations phases because of the considerable

⁷⁴ According to Bennett (1991:111), "Roads are designed primarily for human transportation and consequently environmental management will be most effectively achieved when wildlife managers work together with road construction and management authorities, and with other bodies such as local government, utilities, landowners and fire protection authorities that also have an interest in roadside management."

uncertainty about both the form and effectiveness of the mitigation options which may be applied to address effects on Innu land use. Human communities are extremely variable in their responses to environmental change. Additionally, many of the actions that will be required to mitigate effects on Innu land use cannot be implemented by the proponent (WST) but will require regulatory change or other actions by government. Accordingly, given these uncertainties, a monitoring (or “follow-up”) program is recommended to ensure that the project’s effects on Innu land use are being mitigated effectively.

The *Canadian Environmental Assessment Act* and the provincial *Environmental Protection Act* both provide for the establishment of monitoring programmes where it is considered necessary or desirable to determine the accuracy of environmental effect predictions, assess the effectiveness of mitigation measures, evaluate compliance with approval conditions or monitor for unanticipated effects.

An effective monitoring process assumes that adequate baseline data have been collected in advance of project construction and operation, so that changes in the natural environment (e.g. wildlife and fish abundance) following completion can be measured against the baseline. Once the baseline data have been collected, they must be managed in such a way that they can serve effectively in subsequent monitoring, and monitoring research methodologies must be comparable to those employed in the collection of the baseline data in the first place.

Should there be inadequate baseline data for the purpose of monitoring, data gaps should be filled as quickly as possible. For example, it may be necessary to establish a baseline regarding present fishing and hunting efforts in areas accessible from the road prior to the completion of construction, so that any increased angling and hunting effort can be detected, and the possible adverse effects on Innu harvesting during the operations phase analyzed. Additionally, baseline information on the presence and abundance of various game species (i.e., fish, migratory waterfowl) will be necessary for such an analysis.

If the project goes ahead according to the proposed schedule, with completion in 2008, the proponent and wildlife, fish, and land management agencies should have sufficient time to fill any important data gaps, so that an adequate baseline for monitoring can be established prior to highway operation. However, as we noted previously in the mitigation section, more and more of the project area will become accessible as bridges are built and the two ends of the road approach one another. Unless mitigation measures are applied, people may rapidly extend their land use into the core Innu land use area before adequate baseline data have been collected, the end result of which would be to compromise the effectiveness of subsequent monitoring.

As far as project monitoring during the construction phase is concerned, we recommend that an Innu environmental monitor be retained and trained to monitor the construction process and that he or she report to the Innu Nation and the proponent on a regular basis - immediately should problems arise. There are numerous precedents for direct Innu involvement. Innu and Inuit monitors are at work at the Voisey’s Bay Nickel Company’s construction site for its mine/mill facility in northern Labrador. Innu monitors are also

involved in monitoring forestry operations in Upper Lake Melville, and Innu Fisheries Guardians have worked alongside DFO for more than a decade in the monitoring and enforcement of fisheries regulations.

With respect to longer-term monitoring during the operations phase, we wish to enumerate many of the project elements and residual effects that could be monitored. We also propose a process that would maximize Innu involvement in the monitoring. Such involvement has obvious benefits. It would provide the proponent and regulatory agencies with direct access to Innu experience and observations about project effects, as well as Innu environmental knowledge concerning wildlife and fish habitat and animal population dynamics that could have a direct bearing on project components.

Among the possible project attributes and effects that could be monitored, we suggest that the following be considered:

- the use of snowmobiles and ATVs in relation to the road;
- Innu harvesting activities in the core land use areas made accessible by the road including statistics on the numbers of animals harvested;
- characteristics of non-Innu users of the road (destination, purpose of using the road, type of land use along it, etc.);
- locations where Innu and non-Innu camps and cabins (if permitted) are established;
- harvest locations and effort by non-Innu and Quebec Innu;
- abundance of wildlife and fish (e.g. at salmon pools). The species to be monitored include caribou, beaver, marten, porcupine, ducks, geese, trout and salmon;
- domestic wood cutting in areas accessible from the road;
- enforcement effort and effectiveness;
- contaminants monitoring with respect to lands and waters adjacent to the road;
- ancillary activities facilitated by the road such as the development of adventure tourism and outfitting operations;
- local citizen perceptions/observations of road effects.

Social and natural science methodologies (e.g. surveys of hunters and fishers, land use mapping, etc.) are available that would permit a monitoring programme to collect relevant data on each of the matters presented above.

As for process, a monitoring programme could be established which involves the Innu, other people directly affected by the road, the proponent, and government agencies that are mandated to manage wildlife, fish and other resources in the area. Independent scientific expertise could be sought when necessary.

Innu participation is best organized by the Innu Nation's Environment Office which is already developing considerable expertise in co-managing commercial forestry operations in Labrador, participates cooperatively with VBNC in Voisey's Bay mine/mill monitoring, and works with university researchers and government wildlife agencies in conservation programmes and environmental research. The Office has personnel with

GIS and Innu environmental knowledge expertise and undertakes community education work around environmental issues. It is well placed to assume additional monitoring responsibilities in relation to the TLH.

A monitoring programme will not be able to fulfill its mandate without resources. Serious consideration must be given, therefore, to the problem of how to finance a long-term programme of this nature. Whatever the solution, it will probably require a cooperative, partnership approach involving the proponent and all the government departments and agencies with resource management responsibilities in the area.

Annual reports on the results of the monitoring programme could be prepared and made public.

As Penn notes (2000:2), a monitoring programme should be seen as a planning tool, and it should be adaptable and capable of responding to changing objectives. It should also be manageable, which means that it may well be necessary to limit both the scope and number of issues covered - at least at the beginning.

6.0 Conclusions and recommendations

We have presented an assessment of the potential environmental effects of the TLH Phase III with respect to Labrador Innu land use by examining comparative situations from Newfoundland and Labrador and elsewhere in North America.

In conducting this assessment, we quickly recognized the difficulty in quantifying the environmental effects which have resulted from other road projects, since virtually all of the environmental effects predictions made in the course of environmental assessments conducted on major new road works in northern environments have not been followed-up with monitoring research. We were nevertheless able to make what we believe are realistic and well-informed predictions of the potential effects of the TLH Phase III on Innu land use based on data from governments (Aboriginal, federal, and provincial), academic research, personal observations of field-based professionals, and publicly documented environmental studies.

The single most likely effect of the highway corridor, (resulting in both short- and long-term consequences) is increased access and increased land use by both Innu and non-Innu alike. Increased access will undoubtedly result in significant changes to existing Innu land use patterns. Whether these effects are negative or whether they result in benefits to Innu individuals, and to the Innu as a whole, will depend largely on the success of mitigation measures, particularly under the mitigation scenarios we have described.

Increased access has the potential to dramatically increase the level of harvesting by Innu and non-Innu alike in this expanse of formerly remote territory. Dramatic increases in harvesting activities or even a concentration of such activities in areas most accessible from the road could lead to significant declines in species abundance and serious long-term reductions in future harvesting success in accessible areas. We expect this effect to

commence with the start of construction unless mitigation measures are brought into effect before then.

One of the positive effects of increased access to the Eagle River plateau as far as the Innu are concerned is that their land use in the area could increase. Current trends in Innu land use show expanded use of the existing Labrador road network for harvesting and cabin building, especially in the context of limited support for travel to remote territory under the Sheshatshiu Innu Band Council's Outpost Programme. This trend is likely to continue, with families that have a long-time association with the *Akamiuapishk*^u (Mealy Mountains) area spending more time there.

However, expanded Sheshatshiu Innu use of the area will likely occur in the face of greatly increased competition with non-Innu and Innu from Quebec. An increased presence of Labrador and Quebec Innu in the *Akamiuapishk*^u (Mealy Mountains) region could result in heightened pressure on wildlife and fish populations. Combined with non-Innu harvesting, the aggregate effects could see significant reductions in wildlife and fish abundance unless conservation measures are implemented.

Potential effects would certainly not be limited to the road corridor. The preferred Phase III route intersects several natural travel corridors which will give hunters and fishers relatively easy access to much of the Eagle River plateau – by snowmobile in the winter and spring, and by boat in the summer and fall. As a result, the geographic extent of possible highway effects could be quite large.

We have identified a number of places along the preferred route of the TLH where access to the surrounding hinterland is made easy by natural corridors. One area is the north end of *Unikush* Lake. With the proposed TLH routing, hunters and fishers will be able to park their vehicles at this location and boat through a large network of lakes that are fully within customary Innu land use regions. *Mishtashini*, *Pepauakamau*, *Uapanatsheu-nipi*, *Eshkanat katshipukutiniht*, *Mashku-nipi* and *Nekanakau* will all be accessible by boaters launching from the north end of *Unikush*. During the winter, the road will make these lakes accessible from other points as well including a natural corridor to the east of *Mashku-nipi*, and another at the northeast end of *Nekanakau*. Travel to the north on snowmobile will also be easy. Using natural corridors, *Iatuekupau* (Park Lake) and *Enakapeshakamau* will be readily accessible as well as all of the valleys that run east-west across the top of the plateau. Ice-fishing throughout this area, starting with the best-known locations such as *Iatuekupau* (Park Lake), runs the risk of seriously reducing fish stocks.

Further west, *Tshenuamiu-shipu* (Kenamu River) has been an important salmon fishing river for the Innu since time immemorial. In the pre-settlement period, the Innu harvested salmon at the mouth of the river and near its confluence with the *Utshashumeku-shipiss* (Salmon River). While the river is not currently a scheduled salmon river, it continues to support a significant Innu salmon fishery downstream. With the construction of the TLH Phase III, fishers may be able to access the river's confluence with *Utshashumeku-shipiss* (Salmon River) from the proposed bridge

crossing. Easier access to this junction could result in over-harvesting of salmon, especially if there is inadequate regulation and surveillance of the harvesting effort there. Toward *Mishta-shipu* (Churchill River), we identified an access concern just east of the *Mush-nipi* area of Innu land use, approximately 12 km along the preferred route (A3) from the river.

Commercial forestry, mineral exploration and development, and tourism are considered the three most likely categories of cumulative effects associated with the TLH Phase III between Cartwright and Happy Valley-Goose Bay. The construction of the proposed highway through the southern portion of Forest Management District 19, and a bridge across *Mishta-shipu* (Churchill River), will open the black spruce forests on the south side of the Churchill River to commercial exploitation. Future commercial harvesting of these forests is currently the subject of negotiations between the Innu Nation and the provincial Department of Forest Resources and Agrifoods, with good progress having been made on a management plan.

In light of the effects noted thus far, all of which are facilitated by increased access afforded by the highway corridor, we considered the effect that building a road through the Eagle River plateau could have on the establishment of a new national park. Should the construction and operation of the TLH result in effects that detract from the values and objectives underlying park establishment, there is a risk that the park, when it is finally established, could exclude significant Innu land use areas. The Innu Nation has endorsed the establishment of the national park, and would like to see the core Innu land use area on the Eagle River plateau included in it.

Three mitigation scenarios were outlined to deal with the possible effects of the preferred route of the highway, each with different outcomes in terms of effectiveness and the level of residual effects (significance). The mitigation scenarios include (1) regulation under existing provincial and federal legislation, (2) Innu land selection and co-management under a treaty with the federal and provincial governments, and (3) the inclusion of core Innu lands in a new *Akamiupishk*^u (Mealy Mountains) National Park. The establishment of a national park (scenario 3) which would encompass all of the Eagle River plateau portion of the road, is considered the most effective option, particularly in combination with Innu land selection under a treaty s (scenario 2), followed by the options available under existing federal and provincial land use and wildlife conservation legislation (scenario 1). However, we wish to stress the point that these scenarios are complementary, not exclusive, that is, scenario 2 builds on the effectiveness of scenario 1. All three scenarios (1, 2 and 3) are, in principle, mutually compatible in operation.

We rated the residual effects of the proposed TLH Phase III on Innu land use as minor to major (significant) because of the uncertainty concerning the extent to which the federal and provincial governments would implement all of the legislative mechanisms in their respective areas of jurisdiction to prevent over-harvesting and mitigate other potential effects on Innu land use.

Without adequate mitigation, monitoring and enforcement, Labrador Innu face the possible depletion of fish and wildlife species in a core land use area. Competition with non-Innu may also mean that a significant portion of the Sheshatshiu Innu population experiences a significant loss of independence and control in relation to the *Akamiuapishk*^u (Mealy Mountains) area, and that many of the cultural attributes of land occupancy (e.g. history, religious practice, sense of community, etc.) are eroded as well.

Mitigation using a range of complementary regulatory instruments is required, at least in the short-term, pending the completion of negotiations concerning the proposed national park and a treaty with the Labrador Innu. Should regulation be thoroughly applied, with the view to protecting species abundance, and therefore harvesting success and other important aspects of Innu land use in the project area, residual effects could approach the minor side of the spectrum. However, should regulation be applied inconsistently, in a piecemeal fashion, or come too late after the commencement of highway construction, the effects could tend toward the moderate (significant) to major (significant) side of the spectrum.

While there is considerable uncertainty in our effects predictions under existing legislation (scenario 1), there is less uncertainty about such predictions under the national park scenario (scenario 3), particularly if combined with Innu land selections/treaty provisions under scenario 2. However, as already noted, all the benefits of the park or Innu land selections as far as mitigating the TLH's effects on Innu land use are concerned could fail to materialize if a national park were not established, if the park's boundaries exclude the core Innu land use areas, or if Innu land selection options and/or co-management provisions under a treaty are insufficient in size or scope.

A requirement for monitoring the residual effects of both the construction and operations phases of the highway is an integral recommendation of this report. Without monitoring programmes, the proponent, responsible authorities or the Innu themselves cannot reliably determine whether effects predictions are accurate and mitigation measures are working. A number of features of the proposed highway during the operations phase were suggested as candidates for monitoring programmes. The direct involvement of the Innu in such monitoring programmes would provide the proponent and regulatory agencies with direct access to Innu experience and observations about project effects, as well as Innu environmental knowledge concerning wildlife and fish habitat, and animal population dynamics that could have a direct bearing on project/environment interactions.

Throughout the effects assessment section of this report, we made a number of suggestions and recommendations. These include:

- during the construction phase of the proposed TLH Phase III, the proponent should consider routing alternatives, including realignments of the preferred route at *Unikush* as far away as practical so as to make it difficult for people to gain aquatic access to *Unikush* and the *Mishtashini-Nekanakau* network of lakes;
- in advance of construction each season, the proponent and construction managers should meet with the Innu Nation and Innu families who plan to be in the

- construction area to discuss specific mitigation measures related to construction (e.g. scheduling of blasting operations, the location of construction camps);
- construction managers and workers should be educated with respect to the Innu presence on the plateau, including the need to respect their privacy, and not to interfere with Innu hunting and fishing activities;
 - a variety of legislative mechanisms exist (both federal and provincial) that could go a long way to mitigating the environmental effects of the proposed TLH Phase III on Innu land use. These mechanisms include provisions in the provincial *Forestry Act*, *Lands Act* (i.e. Special Management Areas), and *Wild Life Act*, and the federal *Fisheries Act* and *Migratory Birds Convention Act*. These mechanisms should be implemented fully, with all necessary enforcement and monitoring resources put into place. The timely implementation of such mechanisms is required at construction start-up pending the outcome of national park and treaty negotiations that may result in a new land use management regime for the Eagle River plateau;
 - in order to protect the salmon in the *Tshenuamiau-shipu* (Kenamu River) system, DFO should schedule the entire river (including *Utshashumeku-shipu*) and establish a monitoring program in partnership with the Innu Nation to assess harvesting effort and population levels there;
 - ice-fishing on numerous lakes on the Eagle River plateau runs the risk of seriously reducing fish stocks. We noted previously that DFO has scheduled *Iatuekupau* (Park Lake) as a way to prevent ice-fishing. The scheduling of other lakes in the Eagle River watershed should be given serious consideration for the same reason;
 - the Canadian Wildlife Service in partnership with other federal and provincial resource management agencies and the Innu Nation should establish a comprehensive monitoring and enforcement presence with respect to the important migratory waterfowl populations and habitat in the Eagle River watershed;
 - a good monitoring programme should be established involving the Innu and government departments and agencies responsible for the management of natural resources (e.g. wildlife and fish) to ensure mitigation measures are effective. The Innu Nation's Environment Office has the capacity to participate in a monitoring programme;
 - government departments responsible for managing wildlife and fish resources should conduct an immediate review of their monitoring and enforcement capabilities. Where deficiencies exist, steps should be taken to acquire additional resources to ensure that over-harvesting of wildlife and fish resources does not follow highway construction. Prompt action is required in order to avoid a repeat of the Star Lake experience on the Island of Newfoundland;
 - quick action by governments on the officialization of Innu place names on the Eagle River plateau could help mitigate the sense of dispossession and loss of independence that many Innu experience when they see their place names disappearing from the map. Acceptance of Innu toponyms would recognize the important cultural heritage of the region. As an added measure, the Government of Newfoundland and Labrador should consider giving the new highway an Innu

name (e.g. the “Akamiuapishk^u Highway”), a practice not without precedent in other provinces.

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Appendix A. Researcher biographies

Anthony (Tony) Penashue, co-researcher

Raised by traditional parents in the *Akamiauapishk'* (Mealy Mountains) area, Tony Penashue has the requisite, in-depth knowledge of the project area. He has worked as a fisheries guardian with the Department of Fisheries and Oceans and with the Innu Nation for several years. Fluently bilingual, he has considerable experience as a translator not just in the context of his fisheries work, but also in relation to work by Environment Canada and itinerant researchers interested in Innu environmental knowledge. Tony has a good command of Innu technical vocabulary, has excellent map reading skills, and communicates easily with elderly Innu informants.

Marianne Stopp, co-principal researcher

Marianne Stopp has been directing archaeological field projects for twenty years and has undertaken cultural resource management studies in Newfoundland and Labrador since 1988. She completed an Honours B.A. at Wilfrid Laurier University, an M.A. at Memorial University of Newfoundland, an M. Phil. from the University of Cambridge, and a Ph.D. from the University of Cambridge. Her areas of study have included Iroquoian archaeology, the European Pleistocene, taphonomy, prehistoric adaptive strategies in both Europe and North America, and prehistoric and historic archaeology in southern Labrador. In 1986, and again in 1991 and 1992, she completed comprehensive archaeological surveys of the coastline between Blanc Sablon and Trunmore Bay, as well as historic documentary research relating to southern Labrador. Other projects have included a comprehensive survey of western Notre Dame Bay; directing the background research component of the Lower Churchill Hydro Study in 1998 as well as directing field crews on that project; study of Hudson's Bay Company Records pertaining to northern Labrador; and an assessment of precontact land use in Voisey's Bay. Most recently, Stopp undertook pre-fieldwork informant interviews in Sheshatshiu, Happy Valley-Goose Bay, and Cartwright in order to develop a picture of human land use and to develop the archaeological field strategy in the area of the Phase III Trans Labrador highway, and directed one of the field crews on that project. Stopp has also completed independent research on hunter-gatherer food storage in Labrador; on the archaeological and ethno-archival evidence of Inuit presence in southern Labrador; and on Inuit-European relations in southern Labrador. These projects have developed into a growing interest in re-orienting adaptive models for coastal and interior regions in the Northeast, with particular emphasis on resource processing as a factor in pre-contact settlement.

Peter Armitage, co-principal researcher

Peter Armitage has worked with the Innu of Labrador and Quebec for more than 20 years. Having graduated with a double major in sociology and anthropology from Simon Fraser University in 1981, he completed a masters degree in anthropology at Memorial University in 1986. For the M.A., he lived in the Quebec Innu village of La Romaine where he researched the relationship between domestic production and the wider market

economy in which it is now embedded. The fieldwork there included close to three months of participant observation at a bush camp 120 km north of the village. In 1984, Armitage commenced work among the Labrador Innu, working on a dictionary project with Dr. Marguerite MacKenzie under contract to the National Museum of Civilization. Since then, he undertook research in Labrador related to Innu land use and occupancy, harvesting levels, religious beliefs, ethnopolitics, and Innu perceptions concerning the environmental effects of military flight training. In 1986, he co-authored with Adrian Tanner the Innu land use component study for the Environmental Impact Study concerning the proposed Labrador Tote Road. In 1990, he completed a land use and occupancy study for the Innu Nation as part of the comprehensive land claims negotiating process. He has also undertaken research related to Innu land use in the vicinity of a new “safety template” around the Minipi Lake bombing range, and to Innu spatial knowledge of waterfowl habitat. Between 1996 and 1998, Armitage was responsible for digitizing and compiling the entire Innu Nation land use and occupancy GIS data base to support land claims negotiations. In 1991, he undertook doctoral studies in anthropology at Laval University and conducted fieldwork regarding the social construction of environmental problems related to the Great Whale Hydroelectric Project. In addition to his current effects assessment work, he is the guest curator of the Innu exhibit at The Rooms museum in St. John’s, and pursues independent film work related to the social construction of wilderness and the “gentleman explorer” tradition in Labrador.

Appendix B. Excerpt from Tanner's 1977 land use and occupancy report

Resources used by North West River Indians [Sheshatshiu Innu], (pp.86-94)

Eagle Plateau Region

Caribou

The Indians of Labrador recognized two kinds of caribou, *mushawa atikw* (barren-ground caribou) and *minunasawa atikw* (forest caribou). According to Indian informants, the *mushawa atikw* have lost most of their body fat by the end of winter, their coat is in poor shape, and the skin is full of parasites. By contrast, the *minunasawa atikw*, which winter in the forest, remain fatter and in better shape. They have smaller antlers and can, therefore, move among the trees more easily.

The distinction between barren-land and forest caribou in the Quebec-Labrador peninsula remains unclear in scientific terms. Most early classifications recognized the distinction, but Banfield, in an authoritative article, claimed that all of the Quebec-Labrador caribou fall into a single sub-species of woodland caribou, *Rangifer tarandus caribou* (Gmelin).

As one would expect there is no dividing line between the two forms [i.e., Ungava caribou and Woodland caribou], because there are no geographic or historical barriers in the area. The woodland caribou throughout the region are essentially similar from the Gulf of St. Lawrence to Fort Chimo. There are intergrading characteristics which become more prominent in northwestern Ungava between tundra and forest caribou (Banfield, 1961, p.84).

However, Bergerud claims that the Mealy Mountain and the George River caribou herds are largely discrete populations. The George River animals are larger and have larger antlers than those of the Mealy Mountain band (Bergerud, 1967, p.627-28).

In late summer and early winter, caribou are scattered south of the Mealy Mountains over a wide area of flat lands characterized by open-crown forest. The area, around the headwaters of Eagle River, is usually reached by portaging across the divide from Kenamu River into the Eagle River watershed. One of the main areas for hunting caribou is surrounded by several lakes, such as *Mishtashini*, east to *Nekanakau*, north to *Iatuekupau*, and west to *Kamishikamat*; caribou are also hunted east and south of this area at this time of year. With the coming of deep snows in October, the caribou move north into the Mealy Mountains. The hunters use various travel routes leading north into the mountains, several of which go from *Iatuekupau* (Park Lake) to *Mishta-nipi*, a lake from which several routes lead to the northeast, the north, and the northwest. Another route leads into the mountains from the west by way of Kenamich River.

In the fall and early winter, caribou were traditionally hunted by large groups of hunters who drove the deer toward corrals or snares, where they were killed by spears, bows and arrows, and muzzle-loading guns. By the turn of the century, the people had rapid-firing

rifles. They still gathered in large hunting groups, but the hunters went off from camp in various directions singly or in pairs and, when a group of caribou was found, they would organize a group hunt for the following day. During winter, particularly in the deep snows of February and March, they made other expeditions into the Mealy Mountains to hunt caribou. During this season, the caribou sometimes moved out onto the frozen Hamilton Inlet. In spring, the cows moved south to calve in wooded areas immediately south of the Mealy Mountains and, from May through the summer, caribou were hunted over all of the forest and wetlands of the Eagle Plateau.

Beaver

Beaver is the most important furbearer to the Indians who frequent the Eagle Plateau because it provides a large quantity of high quality meat in addition to its fur. Beaver are trapped all winter throughout the Eagle Plateau, wherever there is the right combination of wetlands and trees. Beaver are particularly plentiful in the tributaries of the upper Kenamu River, in the extreme western headwaters of the Eagle River, and around such lakes as *Uinikush*, *Mishtashini*, *Kamishikamat*, and *Cipitapsinakan*.⁷⁵ Other areas rich in beaver are found around *Iatuekupau*, around such lakes as *Kamunekushkat*, *Misht-utshashku*, *Kayiwatuwesikat*, and *Wabisinibish*; in another area where the Eagle River is joined by several tributaries; and around *Ushkau-nipi*, *Nekanakau*, *Mumukanipi*, and *Ustakwan Cinisaw*. Finally, the North West River Indians hunted beaver in the area between the headwaters of St. Augustine River and Eagle River and around lakes such as *Pepauakamau* and *Pishiu-nipi*.

Otter

Otter are found throughout the Eagle Plateau wherever there is a good supply of running water. They are trapped in Eagle River, its tributaries, and in the lakes that feed them; they are also hunted in the headwaters of St. Augustine River, Paradise River, English River, Kenamu River, and Kenamich River. They are usually trapped in early winter or in spring, when the rapids and fast-running rivers first open, but when there is still enough snow and ice to make overland travel easy. The trap is attached to the end of a long pole to which a heavy rock is attached; the other end is tied securely to the shore. The captured animal drowns when he tries to escape.

Muskrat

As with beaver, otter, and mink, muskrat are common throughout the wetlands of the Eagle Plateau. They are particularly plentiful in a large area of string bogs centred roughly on *Nekanakau* Lake in the central part of the plateau. They are also trapped in the basin of English River, along Kenamu River, and in the wetlands southeast of Carter Basin.

⁷⁵ We have left some of the spellings in Tanner's orthography because we cannot readily find their equivalents in standard orthography.

Fox

The fox is trapped throughout the Eagle Plateau area, including the wooded parts of the Mealy Mountains. Their numbers fluctuate in both space and time, but in the long run they are a trapped in greatest numbers in areas of lakes and forest, in the same general areas mentioned above for beaver.

Lynx

Like the fox, the lynx thrives best in areas where lakes are surrounded by well drained forest. The central part of the Eagle Plateau consists of large areas of flat boggy terrain with many lakes and rivers. Lynx are most often trapped north of this area, around *Iatuekupau*, west around *Mishtashini*, and southwest around *Pishiu-nipi*, in areas of well drained land between the lakes.

Marten

Marten are trapped in the mature forest that covers an extensive area between the Mealy Mountains in the north and the Eagle River wetlands in the south, and from Kenamu River in the west to English River in the east. They are also trapped in the headwaters of St. Augustine River. Marten traps are usually placed along trap lines that lead away from the larger lakes on which winter camps are located towards higher ground. Areas of concentrated marten trapping include lands to the east and to the west of *Iatuekupau*, the general area between *Uinikush* and *Kamishikamat*, and the area between Kenamu River and the Mealy Mountains. They are also trapped on the lower north slopes of the Mealy Mountains.

Bear

Bears are commonly found throughout the major hunting and trapping areas of the Eagle Plateau region, as described, for example, in the section on beaver. They are usually killed in the spring and summer, but they may be hunted in the fall in burned-over areas of forest, in the Mealy Mountains, and in areas of intermittent forest and open country.

Ermine and Squirrel

These minor furbearers are found throughout the region, wherever there is forest growth, the former being found mainly along the shores of lakes and streams.

Porcupine

This animal is also found throughout this region, particularly in the general area that lies between the Mealy Mountains and north of the headwaters of Eagle River and along the headwaters of St. Augustine River. The porcupine population appears to increase and decrease in specific areas over time. The people most often hunt them in the fall and in the spring, when it is difficult to hunt other game. However, the porcupine is at all times a highly prized item of food.

Snowshoe Hare, Spruce Grouse, Ptarmigan, Ruffed Grouse

These animals are found throughout the forested areas of the Eagle Plateau region, and ptarmigan are also found in the Mealy Mountains. Hares are snared around camps, and all of these small species of game are killed, often with a .22 rifle, whenever the people are traveling, especially in winter when they are trapping or hunting on snowshoe.

Lake Fish

Fish, which are found in large quantities in all of the lakes and many of the streams in the region, are of great importance in both summer and winter. The most important species are lake trout, whitefish, speckled trout, pike, sucker, and burbot. Fishing throughout the region, in all seasons, may be done with either a set line or a gill net. In winter, lines and nets are set in lakes under the ice. Generally, the largest lakes are the most productive, and the Indians know for each important lake which part of it is most productive in a given season.

Salmon

Salmon migrate up many of the rivers that drain into Hamilton Inlet and Sandwich Bay. When the Indians spent the summer in the interior, they caught salmon in Eagle River and its tributaries and in Kenamich River and its tributaries. Along Hamilton Inlet and Sandwich Bay, Settlers and fishing regulations have limited the take of salmon by Indians from the major rivers, although they have continued to fish as best they can in the Kenamu, Kenamich, and English rivers, and they have also made use of many of the small streams that flow into Hamilton Inlet. As well as nets, they have used a technique of spearing them at night by the light of torches attached to the front of the canoes.

Saltwater Fish

In Hamilton Inlet itself, the major species caught at the summer fish camps were saltwater trout, smelt, and rock cod. Trout and cod were caught by jigging and by set lines, and all three species were taken by net. Trout were also fished through the ice, mainly by jigging or by set line, at the mouths of rivers and in bays in Hamilton Inlet. The Narrows at North West River has always been an especially good fishing place; others are the mouth of Churchill River, the entrance to Mud Lake, Goose Bay, Carter Basin, and along the south shore of Hamilton Inlet as far as English River.

Waterfowl

In spring large numbers of Canada geese, loons, and several species of ducks migrate north; many of them use the Eagle River Plateau area as a staging area to wait for warmer weather and more open water before flying farther north, and many birds nest and spend the summer in this area. The most important hunting areas are in the lakes and marshes of the central part of the Eagle River drainage and the headwaters of English River, St. Augustine River, and Kenamu River. Waterfowl are also hunted along the shores of Hamilton Inlet and in the wetlands inland from the Inlet, such as the area south and east of Mud Lake and Carter Basin.

Berries

The berries most often gathered are blueberries, cranberries, raspberries and bakeapples. They are gathered in the mid- or late summer and are found throughout the region. Blueberries, of which there are three varieties, and raspberries are found in dry, open areas; the other berries grow in marshy ground. Several other species of berries of lesser importance are also gathered. Many berries, including blueberries and cranberries, remain frozen under the snow through the winter, so that there is a second gathering period in April or May.

Trees

Trees are one of the most important of natural resources to the Indians. Black spruce, which is used for firewood and houses, is found all over the region. Birch is used in the manufacture of many articles, such as snowshoe frames and wooden snow shovels. Tamarack is used for toboggan boards. Balsam and spruce branches are used for tent floors. Spruce is most common, but the other kinds of trees are found only in special habitats. Camp sites are selected and may be changed on the basis of the availability of these trees.

Summary

Although many of the animal and plant resources used by the Indians in the Eagle Plateau region are found in all parts of the region, certain key resources, such as caribou, fish, beaver, and waterfowl, are found at specific locations at particular times of the year. These four locations are the most important of them.

1. The Mealy Mountains.
2. The shores of Hamilton Inlet, particularly near the mouths of rivers and streams.
3. The larger lakes at the headwaters of Eagle River.
4. Along the major rivers of the region, especially the Kenamu, Kenamich, and English rivers, Eagle River and its tributaries, Paradise River, and the upper parts of St. Paul and St. Augustine rivers.