

JW NO. NFS8558-0014

**LAND AND RESOURCE USE COMPONENT STUDY
TRANS LABRADOR HIGHWAY –
PHASE III (HAPPY VALLEY-GOOSE BAY
TO CARTWRIGHT JUNCTION)**

JANUARY 2003

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TRANS LABRADOR HIGHWAY –
PHASE III (HAPPY VALLEY-GOOSE BAY
TO CARTWRIGHT JUNCTION)**

PREPARED FOR:

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EXECUTIVE SUMMARY

This study on resource use and users in the vicinity of the proposed TLH – Phase III was carried out as part of the environmental assessment for the TLH - Phase III. The study purpose was to identify and provide information on the various resource use activities being carried out in the study area, as well as the user groups. As the proposed TLH – Phase III route passes through Regional Economic Zones 3 (Central Labrador) and 4 (Southern Labrador), these zones defined the study area for the study. Zone 3 encompasses the area surrounding the portion of the proposed highway route closest to Happy Valley-Goose Bay, while Zone 4 encompasses the eastern portion of the route towards Cartwright Junction. However, as various aspects of land and resource use are defined by more specific administrative, economic or political boundaries (e.g., wildlife management zones), areas of focus varied for specific land and resource use activities.

The study described:

- historical and contemporary resource use by Labrador residents;
- historical and current use (e.g., recreational, commercial and subsistence) and users of watercourses to be crossed by the proposed TLH - Phase III;
- current and planned land use and settlement along the proposed TLH - Phase III route including, but not limited to, planning strategies, proposed development, utilities and development boundaries;
- forest resources and management strategies;
- information on potential protected areas, such as parks, sanctuaries, reserves and heritage rivers;
- wilderness characteristics, including landscape aesthetics, vistas and noise scapes; and
- changes in land and resource use due to previous road developments in Labrador using available information (i.e., information available from government departments and agencies, and contacts made during the study and environmental assessment).

The principle resource users in the study area are the Innu, Settler/Métis and other Labrador residents, and visitors/tourists to the area (in particular visitors to outfitting operations). While much of the use is for subsistence or recreational purposes, there are also commercial/business interests (e.g., commercial caribou harvest, trappers and adventure and nature tourism operators) and industrial and government users (e.g., forestry companies and the military).

Resource use activities identified are Innu and Settler/Métis land and resource use, municipal/community land use, waterway use, hunting, trapping, fishing, outfitting operations and other adventure or nature tourism operations, parks and special areas, cabins, trails and recreational areas, forestry, mineral exploration and quarries, hydroelectric power development and military activities. The requirement for review of historical and contemporary land and resource use by the Innu, with particular attention to contemporary Innu land and resource use, was addressed in detail in Armitage and Stopp (2003).

KA MAMUSHTAKANT EIMUN

Ume kanantussentakant eshi takuak tshekuan tshipa utshi pempanu ka mishat atusseun nete etutakant meshkanau TLH - Phase III. Tshetshi ut nishtuapatakant kie minuenanut ne eshi nantussentakant tutakanipan mashineikan tshetshi uitakant ntshe auentshe apishtat assinu tshetshi ut tutakau ka mishant atusseunu tshetshi ut pempanit. Miam nete tshika itamu ne meshkanau Regional Kamishatshi atusseuna tshe ut pempanikau Zones 3 (nete Kuspe itetshe) kie nete (mamit ut Labrador), ekute muk piessiki utenaua ka mamishatshi kie ne Zone 4 nete tshe itamutakant meshkanu Nutapiueunant itetshe. Muk ne tapue shash pempantaut(ntshe katshettetikuet tshetshi nakatuapatakau nete) kie ekute nete tshetshi itapashtakanit nenu tshetshi takunetshi kamamishantshi atusseuna.

Ume ishi tutakanipan niantussentakant:

- shashish ke pet apishtakant ne assi tshetshi ut takuak ka mishat atusseun
- shashish kie anutshish eapishtakant nete assi (ekussanut, entu-unanut, kie akeneshaut ka tshitshepantat kakussanunit) kie netshe tshe apishtat nete eitakunetshi nipia;
- anutshish ka tshiitapatakant tshe itapishtakant ne assi kie tshe takuak ne kamishat atusseun tshe ut pempant nete meshkanau TLH - Pase III tutakantshi, eshi uauitakant tshe ishinakutakant ui apishtatshi nenu assinu ne ua tutaka emishant atusseunu, kie tan eshi ntuentamuat tshishe utshimau tshe ishinakutat nenu atusseunu ui tutaki;
- mishtukut tshetshi nakatuenumakanit eshpish tshimekauakanit kie ne tshe ishi tutakant;
- tshetshi uauitakant nete niakatuapatakant assi kie nete eshi takuak miam ne shipua tshetshi nakatuentanikau kie ka pet nimetat ntshe ka tat nete ueshket tshetshi nas eka nushtakanit;
- tshetshi minu uauitakant nete eshinakuak kie etentakuak nete nutshimit pessish tshe itamut ne meshkanau tshishtakantshi kie eishinakuak nete tshe takuak ne meshkanau;
- tshetshi uitakant ne eshi mishkutshipant assi katshi tutakant kutak meshkanau ka tshishtakant shash nete Labrador kie tshetshi apishtakant ne mashineikan euauitakant (nete tshetshi ut utnakant., tshishe utshimat itetshe kie ntshe kutakat ka minakanit tshetshi nantussentakau eshinakunit assinu nete ua tetakau atusseunu kie tshetshi petsheteshinakau nenu umashineikanau etutakau niantussentakau kassinu tshekuanu eshi inniuimikanit nete assit).

Ntshe anu tshe ut apishtat nenu assinu Innut, Akeneshaut kie ntshe Metis mak kutakat katat ute Labrador kie ntshe manteut meshekatau ute etanunit (anu nete uet kakussanut ka pempantakanit). Kie ntshe kutakat tshika taut tshe ui apishtat nenu assinu (peikun iat ntshe kantu-uit kie ka ui tshitshepantuatiishut atusseunu auentshe kie ntshe manteua ka aiatinat) kie nete ut tshishe utshimat ka ut pempantshi atusseuna, miam ne uashtennimana tshe ut pempanikau kie (mishtukua kanutshiiat kie ntshe iat ashamakeishiit tshika ui tshishkutamashuatsheut nenu assinu).

Anu ntshe tshe ut apishtat assinu Innut, Akeneshaut shashish ka tat kie ntshe Metis tante uinepeku nete taut eku tshika ui ntu-ut, natshi kusseut, tshika ishtaut utashunakanauau, uitshuaau, tshika tshitshepantaut kakussanunit, mishtukua ka utnakantshi, ashamakeisha tshe apishtantshi assinu kie tshetshi tutakanit ne emetuanut miam ne ka mamuitunanut euapatniuet auen utanniun, mitshetuit tshika ishi apishtakanu ne assi kie kamamishatshi atusseuna tshipa tshi tutakanua iat. Kie etu nete minu uauitakanu nete ka pet shashish ishi tutakanikue ne assi kamamishat atusseun euauitakant kie nete Peter Armitage mak Marianne Stopp (2003) uauitakanu ne eshi uauitakant uta mashineikant.

TABLE OF CONTENTS

	Page No.
1.0 INTRODUCTION	1
1.1 Trans Labrador Highway - Phase III Project	1
1.2 The Study	6
1.2.1 Study Area	6
1.2.2 Purpose and Objectives	9
1.3 Study Team	9
1.4 Document Organization	10
2.0 METHODOLOGY	11
2.1 Existing Information Review	11
2.1.1 Aerial and Ground Surveys of Watercourses	12
2.1.2 Available Innu Land and Resource Use Information	12
2.2 Interviews	13
3.0 HISTORICAL LAND AND RESOURCE USE	15
3.1 Land and Resource Use from 1500 AD to 1800 AD (Early Historic Period)	16
3.2 Land and Resource Use from 1800 AD to 1900 AD (Late Historic Period)	17
3.2.1 The Innu (or Montagnais-Naskapi)	18
3.2.2 Settler/Métis	21
3.3 Land and Resource Use from 1900 AD to 1960 AD (Pre-settlement)	22
3.3.1 Pre-settlement Innu Land and Resource Use	22
3.3.2 Pre-settlement Settler/Métis Land and Resource Use	26
4.0 SETTLEMENT AND MUNICIPAL LAND USE	27
4.1 Settlement History	27
4.2 Municipal Land Use Planning	28
4.3 Regional and Protected Area Planning	29
4.4 Protected Roads	31
4.5 Water Supply Areas	34
5.0 WATERWAY USE	37
5.1 Regulatory Framework	37
5.2 Churchill River Watershed	37
5.3 Traverspine River Watershed	38
5.4 Kenamu River Watershed	39
5.5 Eagle River Watershed	41
5.6 Paradise River Watershed	42
6.0 HUNTING AND TRAPPING	44
6.1 Regulatory Framework	44
6.2 Hunting	44

6.2.1	Moose	44
6.2.2	Caribou	47
6.2.3	Black Bear	49
6.2.4	Small Game	51
6.2.5	Waterfowl	53
6.2.6	Seabirds	55
6.3	Trapping	55
6.4	Wildlife Products	59
7.0	FISHING	60
7.1	Current Regulatory Framework	60
7.1.1	Atlantic Salmon	60
7.1.2	Trout	63
7.1.3	Other Species	65
7.1.4	Guide Requirements	65
7.1.5	Lake Melville - Southern Labrador Subsistence Fishery	66
7.1.6	Lake Melville - Commercial Fisheries	66
7.1.7	Aboriginal Fishing Agreements	66
7.1.8	Enforcement	66
7.2	Fishing Activity	67
7.2.1	Fishing Activity in Central Labrador	67
7.2.2	Fishing Activity in Southern Labrador	67
7.2.3	Fishing Effort	68
7.2.4	Fish Catch and Composition	70
8.0	OUTFITTING OPERATIONS	74
8.1	Regulatory Framework	74
8.2	Outfitting Camps and Activities	74
9.0	PARKS, RESERVES AND SPECIAL AREAS	79
9.1	Mealy Mountains National Park	79
9.1.1	History of the Proposed Mealy Mountains National Park	81
9.1.2	Biophysical Environment of the Park Study Area	81
9.2	International Biological Program Sites	82
9.3	Heritage Rivers	83
9.3.1	Canadian Heritage Rivers System	83
9.3.2	Potential Candidate Rivers in Central and Southern Labrador	84
9.4	Other Reserves and Special Areas	84
9.5	Cabins, Trails and Recreational Areas	85
10.0	FORESTRY	87
10.1	Regulatory Framework for Forest Management	87
10.2	Forest Resources in Central and Southern Labrador	90
10.2.1	Labrador Ecoregions	90
10.2.1.1	High Boreal Forest - Lake Melville	90

10.2.1.2	Low Subarctic Forest - Mecatina River	93
10.2.1.3	String Bog - Eagle River Plateau	93
10.2.1.4	Mid Boreal Forest - Paradise River	93
10.2.2	Forest Management District 20	93
10.2.3	Forest Management District 19	93
10.2.3.1	Forest Management District 19 - Subdistricts 19B and 19C	95
10.2.3.2	Forest Management District 19 - Subdistrict 19A	95
10.3	Forest Operations in Central and Southern Labrador	101
10.3.1	Forest Management District 20	101
10.3.2	Forest Management District FMD19A	102
10.4	Forest Management and Harvesting Plans, 2002 to 2007	105
11.0	MINING AND MINERAL EXPLORATION	107
11.1	Regulatory Framework	107
11.2	Mineral Rights	107
11.2.1	Staking and Maintaining Claims	107
11.2.2	Quarry Permits	108
11.2.3	Other Regulatory and Management Processes	108
11.3	Current Mining and Mineral Exploration Activity	108
12.0	HYDROELECTRIC DEVELOPMENT	110
12.1	Regulatory Framework	110
12.2	Current Hydroelectric Development Activity	110
12.3	Potential Future Development	112
13.0	MILITARY ACTIVITIES	113
13.1	Regulatory Framework	113
13.2	Low-Level Flight Training	113
13.3	Canadian Forces Base Goose Bay	115
14.0	SUMMARY	116
14.1	Summary of Land and Resource Use	116
14.2	Planning and Development	118
14.3	Experience with TLH - Phases I and II and Others Roads in Labrador	120
15.0	REFERENCES	122
15.1	Personal Communications	122
15.2	Literature Cited	124

LIST OF APPENDICES

Appendix A	Trans Labrador Highway - Phase III Environmental Impact Statement and Comprehensive Study Guidelines
Appendix B	Study Team
Appendix C	Representative Photographs of Watercourse Crossings
Appendix D	Trans Labrador Highway - Phase III Waterway Use Interview Guide
Appendix E	Trans Labrador Highway - Phase III Outfitter Interview Guide
Appendix F	Trans Labrador Highway - Phase III Issue Scoping Interview Guide
Appendix G	Innu Place Names

LIST OF FIGURES

	Page No.	
Figure 1.1	Trans Labrador Highway – Phase III (Happy Valley-Goose Bay to Cartwright Junction)	2
Figure 1.2	Trans Labrador Highway - Phase III Watercourse Crossings	3
Figure 1.3	Labrador Innu Land Claim	7
Figure 1.4	Labrador Communities and Regional Economic Zones	8
Figure 4.1	Municipal Boundaries	30
Figure 4.2	Protected Roads in Labrador	32
Figure 6.1	Moose Management Areas in Labrador	46
Figure 6.2	Caribou Management Zones in Labrador	48
Figure 6.3	Black Bear Management Areas	50
Figure 6.4	Small Game Management Zones in Labrador	52
Figure 6.5	Migratory Game Bird Hunting Zones	54
Figure 6.6	Furbearer Management Zones in Labrador	57
Figure 7.1	Scheduled Salmon Rivers in Salmon Fishing Zone 2	61
Figure 7.2	Trout Management Zones	64
Figure 7.3	Fish Caught in Labrador (Freshwater and Andromous), 1990, 1995 and 2000	71
Figure 7.4	Labrador Angling Catch (Freshwater and Andromous) Composition, 2000	73
Figure 8.1	Outfitting Camps	75
Figure 9.1	International Biological Programme Sites and Mealy Mountains National Park Study Area	80
Figure 10.1	Forest Management Districts in Labrador	88
Figure 10.2	Commercial Timber Areas in Labrador	91
Figure 10.3	Labrador Ecozones and Ecoregions	92
Figure 10.4	Allocation Areas in Forest Management District 19	94
Figure 10.5	Driedman Vegetation Classification for Forest Management District 19	96
Figure 10.6	Age Class Distribution on Productive Sites in Forest Management District 19A	98
Figure 10.7	Disturbed Areas in Forest Management District 19A	99
Figure 10.8	Forest Management Classifications for Forest Management District 19A	100
Figure 10.9	Silviculture Areas in Forest Management District 19A	103

Figure 10.10	Commercially Harvested Timber, Forest Management District 19A, 1969-2000	104
Figure 12.1	Existing and Proposed Hydroelectric Power Development Infrastructure	111
Figure 13.1	Low-Level Flight Training Area	114

LIST OF TABLES

	Page No.	
Table 1.1	TLH - Phase III Watercourse Crossings Requiring Bridge, Causeway and Pipe Arch Structures	4
Table 3.1	Wildlife Distribution and Innu Harvesting Areas	24
Table 3.2	Bird Distribution and Innu Harvesting Areas	25
Table 3.3	Fish Distribution and Innu Harvesting Areas	25
Table 5.1	Watercourse Crossings on the Churchill River and Tributaries	38
Table 5.2	Watercourse Crossings on the Traverspine River and Tributaries	39
Table 5.3	Watercourse Crossings on the Kenamu River and Tributaries	40
Table 5.4	Watercourse Crossings on the Eagle River and Tributaries	41
Table 5.5	Watercourse Crossings on the Paradise River and Tributaries	43
Table 6.1	Small Game Season Dates and Bag Limits, 2002-2003	51
Table 6.2	Labrador Trapping Seasons and Zones, 2002-2003	56
Table 6.3	Furbearer Harvest in Labrador, 2001/2002	58
Table 7.1	Scheduled Salmon Rivers in Salmon Fishing Zone 2	62
Table 7.2	River Classification and Associated Bag Limits	62
Table 7.3	Number of Anglers by Angler Category and Days Fished in Labrador, 2000	68
Table 7.4	Angling Effort and Catch Rates for Scheduled Salmon Rivers, 1995 to 2001	69
Table 7.5	Number of Anglers and Days Fished in Saltwater and Freshwater in Labrador, 1990, 1995 and 2000	70
Table 8.1	Commercial Outfitting Camps	76
Table 10.1	Vegetation Cover Types in Forest Management District 19A	97
Table 10.2	Wood Supply Analysis Results for Forest Management District 19A	101
Table 10.3	Summary of Activities in Forest Management District 19A, 1997 to 2002	102
Table 10.4	Forest Management District 19A Annual Allowable Cut	105
Table 10.5	Harvest Allocations in Forest Management District 19A	106

1.0 INTRODUCTION

Labrador residents make use of land and water resources for subsistence and recreation and, to a limited degree, commercial ventures. A variety of resource use activities could potentially be carried out in the area in which the Trans Labrador Highway (TLH) – Phase III (Happy Valley-Goose Bay and Cartwright Junction) will be located. Activities include hunting, trapping, fishing, forestry, mineral exploration and quarrying, military activities, parks, reserves and special areas, and cabins, trails and recreational areas. Resource users include the Innu, Settler/Métis, other residents of Labrador and tourists to the area. The TLH - Phase III will also cross land area that is subject to a land claim by Innu Nation, which is currently being negotiated between Innu Nation and the governments of Canada and Newfoundland and Labrador.

As part of the environmental assessment for the TLH - Phase III, Jacques Whitford Environment Limited (JW) on behalf of the Department of Works, Services and Transportation (WST), carried out a study on resource use and users in the vicinity of the proposed TLH – Phase III. This report documents the results of this study.

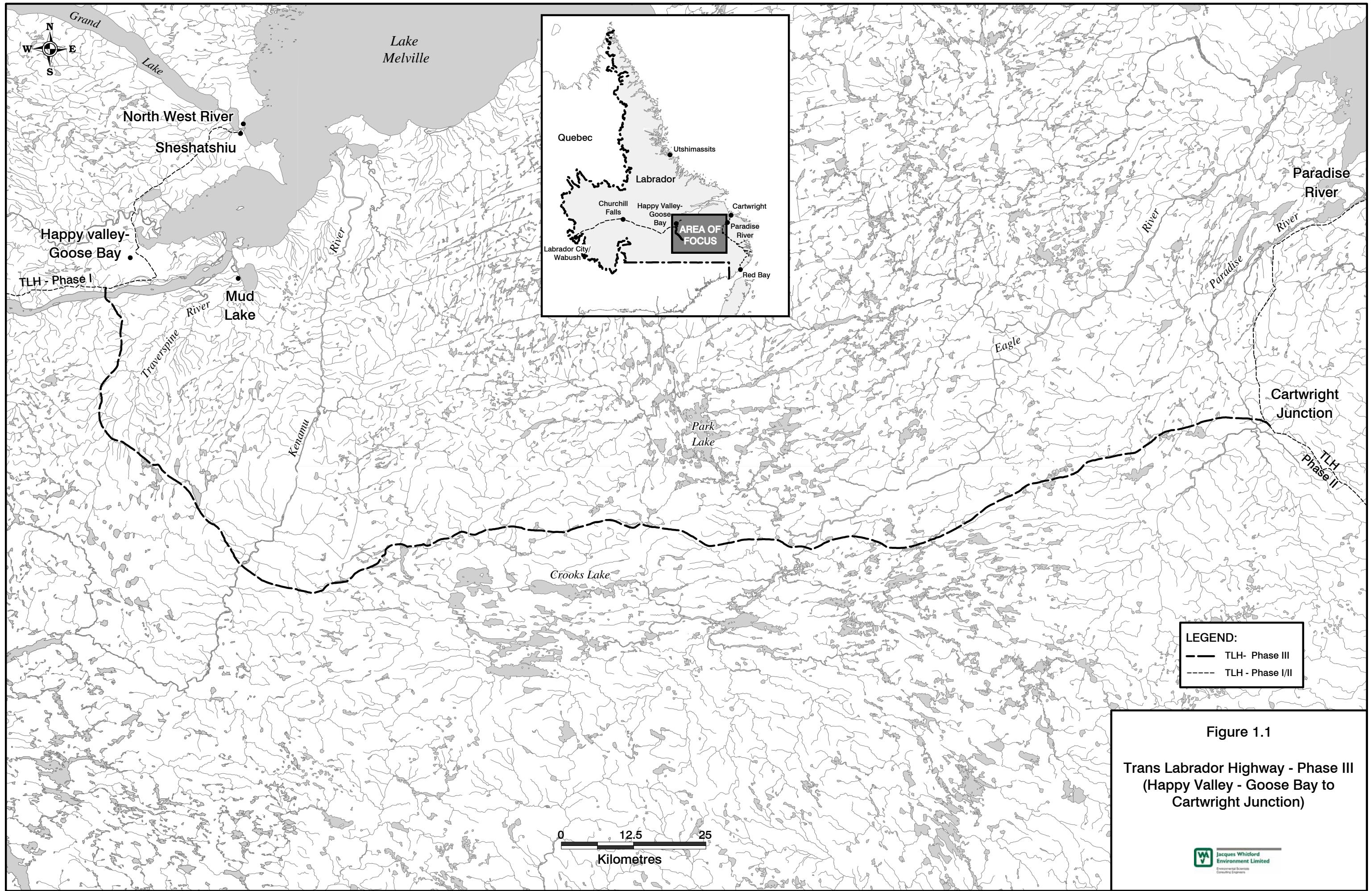
1.1 Trans Labrador Highway - Phase III Project

WST is proposing to construct a two-lane, all season, gravel surface highway from Happy Valley-Goose Bay to Cartwright Junction, a distance of approximately 250 km (Figure 1.1). This highway will be the final section of an all-season ground transportation route that links the Labrador Straits and Southern Labrador with Upper Lake Melville and west to Western Labrador and Québec.

The primary features of the TLH - Phase III are the highway and its right-of-way. The highway will be constructed to a Rural Collector Undivided 80 km/hr design standard and have a posted speed limit of 70 km/hr. This standard is similar to that used for existing sections of the TLH. The highway will consist of a 9.5-m wide gravel surface and a right-of-way width of 40 m. The normal clearing width of 30 m will be reduced wherever possible, particularly around waterbodies. Grubbing width will be 20 m rather than the standard 30 m.

Other features of the TLH - Phase III are intersections at the junction with the Phase I portion of the TLH near Happy Valley-Goose Bay and Phase II at Cartwright Junction, watercourse crossing structures, borrow pits and major excavations, maintenance depots, signage and roadside pull-off locations. Most borrow pits established for the TLH - Phase III will be temporary. However, some may continue to be used during operation for highway maintenance and winter ice control materials. The project will also involve other temporary features during construction, including temporary watercourse diversions, construction camps, laydown areas and waste disposal facilities.

The TLH - Phase III will cross 95 watercourses between Happy Valley-Goose Bay and Cartwright Junction (Figure 1.2). The majority of the crossings will be made using cylindrical culverts or corrugated steel pipe (CSP) ranging in size from 1,200 to 3,000 mm. Seventeen of the crossings will require pipe arch structures, while six of the watercourses (Churchill River, Traverspine River, Kenamu River, South Branch of the Eagle River, Otter Brook and Paradise River) will require bridges. (Table 1.1) The Churchill River will also require a partial causeway of 500 m to be built in conjunction with the bridge.



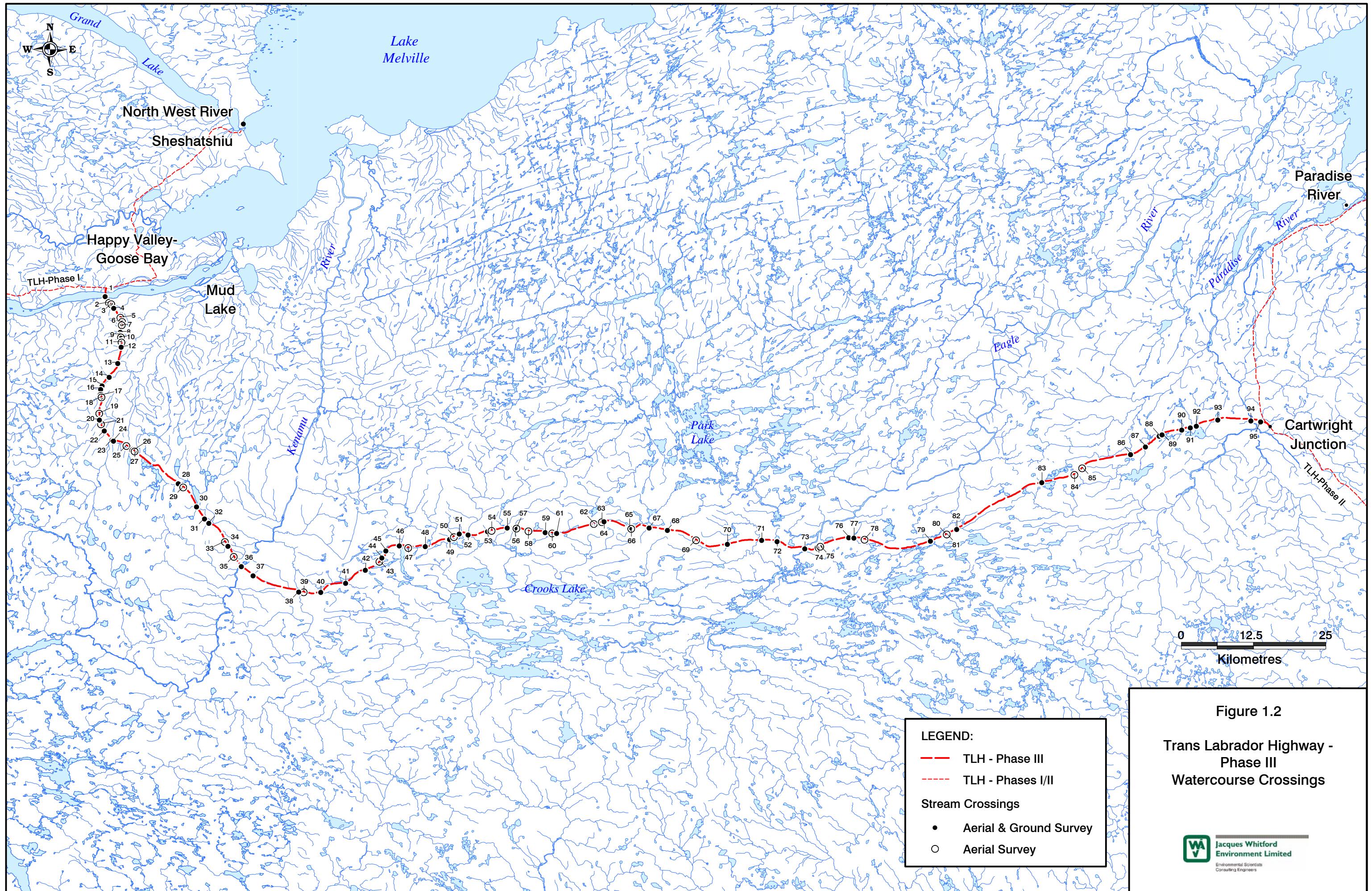


Table 1.1 TLH - Phase III Watercourse Crossings Requiring Bridge, Causeway and Pipe Arch Structures

Crossing No.	Watercourse	Watershed	Preliminary Structure Type	Preliminary Structure Size
1	Churchill River	Churchill	Bridge and Causeway	3 bridge spans, 120 m each; 500 m causeway
15		Traverspine	Pipe Arch	4,370 mm x 2,870 mm
16		Traverspine	Pipe Arch	5,890 mm x 3,710 mm
22		Traverspine	Pipe Arch	5,890 mm x 3,710 mm
23	Traverspine River	Traverspine	Bridge	15 m bridge span
24		Traverspine	Pipe Arch	4,370 mm x 2,890 mm
28		Traverspine	Pipe Arch	4,370 mm x 2,870 mm
36	Kenamu River	Kenamu	Bridge	2 bridge spans, 30 m each
38		Kenamu	Pipe Arch	4,370 mm x 2,870 mm
40		Kenamu	Pipe Arch	3,890 mm x 2,690 mm
41		Kenamu	Pipe Arch	3,890 mm x 2,690 mm
45		Eagle	Pipe Arch	5,490 mm x 3,530 mm
47		Eagle	Pipe Arch	3,890 mm x 2,690 mm
51		Eagle	Pipe Arch	7,040 mm x 4,060 mm
54		Eagle	Pipe Arch	6,250 mm x 3,910 mm
60		Eagle	Pipe Arch	3,890 mm x 2,690 mm
70		Eagle	Pipe Arch	4,370 mm x 2,870 mm
73	Eagle River - South Branch	Eagle	Bridge	2 bridge spans, 30 m each
79	Otter Brook	Eagle	Bridge	20 m bridge span
86		Eagle	Pipe Arch	5,490 mm x 3,530 mm
88		Eagle	Pipe Arch	3,890 mm x 2,690 mm
91		Eagle	Pipe Arch	4,370 mm x 2,870 mm
94	Paradise River	Paradise	Bridge	60 m bridge span
Note: Watercourse crossing numbers listed correspond with those shown in Figure 1.2. All other crossings will have corrugated steel pipe (CSP) structures.				

Construction of the TLH - Phase III will begin in 2003 and occur in several phases between 2003 and 2008. Pre-design work for the highway is currently underway and detailed design will be ongoing throughout construction. Procurement/tendering will be completed each year prior to the start of the construction season, which will extend from mid-May to the end of November. Construction will start at both ends of the route (i.e., at Happy Valley-Goose Bay and at Cartwright Junction on the Phase II portion of the TLH) in 2003.

Construction will involve:

- site preparation, including surveying, right-of-way clearing, and grubbing and debris disposal (including disposing of organic soil, slash, grubbed material and wood fibre);
- transporting equipment, construction materials and related supplies to construction sites, including transporting, storing and handling hazardous materials, fuels, lubricants and explosives;
- establishing, operating and removing construction camps and laydown areas;
- blasting operations;
- excavating, including disposing of excess/waste rock, overburden and potential acid-generating rock;
- establishing and operating borrow pits, including identifying sources of borrow material;
- subgrade construction;
- installing watercourse crossing structures, and activities in and around watercourses; and
- site rehabilitation and environmental monitoring.

Construction will comply with all applicable standards and regulations, environmental protection guidelines and regulations, and WST specifications. A series of environmental protection measures will also be implemented in accordance with the potential project effects identified through the environmental assessment process. An EPP will be prepared for each construction phase.

It is anticipated that the TLH - Phase III will be operated and maintained in perpetuity. The TLH - Phase III will be a permanent year-round highway requiring seasonal maintenance and periodic repair. Traffic volume is expected to be light, with most travel occurring between spring and fall. Appropriate signage, including directional and safety signs and wildlife crossing signs, will be posted where necessary. Development activities along the highway are controlled under the *Protected Road Zoning Regulations* under the *Urban and Rural Planning Act, 2000*. Waste and littering along the highway are subject to the *Highway Traffic Act* and *Environmental Protection Act*. The highway will be policed to ensure enforcement of speed limits and other regulations, as well as for emergency response.

Maintenance depots will be established for storage of graders, backhoes, loaders, trucks, snow plows and other required equipment. While most borrow pits will be temporary construction features, some will be used during highway operation and maintenance for highway repair and winter ice control materials. These permanent borrow pits will be maintained by WST throughout operations or until they are no longer necessary (i.e., all suitable materials at the site have been used). All borrow pit sites that are no longer required will be rehabilitated.

Regular maintenance programs will be established when the highway is operational year-round. The highway will be inspected regularly to ensure that the surface and subgrade do not deteriorate, and the highway will be graded one to two times per year. Watercourse crossings and drainage structures will be checked regularly to ensure that they are not blocked; any debris will be cleared. Care will also be taken to ensure that erodible areas are stabilized with vegetation (i.e., hydroseeding); these areas will be inspected to ensure effectiveness of revegetation. Highway signage and guide rails will be maintained and repaired as necessary. During the winter, snow will be cleared and sand applied for ice control.

It is important to note that the TLH - Phase III will also be subject to the terms and conditions of the Innu land claim settlement, currently being negotiated between Innu Nation and the governments of Canada and Newfoundland and Labrador. The Labrador Innu land claim area is shown in Figure 1.3. Innu Nation is currently negotiating an Agreement-in-Principle with the federal and provincial governments, and following this agreement a final agreement will be negotiated (Armitage and Stopp 2003). When the Innu land claim is settled it will establish a framework for land and resource management in the settlement area, which will offer a protection mechanism for area resources and set rules for users within the claim settlement area. Resource users in the area will be subject to the terms and conditions set out in the agreement and any subsequent management plans that might be established during implementation of the final agreement.

1.2 The Study

The study of resource use and users in the vicinity of the TLH - Phase III route is based on the requirements for component studies as outlined in the environmental impact statement (EIS) and comprehensive study guidelines issued by the Department of Environment in December 2002 (Appendix A). The study describes historical and contemporary resource use in the study area. However, Innu land and resource use activity is detailed in a separate study completed for the TLH - Phase III environmental assessment by Armitage and Stopp (2003).

This study of resource use and users in the study area is being undertaken in conjunction with a series of component studies for the environmental assessment of the TLH - Phase III. Other component studies addressed the following subjects:

- migratory birds/waterfowl;
- raptors;
- caribou;
- fish and fish habitat;
- historic resources;
- Innu land and resource use;
- tourism and recreation; and
- community life, employment and business.

1.2.1 Study Area

The proposed route for the TLH – Phase III passes through Regional Economic Zones 3 and 4 (Figure 1.4). Zone 3 (Central Labrador) encompasses the area surrounding the portion of the proposed highway route closest to Happy Valley-Goose Bay, while Zone 4 (Southern Labrador) encompasses the eastern portion of the route towards Cartwright Junction. These zones, along with the project boundary as defined by the proposed 40 m right-of-way for the highway, are used to provide initial definition for the study area. However, as various aspects of land and resource use are defined by more specific administrative, economic or political boundaries (e.g., wildlife management zones), areas of focus varied for specific land and resource use activities.

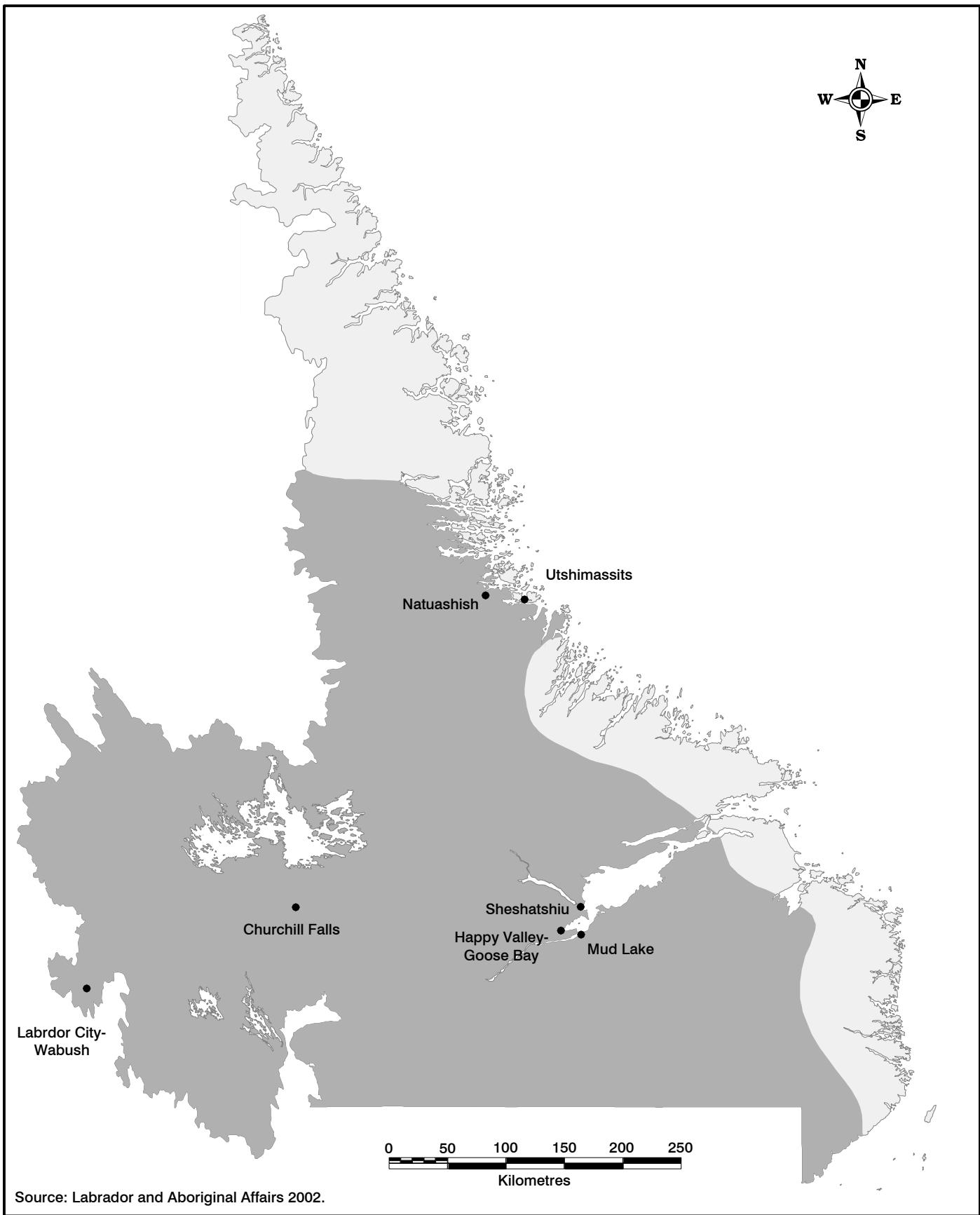


Figure 1.3
**LABRADOR INNU
LAND CLAIM AREA**

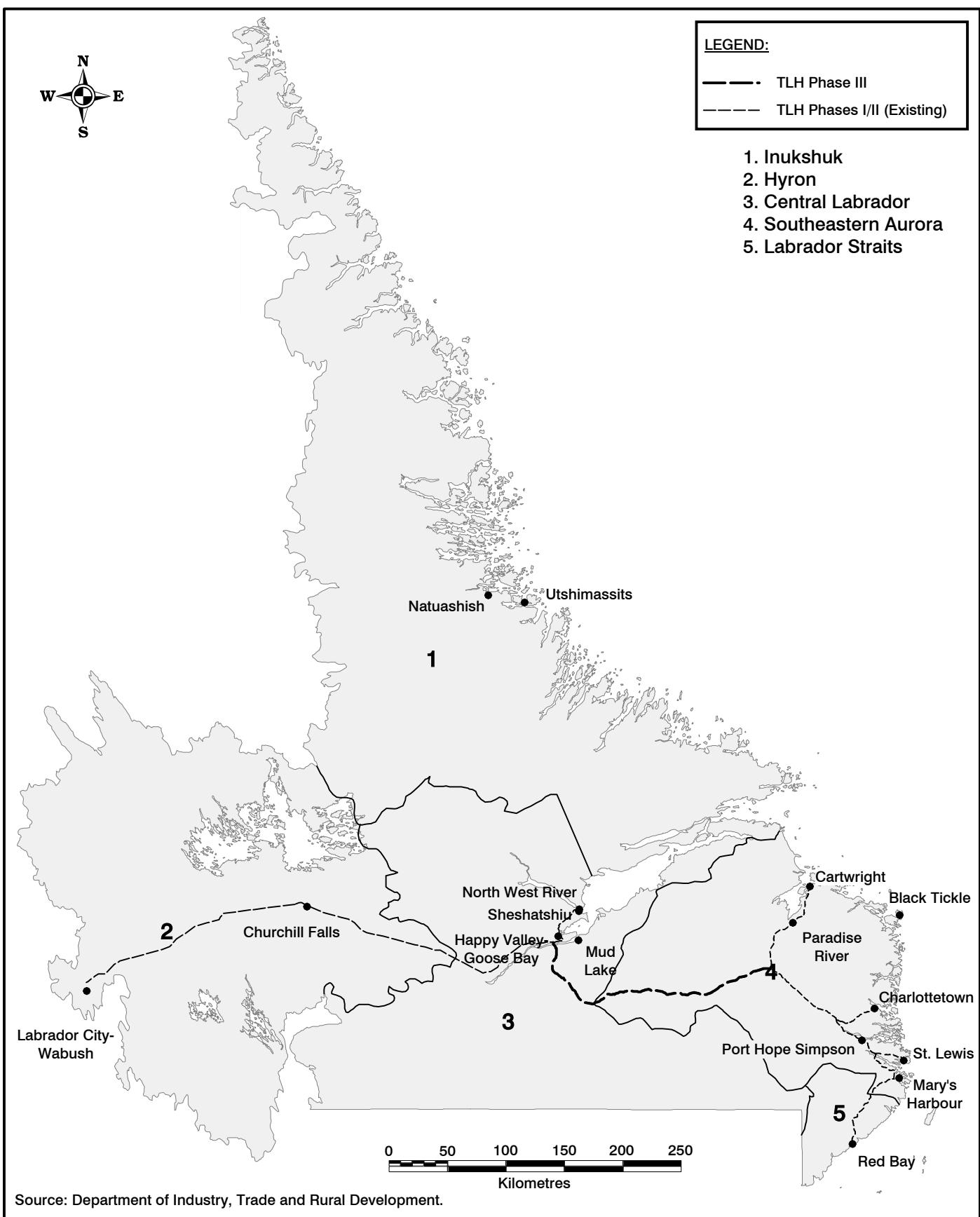


Figure 1.4
**Labrador Communities and
Regional Economic Zones**

1.2.2 Purpose and Objectives

The purpose of the component study is to identify the various resource use activities being carried out in the area and the user groups under. The study focuses on gathering and presenting information on the historical and contemporary land and resource use of Labrador residents, as well as other users of the study area. Predictions with respect to potential changes that may occur in land and resource use activity as a result of the highway development are addressed as part of the environmental effects assessment and are presented in the EIS and comprehensive study prepared for the project.

As indicated in the EIS and comprehensive study guidelines, the study objectives are to:

- describe historical and contemporary land and resource use by Labrador residents;
- describe historical and current use (e.g., for recreational, commercial and subsistence) and users of watercourses to be crossed by the proposed TLH - Phase III;
- describe current and planned land use and settlement along the proposed TLH - Phase III route including, but not limited to, planning strategies, proposed development, utilities and development boundaries;
- describe forest resources and management strategies;
- provide information on potential protected areas, such as parks, sanctuaries, reserves and heritage rivers;
- describe wilderness characteristics, including landscape aesthetics, vistas and noise scapes; and
- describe changes in land and resource use due to previous road developments in Labrador using available information (i.e., information available from government departments and agencies, and contacts made during the study and environmental assessment).

The EIS and comprehensive study guidelines also indicated that historical and contemporary resource use by the Innu, with particular attention to contemporary Innu land and resource use, be described. This requirement is addressed in Armitage and Stopp (2003).

1.3 Study Team

Study team members are: Karen Roberts (Project Manager); Ellen Tracy; Yves Labrèche; Kathy Knox; Caroline Hong; Barry Wicks; Peter Menchenton; and Steve Bonnell. Brief biographical statements for team members are provided in Appendix B.

Ms. Karen Roberts, MCIP, a land use planner, was the project manager for the study. Ms. Roberts coordinated collection of land and resource use information, and final compilation and editing of the study report. Ms. Ellen Tracy provided direction on current trends/direction in resource use activities and provided technical review of the final report. The remaining team members assisted with data collection and reporting of land and resource use information.

Mr. Labrèche was responsible for gathering information on Innu land and resource use. Mr. Labrèche is a qualified anthropologist with a background in cultural anthropology, archaeology and environmental sciences, and extensive experience in cultural resource management and conducting historic resources and Aboriginal land and resource use studies and mapping programs. He has worked on a number of

investigations using interview data and land use information, traditional ecological knowledge and material culture with Labrador Innu and Inuit, as well as Montagnais, Cree and Inuit in Québec. Mr. Labrèche was responsible for preparing the report section on Innu land use, using information from existing data sources.

JW's cartographic and secretarial staff handled report production. Cartographic staff digitized and incorporated the land use data obtained into a geographic information system (GIS), and prepared the graphics showing land use information for the study area presented in this report.

1.4 Document Organization

This study of resource and resource use in the vicinity of the TLH - Phase III proposed route is organized as follows:

Executive Summary The executive summary provides a synopsis of the study report.

Chapter 1 Chapter 1 identifies the study, its purpose and objectives and the study team.

Chapter 2 Chapter 2 contains a description of the study methodology, including review of existing literature and databases, and contacts made with representatives of key government departments or agencies and organizations.

Chapters 3 to 13 contain a description of the current resource use and user activities identified in the study area, the regulatory framework governing the activities, and emerging trends or future direction of activities. Activities identified and reviewed include:

- historical and contemporary land and resource use;
- settlement and municipal land use;
- waterway use;
- hunting and trapping (moose, caribou, black bear, small game and birds);
- fishing;
- outfitting operations;
- parks, reserves and other special places;
- cabins, trails and recreational areas;
- forestry;
- mining and mineral exploration;
- hydroelectric power development; and
- military activities.

Chapter 14 Chapter 14 provides a concluding overview of resource use and user activity in the area.

Chapter 15 Chapter 15 provides a list of the persons contacted and literature cited in this report.

Appendices Supporting materials are provided in appendices.

2.0 METHODOLOGY

This chapter provides an overview of the methodology used to obtain the information necessary for the study. Information was gathered through a review of existing sources of information on resource use and user activity in the study area, and contacts with appropriate representatives of government departments and agencies and other organizations. Information gathered for other studies carried out in conjunction with the environmental assessment was also used, where appropriate, to minimize duplication of effort and contacts.

2.1 Existing Information Review

Existing information sources were reviewed to identify available information/data on the following:

- legislation, regulations, policies and guidelines governing land and resource use activities in the region;
- settlement and development patterns, plans and strategies along the highway corridor;
- Innu land and resource use (historical and contemporary);
- land and resource use (historical and contemporary) by other residents;
- historical and current use of water courses for navigation purposes, in particular water course crossing locations;
- hunting, fishing and trapping practices;
- parks, reserves and other special areas;
- cabins, trails and recreational areas;
- mineral exploration activities and quarrying activities;
- forestry operations;
- hydroelectric power development; and
- changes in land and resource use due to previous highway development in Labrador.

Information was obtained from reports and databases held by various government departments and agencies, including:

- Department of Forest Resources and Agrifoods;
- Department of Municipal and Provincial Affairs (MAPA);
- Department of Government Services and Lands;
- Water Resources Management Division, Department of Environment;
- Department of Tourism, Culture and Recreation;
- Department of Mines and Energy;
- Department of Fisheries and Oceans (DFO);
- Parks Canada; and
- Department of National Defence.

Available land use mapping for the areas was obtained from the Newfoundland and Labrador Department of Government Services and Lands.

2.1.1 Aerial and Ground Surveys of Watercourses

Information on waterways along the proposed TLH - Phase III route was obtained during the aerial and ground surveys conducted as part of the fish and fish habitat study (JW/IELP 2003). Surveys were conducted on all identifiable watercourse crossing locations along the proposed route (Figure 1.2). A 500-m section of each watercourse i.e., 250 m above and 250 m below the approximate crossing location was videotaped and photographs taken. Representative photographs are presented in Appendix C. Of the 95 watercourse crossings identified along the route, 35 were surveyed on the ground to collect additional information. All videotape, photographs and notes were reviewed in an effort to assess the navigability potential of each crossing. Based on this review, JW/IELP (2003) classified watercourse crossings as being totally obstructed, partially obstructed or unobstructed.

2.1.2 Available Innu Land and Resource Use Information

The Innu land and resource use information presented in this study is based on information available in existing literature and archaeological databases. The Historic Resources Component Study (IELP 2002) prepared for the environmental assessment was also reviewed for information on historical and contemporary Innu land and resource use. A more indepth review of Innu land and resource use, which draws on a review of land use databases held by the Innu and interviews with Innu informants, is presented in Armitage and Stopp (2003). This study was also undertaken to support the TLH - Phase III environmental assessment.

Much of what is known about the Labrador Innu during the early portion of the historic period (i.e., 1500 to 1900 AD) is from the written accounts of European adventurers, missionaries and travelers, who visited the Labrador coast and eventually settled in the region. These documents typically provide a fragmented view of ancient Innu life-ways and lack inclusion of an Aboriginal perspective. In addition, the details of land and resource use in the hinterland remained largely unknown until the 19th century. However, this situation changed when the Hudson's Bay Company (HBC) established a series of trading outposts in the Québec-Labrador hinterlands (IEDE/JW 2002; Lévesque et al. 2001). Also, during the latter part of the 19th century, mapping and exploration of the interior for mineral resources and other purposes increased.

During the latter part of the 19th century, the first ethnographic research involving Innu and Inuit was undertaken in the Québec-Labrador peninsula (Turner 1894). However, it must be noted that Turner was based in Fort Chimo and described the northern aspects (Naskapi or Nenemot) of Innu culture. The next important ethnographic contribution to understanding traditional Innu life-ways was written by Cabot in 1920. Again, Cabot had traveled in the northern Labrador hinterland and his observations deal primarily with the Mushuau Innu, a Naskapi band who lived in the George River region. The Mushuau Innu only intensified their presence on the Labrador coast and became attached to the HBC station at Utshimassits after a major decline of the caribou population in the early 20th century (JW/MIBC/TCC 1997; Loring 1992).

More recently, ethnohistorians and anthropologists have summarized the history of Québec-Labrador, with a special attention devoted to traditional and changing land use and social organization of the Innu or Montagnais-Naskapi (e.g., Charest 2001; IEDE/JW 2000; Leacock 1981; Lévesque et al. 2001; Loring 1992; Mailhot 1996; Rogers and Leacock 1981). However, it is only after the Labrador Innu finally settled more permanently in the communities of Sheshatshiu and Utshimassits in the late 1950s/early 1960s that anthropologists began conducting interviews on traditional and contemporary Labrador Innu land and resource use. Results of investigations conducted in collaboration with the Sheshatshiu Innu are presented in the following reports:

- ethnographic research and land use studies (e.g., Armitage 1990; 1992; Mailhot 1993; Tanner 1977; Wolverine and Associates 2001); and
- regional context mapping and ethno-archaeological investigations of land use data point (camp locations) and harvesting areas with supplementary ethnographic interviews and public consultation (e.g., IELP 2002; JW/IELP 2000, 2001a; 2001b).

2.2 Interviews

Informant interviews were held, as necessary, to collect information on resource use and users in the study area. Informant interviews with Innu were conducted by Wolverine and Associates; the methods and results are provided in Armitage and Stopp (2003). Information on hunting, fishing, trapping, forestry, commercial and industrial, recreational and other activities were collected through interviews with personnel from various provincial and federal government agencies, as well as through discussions with local people knowledgeable about land and resource use in the region. Questions were tailored to address specific aspects of each resource sector and activities, including:

- current status of the resource and related use;
- regulatory framework governing the resource and its use; and
- any emerging trends or changes in resource use, in particular changes that may have occurred subsequent to road developments in Labrador.

Specific interviews were conducted to gather information on:

- watercourse navigability and use in the study area;
- outfitting operations and activities; and
- experience with previous sections of the TLH, which was conducted in conjunction with the issue scoping for the environmental assessment to minimize duplication of contacts.

Interviews generally followed the structure outlined by the interview guides (Appendices D (Waterway Use), E (Outfitters) and F (Issue Scoping)). As necessary, a map showing the TLH - Phase III route was provided to informants to provide orientation and assist with responses to questions.

As a supplement to the aerial and ground surveys of watercourses, interviews were carried out with local representatives of the Department of Forest Resources and Agrifoods and DFO in Happy Valley-Goose Bay and Cartwright to obtain information on current and past use of local waterways. Informants were informed of the purpose of the interviews, and their willingness to participate was confirmed. Informants were faxed a topographic map section showing the watercourse crossing locations. Questions focused on whether the section of waterway in the vicinity of the proposed crossing was currently used for travel by boat or snowmobile, or had been used in the past. If so, specific information regarding the time of the year in which it was used, the type and size of the vessel used, and the purpose of such travel (e.g., access to fishing or hunting areas) was obtained. Information on the general level of use of the watershed was also noted. Informants were invited to suggest any other individuals who, in their opinion, would be able to provide information on the use of these waterways for travel.

Contacts for questions on experience with the previous sections of the TLH included communities, business and economic development organizations, and tourism organizations. In addition, consultation with the Innu by WST about the proposed TLH - Phase III also provided observations made with respect to road development and changing resource use patterns in Labrador (Innu Nation 2002).

3.0 HISTORICAL LAND AND RESOURCE USE

It is known that the rich marine resources of the Labrador coast have attracted human populations since the earliest precontact (i.e., prehistoric or prior to the first sustained contact with Europeans) occupation of Labrador, circa 8,000 BP (i.e., Before Present calculated using 1950 AD as a base point). The hinterland also sustained highly mobile populations of hunter-gatherers, but with a lower-density than their coastal counterparts (Moreau 1984; Rogers and Leacock 1981). The lower density of occupation of the hinterland is due in part to the lower productivity of northern terrestrial ecosystems, in comparison to that of marine ecosystems. Terrestrial ecosystems are subject to dramatic changes (e.g., fluctuating caribou populations and forest fires), which affect human occupation. Geomorphological data also indicate that the central part of the Québec-Labrador peninsula became available for human occupation at a much later date than coastal areas, due in part to the presence of a retreating glacier, which disappeared approximately 6,000 BP (Richard 1981).

Since precontact times, the Labrador Innu bands and their predecessors have shared the land and resources with other Innu bands and other cultural groups from the Arctic and subarctic regions of Labrador-Québec. Archaeological records (notably MCC 2001; PAO 2002) confirm a lengthy Aboriginal presence in coastal Labrador and on the Québec North Shore. Numerous precontact sites relating to the following cultures have been found: Palaeo-Indian (9,000 to 8,000 BP); Maritime Archaic Indian (8,000 to 3,500 BP); Groswater Palaeoeskimo (2,800 to 2,100 BP); Dorset (2,000 to 860 BP); and Intermediate and Recent Indian (1,900 to 500 BP). However, only two precontact sites have been located to date within 5 km of proposed highway (IELP 2002), and both belong to the Intermediate Indian period (circa 3,500 to 2,000 years BP).

Archaeological investigations suggest that the Labrador Innu are the direct descendants of the late precontact Indian who occupied most of the Québec-Labrador peninsula during the last 2000 years (Loring 1992). These precontact Indian groups used coastal, as well as interior resources, and it is likely during their seasonal incursions on the Labrador coast and on the Québec North shore that most of them first encountered European explorers during the early contact period. Coastal resources and harvesting areas were also used by the Thule, another precontact Aboriginal population, the direct ancestors of the Labrador Inuit. Both Innu and Inuit land and resource use have been recorded in coastal Labrador and on the Québec North Shore, with most sites being located on the coast or near major lakes and rivers in the interior (MCC 2001; PAO 2002).

This chapter presents information on historical land and resource use in Central and Southern Labrador, covering the period from the 1500s to approximately the mid-1900s. The discussion is organized on the basis of two periods: 1500 AD to 1900 AD (post-contact); and 1900 AD to 1960 AD (pre-settlement).

In Labrador, 1960 represents the dividing line that marks the time when Aboriginal people settled more permanently in coastal communities. This date is used to divide the contemporary period (1900 AD to present) into the pre-settlement (1900 AD to 1960 AD) and post-settlement (1960 AD to present) periods. There is some debate about the use of 1960 to divide the contemporary period, as other researchers, in particular Tanner (1977), have used 1950 as the dividing line. The discussion in this chapter deals with land and resource use patterns up to approximately the mid-1900s. The following chapters in this report highlight contemporary resource use practices, while Armitage and Stopp (2003) address Innu land and resource use in detail.

3.1 Land and Resource Use from 1500 AD to 1800 AD (Early Historic Period)

The early portion of the historic period (approximately 1500 AD to 1800 AD) is characterized by change resulting from a growing European presence along coastal Labrador and the Québec North Shore. Archaeological and historical records confirm a lengthy European presence on the Québec North Shore and coastal Labrador from Sept-Îles to Hamilton Inlet. This was one of the first areas of North America to come to the attention of Europe, beginning with a probable Norse occupation in the 11th century. During the past five centuries, the area has seen almost continuous occupation or use by the French, Basques and British. The Montagnais, as well as the Micmac, Beothuck and Inuit, were also occasional visitors to the Québec North Shore and the south coast of Labrador during the early historic period (Charest 2001). As well, it appears that Inuit enclaves existed as far south as St. Lewis throughout the 19th century (Kennedy 1995).

While extensive trading networks existed between Labrador's Aboriginal peoples prior to contact with Europeans, trading activities between Aboriginal groups and European visitors to the region began with the Basque whalers, who were very active in the Gulf of St. Lawrence during the 16th century (Charest 2001). Trading with Europeans, who visited the coast of Labrador and Québec, saw the introduction of new technology and trade items (Hood 1993; Loring 1992). Archaeological and archival research show an increasing interaction between Aboriginal people and Europeans beginning with the introduction of items, such as guns (after 1670), that were not available prior to the arrival of Europeans (Chevrier 1996; Dufour 1996). Fur and other natural goods, such as seal oil, were traded for manufactured items such as iron blades, pots, guns, fabric and other commodities such as flour, tea, tobacco and alcohol (Trudel 2001). While the new tools provided improved means of resource extraction, these new trading practices led to changes in traditional land and resource use. For example, an increased presence of Europeans forced the Innu living in the Québec region to move eastward on the Québec Lower North Shore (e.g., Natshaquan) where they had to interact with groups such as the Micmac and Inuit (Vincent 1992).

With the emergence of the fur trade after 1580, the French, who had been involved in commercial fishing in the Gulf of St. Lawrence during the early part of the 16th century, began a long period of interaction with the Montagnais in the Gulf of St. Lawrence (Trudel 2001). The French eventually reached central Labrador by the early 18th century to conduct trading activities with Aboriginal people at the *Baie des Esquimaux*, the old French name for Hamilton Inlet/Lake Melville (JW 2002). In 1743, Louis Fornel a French trader met a group of Innu in the Strait of Belle Isle. They had firearms and spoke French. On their way to Hamilton Inlet, the Innu informed Fornel that the rivers in the Sandwich Bay area abounded in salmon. During the winter of 1743 to 1744, two of Fornel's men and a number of Innu stayed at the mouth of Rivière Nord-Ouest to carry out exploration and trade, and to establish a winter post on *Baie des Esquimaux* (Privy Council 1927; Trudel 1978). This post is possibly the earliest structure built by non-Aboriginal people in the region.

During the following decades, the fur trade flourished and a series of trading posts were established in the region. Vessels were sent each year to the region. The French were soon followed by the English, who first wintered in the region in 1777 (Fitzhugh 1972). Between 1773 and 1783, several French-Canadian merchants from Québec (e.g., Marcoux, Marchand and Dumontier) carried out trade at different posts in the Lake Melville region. In 1784, two competing French-Canadian companies each established a trading post in the region, one in Sheshatshiu and the other at North West River.

From 1829 to 1837, English-Canadian traders operated the posts at Sheshatshiu and North West River. The Hudson's Bay Company (HBC) bought the two trading posts in 1837, one year after it built Fort Smith at North West River. The name of Fort Smith was soon changed to North West River House. In the 19th century, the HBC also established a series of short-lived posts in the interior (e.g., Winokapau Post), where the Innu from the Lake Melville area interacted with the Innu from Mingan and possibly from other regions (JW 2002; Mailhot 1993). Révillon Frères, a competing French trading company, opened a post at North West River during the first decade of the 20th century (Armitage 1990). This trading post was in operation for more than five years (Kennedy 1995). However, the HBC continued operation at North West River until the recent times.

In addition to commercial ventures, the newcomers to the region were also involved in subsistence activities. Fresh meat and fish supplemented yearly supplies brought by ship from Europe and later, from elsewhere in North America. Captain George Cartwright sent trappers to Salmon River in Sandwich Bay in 1774, an area frequented by the Innu who were known as subsistence hunters, skilled trappers accustomed to trade, Catholics and fluent in French (Privy Council 1927; Tanner 1977). Male Settlers, many originally from England, eventually married Aboriginal women, primarily Inuit. Their descendants have been residents of Labrador since the early 1800s (Kennedy 1995).

While the timing and rate of cultural change varied by region, it has been suggested that Aboriginal groups, in particular the Naskapi from the northernmost part of the Québec-Labrador hinterland, maintained traditional subsistence without the aid of imported tools or equipment until more recent times (Lévesque et al. 2001). However, the use of metal instead of stone was rapidly adopted throughout Nitassinan (approximately two-thirds of the Québec-Labrador peninsula) and beyond. Although the rate of change in the subsistence economy may have varied from south to north, it appears that these changes had a dramatic effect on the size and organization of Aboriginal societies. The Labrador Innu are no exception. However, very little is known of the original band structure and way of life of the Labrador Innu during the early historic period (circa 1500 to 1800 AD).

3.2 Land and Resource Use from 1800 AD to 1900 AD (Late Historic Period)

During the 1800s, both the Innu and Settler/Métis were involved in land and resource use activities in Central and Southern Labrador, including the fur trade.

The Innu of southern Labrador and the Québec North Shore gradually became involved in the fur trade over time. However, the fur trade with the Innu of southern Labrador and the Québec North Shore probably was not fully developed until the beginning of the 19th century or later (Tanner 1977). Reports indicate that trading was occurring with Innu groups elsewhere in south-central Labrador by the mid to late 1800s: two groups near Mary's Harbour between 1850 and 1855; five families near Paradise, in Sandwich Bay in 1890; and approximately 16 families or 100 individuals near Cartwright in 1892.

Other reports indicate that the Innu were still living in birch-bark tents in 1873, and left North West River in the summer returning to the post the following spring (Tanner 1977; Privy Council 1927). When trading expanded northward to Hamilton Inlet, most of the Innu, in particular women and children, stayed in the hinterland. By the 1880s, the fur trade and missionary activity had changed the regional economy as well as the Innu settlement pattern, which by this time involved at least one annual voyage to the post (or to the coast).

Between 1883 and 1906, there were approximately 200 Innu and 140 Settlers trading at North West River. Settler trappers were now using the Churchill River, Kenamu River and Naskaupi River between September and December. The country lying south of the Kenamu was thought to be good trapping ground and the area lying between 60 and 260 km south of the Churchill Estuary, overlapping with the south side of Innu territory was now used by Settlers. During that same period, the Innu attached to the North West River post were equally divided with the better hunters using the area south and southeast of North West River, that is, the watershed of the rivers flowing into the Gulf of St. Lawrence and Hamilton Inlet (Tanner 1977). McLean, who had worked for the HBC at Rigolet and North West River from 1872 to 1877, declared in 1921 that the Innu hunted in the territory both north and south of Lake Melville and Hamilton Inlet, as well as in the area extending out to the coast (Tanner 1977; Privy Council 1927).

It was reported that 30 "Indians" visited the North West River post in 1857 to trade seal blubber apparently obtained by hunting seals in Hamilton Inlet and that "Indians" caught seals in the Hamilton Inlet region around that same period. However, the Innu hunted and trapped in the interior most of the time and visited the post only in the summer. Again, in 1863, while the Naskapi Innu traded at the HBC posts in the interior, the Montagnais Innu who lived on each side of Hamilton Inlet caught many seals in the spring and traded at North West River (Tanner 1977). Perhaps the authors of these various reports (Elsner, Hallock and Captain Hamilton) were referring to Inuit or perhaps seal blubber and other seal products were obtained by the Innu (Indians) from the Inuit or Settlers through previous exchange. It must be noted that seals are hunted by the Innu of Utshimassists, but rarely by the Sheshatshiu Innu during the contemporary period (Armitage 1990).

3.2.1 The Innu (or Montagnais-Naskapi)

In the early 19th century, the Innu (or Montagnais-Naskapi) formed one large nation with different tribes, each with its own dialect (Tanner 1977). The Innu culture has been associated with two traditions (birch bark and the beaver (Montagnais), and the caribou (Naskapi)), which have been shaped by the differences in the boreal forest and the taiga inhabited by the two groups. The Montagnais lived on the coast and in the interior, from Québec to St. Paul River and from the St. Lawrence to the Churchill River; and the Naskapi lived more permanently in the interior plateau or the so-called "height of the land" (Charest 2001).

During the fur trade period (1650 to 1950), Innu groups that lived in areas where beaver was plentiful encountered less disruption in their traditional way of life, because trapping this animal also produced a source of meat in return (Mailhot 1993). In other areas, Innu people engaged in trapping other species such as mink and otter would have to spend additional time conducting subsistence hunting.

As they inhabited territory further into the interior and likely at the head of the Moisie River and north of Ashwanipi Lake, the Naskapi are thought to have had the least interaction with Europeans for most of the early historic period. However, by the end of the 18th century, Naskapi were visiting trading posts in Abitibi, along the east coast of James Bay, and on the St. Lawrence North Shore. At the beginning of the 19th century, they were visiting Mingan and Utshimassits, and were present as far as Okkak. At a later date, the term Naskapi was used for any groups living in the interior who were rarely seen at the trading posts except at posts established in the interior (Lévesque et al. 2001). During that period, they were certainly interacting with other Aboriginal neighbors, such as the eastern James Bay Cree and the Inuit. At a later date, they were also interacting with Euro-Canadians at trading posts and dealing with missionaries and Christianity (e.g., at Fort Chimo on the Ungava coast and Fort McKenzie in the interior).

The Montagnais-Naskapi travelled across extensive territories, while harvesting a variety of animals, birds and fish. Caribou, moose, bear, beaver, porcupine, ducks and geese, partridge and salmon were used for food, and meat, skin and antlers were traded with other groups. Subsistence activities varied throughout the year: hunting migrating birds and fishing in the spring and summer; trapping furbearers in the fall; and hunting larger mammals in the winter.

Hunting groups moved from place to place and camps, often only used for a few days or a few weeks. Camps were relatively small with between three and five families. These small groups joined other groups to form larger aggregations for communal caribou hunting in the winter or in the summer for feasting, bartering and building further alliances, as young people had the opportunity to find a spouse. The population density was extremely low, with 0.004 inhabitant per square kilometre and an estimated total of approximately 4,000 Innu for the entire Québec-Labrador peninsula (Rogers and Leacock 1981). Bands normally associated with the watershed of large rivers such as La Romaine would not exceed 100 to 200 persons.

Men engaged in hunting, trapping and fishing, while the women took care of the camp, cooking and caring for the children. Women were also involved in hunting small game, fishing near the camp, transporting some gear and paddling during the move to other camps. The economy was egalitarian and food was shared within a group of families at the camp and eventually with other families who were not so successful.

Basic techniques were simple, but well adapted for the tasks. Materials, such as stone, wood, leather, bone and antler, were used. Typical tools and implements included lance, bow and arrow, knife and scrapers. Ingenious means of transportation included birch bark canoes, sledges made from birch wood with bone slips, and snowshoes. The Innu drew their own sledges, as their dogs were small and only used for hunting (Tanner 1977). Conical tents and multiple-family dwellings (*shaputuan*) were made of poles covered with birch bark or skins that could be transported to the next camp. Minimum clothing was worn in the summer, but winter clothing was extremely sophisticated and well-adapted to protect from the cold.

By the later part of the 19th and the first part of the 20th century, the Innu were living on and using the resources of the whole hinterland of southern Labrador, perhaps in a manner that changed since the time of their first contact with European. Indeed, the technology of hunting had changed and they were now dependent on ammunition. With the advent of the fur trade, women spent more time in the camp preparing the pelts. Specific harvesting areas may also have changed because of the conflicting demands of subsistence hunting and of trapping for the fur trade. During the late historic and pre-settlement period, it appears that

the Innu groups were associated with particular hunting areas, to which they normally returned year after year, but with considerable movement between these regional groups. In the northern part of the Québec-Labrador peninsula, the Innu population was more scattered than in the south. In the southern and more densely forested region, the Innu groups in the east tended to be more nomadic and their hunting groups larger than those towards the west who relied more heavily on sedentary preys such as moose and beaver (Tanner 1977).

Land tenure in the Lake Melville area was rather communal and land use and family ties were interwoven and inseparable. Boundaries were only suggested by natural features such as major rivers. Thus the territory of the Innu of Sheshasthiu would include the watershed of the numerous rivers that flow into Lake Melville. Their homeland was the plateau where they hunted, trapped, fished and met with other groups near the larger lakes located at higher elevation. However, it appears that there was always a movement back and forth to the coastal plain and the ocean.

Mobility was highly valued by the Innu. The entire region is criss-crossed by Innu travel routes. In summer, these routes normally followed navigable rivers and lakes, often with portages. Along the summer routes, a portage (*pakatakan*) is considered a major feature and portages were all named (e.g., a large portage in the central part of the Eagle plateau is *Usikwanachihew Pakatakan*). Another portage, a little to the north of it, connects a tributary of Eagle River is called *Kaytukubitak Pakatakan*, which means "where the rivers divide" (Tanner 1977). Along major travel routes, the Innu would leave coded messages, using sticks or charcoal on birchbark (after 1700) at a cache or rock cairn. One such rock cairn is located on an island in a lake at the headwaters of the Eagle River, on the main trail used by the Saint-Augustin Innu and the Innu hunting on the Eagle Plateau when they travel to North West River. This rock cairn is called *Cipitapsinakan* or "ghost rock". It consists of a large pile of rocks that was used as a landmark and where emergency supplies were cached. It also marked the half-way point between North West River and Saint-Augustin, a five-day trip from either place. It also symbolized Innu land use and ownership. While every Innu was free to use any part of the land, each region tended to be used by a particular group of Innu. Those who hunted in the Mealy Mountains were people who were originally from the Saint-Augustin region (Tanner 1977).

Based on a review of available information pertaining to the historic and contemporary Innu land use of the Eagle Plateau region, it is concluded that:

- the region was the traditional homeland of Innu family groups who finally settled in Sheshatshiu and Saint-Augustin during the late contemporary period (between 1950 and 1970);
- these family groups became progressively attached to trading posts and missions that were established at these coastal locations;
- this process occurred over a long period of time, during which the Innu of the Eagle Plateau region were also visiting other non-Aboriginal establishments; and
- during the late historic and contemporary period, the Innu had to compete with an increasing number of non-Innu groups who were also using the region for a wide range of activities, including subsistence and recreational hunting and fishing, exploration, tourism and small-scale industrial undertakings.

3.2.2 Settler/Métis

The Settler/Métis are people of European and/or Aboriginal origin whose ancestors resided in Labrador as early as the historic period (JW/INEN 2001a). The Settler/Métis way of life represents a mix of European and aboriginal skills. The majority of early Settlers were Englishmen and Scotsmen who arrived in Labrador with the HBC or with other trading operations in the early 19th century, or worked with the seasonal commercial fisheries. Permanent settlement eventually led to intermarriage with the local Aboriginal population, particularly Inuit (Kennedy 1995).

Preparation for trapping started in September. The winter months were spent trapping in the interior, following designated trap lines that might hold 200 or 300 traps and were made accessible by a series of tilts for overnighting. Prime fur season began in October and did not finish until the spring, with occasional forays to hunt caribou. At this time, families would remain at the permanent residence, where women maintained household duties, and sewed clothing (Goudie 1996; IEDE/JW 2000).

A series of tilts were distributed along trap lines a day's journey apart for use during the winter months (Stopp 2002). The tilts would be spaced along the length of the trap line, which ran for many miles through the interior. Tilts were generally maintained for many years. The following description by Stuart Cotter, factor at North West River Post during the years 1893-1901 and 1904-1906, gives an indication of land use by Settlers in the Hamilton Inlet region (IEDE/JW 2000: 97-98)):

The Hamilton was the river on which most of the hunters were located, but the Kinnomou [Kenamu River] was also trapped as well as the Nasco pie. The country lying south of the Kinnomou was good trapping ground, the 'paths' crossed this river and ran from 25 to nearly 100 miles in a south westerly direction. The 'tilts' were built every 10 or 15 miles apart or what constituted a days walk on snowshoes (short winter days) giving the hunter time to adjust the traps.

Furbearers trapped included beaver, fox, lynx, pine marten, otter and mink. Subsistence activities carried out while trapping included hunting caribou, when available, porcupine, partridges and hare for immediate needs. Food and equipment caches were sometimes placed at key locations along travel routes and traplines (Stopp 2002). Men would continue trapping until spring when they returned to the Lake Melville area to hunt seals. Ducks and geese were also hunted during the spring migration north. Salmon fishing in July, cod fishing in August and gathering berries in late summer and fall were other activities.

Several areas of the hinterland were used by Settlers from Mud Lake, including the Kenamu River and adjoining waterways. Residents of Cartwright indicated that the Eagle and Paradise Rivers were used extensively by trappers (IELP 2002). Several sites identified within the project area during the field historic resources field survey for the TLH - Phase III project are likely attributable to the Settler population of south-central Labrador. However, it must be noted that it is not always possible to distinguish between Innu and Settler trails and/or cutting locations.

Land areas historically used by the Settler/Métis overlap with those used by the Innu, including trapping along the Eagle, Paradise and Kenamu rivers, and hunting in the Mealy Mountains and the Eagle River Plateau. Settlers/Métis from the Happy Valley-Goose Bay area primarily used the Traverspine and Kenamu rivers, the Mealy Mountains and eastward towards the Eagle Plateau, while Settlers/Métis from Cartwright and Paradise River naturally tended to use the Paradise and Eagle Rivers, as well as the Great Meshes (Stopp 2002).

3.3 Land and Resource Use from 1900 AD to 1960 AD (Pre-settlement)

By the 1900s, both the Innu and Settler/Métis are carrying out resource use activities throughout the study area and competing for the same resources. Trapping along the Eagle, Paradise and Kenamu rivers, and hunting in the Mealy Mountains and the Eagle River Plateau are key activities of both groups.

3.3.1 Pre-settlement Innu Land and Resource Use

The Sheshatshiu Innu have traveled and lived over the entire eastern portion of the Québec-Labrador peninsula (Mailhot 1993). Mailhot (1993) delineated two large subdivisions of the Sheshatshiu band territory: one south of Sheshatshiu stretching from Dominion Lake (Nipissu) to the headwaters of the Eagle River (*Nuatpinuant-shipi*) (Tanner 1977, regions 1 and 2); the other northwest of Sheshatshiu. This region includes a large area traversed by the TLH - Phase III route, and an area on both sides of the Churchill River estuary and the hinterland south of Goose Bay and western Lake Melville. Mailhot (1993) also found evidence of land and resource use in the Sandwich Bay-Paradise sub-region and a large region of the hinterland south of the TLH - Phase III project area extending closer to the community of Saint-Augustin.

During the pre-settlement period, there were two major subdivisions: the North Side (of Lake Melville) Innu and the South Side Innu. Each subdivision had a number of travel routes to the hinterland and preferred fishing locations at the mouth of the principal rivers where families would congregate (Mailhot 1993). Tanner (1977) identified the homeland and harvesting areas of five Innu groups who were trading at the Sheshatshiu/North West River post during the pre-settlement period (1900 to 1960), including the Eagle Plateau; the Little Mecatina; the Atikonak; the Michikamau and Upper Naskapi regions. However, it must be noted that the Innu families living in these regions were also part of a larger network through family and social ties.

During the first part of the 20th century, the Saint-Augustin Innu band was composed of approximately 15 families (40 to 50 individuals). Their hunting territories extended from the Strait of Belle Isle to Hamilton Inlet, within and east of the watershed of Saint-Paul, Saint-Augustin and Paradise rivers. The band normally met at Saint-Augustin but also at North West River and was led by Chief William Ashini (prior to 1917) and Chief Sylvester Mark (after 1920). Small, cooperative, and mobile groups (perhaps one or two extended families) traveled freely in the winter, and gathered together with other bands during the summer at the coast or at one of the large inland lakes. The Saint-Augustin River was the principal travel route to the headwaters of the Kenamu River and following the latter to Hamilton Inlet. It would take approximately seven days to reach their destination.

Between 1900 and 1930, Tanner (1997) notes that the Innu spent most of the year south of the Mealy Mountains. They normally left Sheshatshiu in August and traveled by way of the Kenamu River into the interior. In the fall, they moved north in the Mealy Mountains to hunt caribou. They were joined by groups from Sandwich Bay, after which they split up into groups of two or three families each, who used different areas of the Eagle Plateau and of the region south of it. At Christmas, they normally went to Sheshatshiu or Saint-Augustin, but would remain inland until the summer if hunting had been more successful. In spring, they were fishing and hunting for waterfowl and then normally traveled to Sheshatshiu. In summer, they sometimes camped near Hamilton Inlet or travel overland to visit friends and relatives in Saint-Augustin. The Innu using this region sometimes followed the Mealy Mountains caribou as far west as Minipi Lake. Members of the Eagle Plateau band occasionally trapped north of Lake Melville, along the Goose and Naskaupi rivers as guests of Innu who lived there.

Between 1930 and 1950, the annual cycle was similar to the preceding period (Tanner 1977). Children were born in the bush, unless the mother happened to be at Sheshatshiu. Some Innu continued to trade at Cartwright during the first part of this period. After 1942, the Innu spent more of the summer near Hamilton Inlet. After trading at Sheshatshiu, they established summer camps at the mouth of the Kenamu and Kenemich rivers and along the south shore of Hamilton Inlet. Innu from all of the southern Labrador regions regularly gathered at Sheshatshiu for Christmas. Many of them would hunt caribou in the Mealy Mountains during January and February, before they returned to their trapping areas. Occasionally, the Innu of the Eagle Plateau group would join them. They traveled into the hinterland on snowshoes, using the river valleys on the north slope of the mountains.

Through the pre-settlement period (1900 AD to 1960 AD), in southern Labrador, the Innu diet was largely based on caribou and fish, supplemented by beaver, porcupine, seal, rabbit and hare, grouse and ptarmigan. In summer, fish and waterfowl were harvested at large lakes or on the coast (Tanner 1977). Wildlife, birds and fish harvested by the Innu, along with information on key Innu harvesting areas during the pre-settlement period, are noted in Tables 3.1 to 3.3.

In addition to wildlife and fish, berries and wood were also important. Blueberries, cranberries, raspberries and bakeapples were most often gathered in the mid to late summer and are found throughout the region. Blueberries and cranberries may remain frozen under the snow and there is a second gathering period in April or May. Wood was one of the most important of natural resources to the Innu. Black spruce was used for firewood and habitation and is found throughout the region. Birch was used in the manufacture of many articles, such as snowshoe frames and wooden snow shovels. Tamarack was used for toboggan boards and balsam and spruce branches for mats inside and outside the tent (Rogers and Leacock 1981). Spruce is most common, but other trees are found in specific areas and camp sites are selected and may be changed on the basis of the availability of these trees. Traditionally, the forest has provided shelter, medicine, food and basic materials for generations of Innu people.

Table 3.1 Wildlife Distribution and Innu Harvesting Areas

Animal	Habitat and Distribution	Resource Use
Caribou (<i>Atiku</i>) <i>Ranifer tarandus</i>	Normally scattered south of the Mealy Mountains over a wide area of flat, open forests in summer and early winter. Move north in the Mealy Mountains in winter, then in spring back to the wooded areas immediately south of the Mealy Mountains, and from May to summer on Eagle River plateau.	In summer and winter, caribou were hunted east and south of the Park Lake area. Access was via a portage route between the Kenamu and Eagle River watersheds. In fall and winter, caribou were hunted by groups of hunters who drove the animals into enclosures.
Beaver (<i>Amishku</i>) <i>Castor canadensis</i>	Beaver are particularly plentiful in the tributaries of the Upper Kenamu River, in the extreme western headwaters of the Eagle River, and around several lakes. Other areas rich in beaver are around Park Lake and an area where the Eagle River is joined by several tributaries around <i>Uwskaw Nipi</i> , and around other lakes.	Beaver is the most important furbearer to the Innu of the Eagle Plateau region because it provides high quality meat in addition to its fur. Beaver are trapped all winter throughout the region, wherever there is a right combination of wetlands and trees.
Otter (<i>Nitshuk"</i>) <i>Lutra canadensis</i>	Throughout the region where good supply of running freshwater. They are trapped in Eagle River, its tributaries, and in the lakes that feed them. They are also hunted in the headwaters of Saint-Augustin River, Paradise, English, Kenamu and Kenemich rivers.	They are usually trapped in early winter or in spring, when rapids and fast-running rivers first open, but when there is still enough snow and ice to make overland travel easy. The trap is normally 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 trying to escape.
Mink (<i>Atshikash</i>) <i>Mustela vison</i>	Mobile animal; travels along the shores of lakes, rivers and small streams. Throughout the wetlands of the Eagle Plateau.	Throughout the region, whenever tracks are found.
Muskrat (<i>Ushashku</i>) <i>Ondatra zibethica</i> (U)	Common throughout the wetlands; plentiful in a large area of string bogs centred approximately on Nekwanakaw Lake in the central part of the Eagle Plateau.	Trapped in the central part of the Eagle Plateau region; also in the watershed of English and Kenamu rivers and wetlands southeast of Carter Basin.
Fox (<i>Matsheshu</i>) <i>Vulpes fulva</i> (C)	Numbers fluctuate in both time and space.	Throughout the region, including the wooded parts of the Mealy Mountains; trapped in greatest numbers in areas of lakes and forest; same general areas as for beaver (see above).
Lynx (<i>Pishu</i>) <i>Lynx canadensis</i> (U)	Areas where lakes are surrounded by well-drained forest.	North of the central part of the Eagle Plateau, around <i>Iyatueyagabew</i> , west around <i>Mistassini</i> and southwest around <i>Pushe Nipi</i> .
Marten (<i>Uapishtan</i>) <i>Martes americana</i> (C)	Mature forest in extensive areas between the Mealy Mountains in the North and the Eagle River wetlands in the south, from Kenamu River to English River.	Along trap-lines that lead away from the larger lakes on which winter camps are located, towards higher ground; east and west of <i>Iyatueyagabew</i> , area between <i>Winikus Usakumesim</i> and <i>Kamisikamat</i> ; area between Kenamu River and the Mealy Mountains; lower north slopes of the Mealy Mountains.
Bear (<i>Mashk"</i>) <i>Ursus americanus</i> (C)	Throughout major hunting and trapping areas of the Eagle Plateau region (see beaver above).	Normally killed in the spring and summer; also hunted in the fall in burned-over areas of forest, in the Mealy Mountains and in areas of intermittent forest and open country.
Ermine (<i>Shiskush</i>) <i>Mustela erminea</i>	Throughout the region, in forested areas, shoreline of lakes and streams.	
Porcupine (<i>Kak"</i>) <i>Erethizon dorsatus</i> (C)	Throughout the region; primarily in area between the Mealy Mountains and north of the headwaters of Eagle River and headwaters of Saint-Augustin River.	Mostly hunted in the fall and in the spring or when hunting other animals is difficult; highly priced item for food.

Animal	Habitat and Distribution	Resource Use
Snowshoe Hare (<i>Uapush</i>) <i>Lepus americanus</i> (U)	Throughout forested areas.	Snared around camps; shot with 22 rifle when travelling on snowshoe during winter hunting or trapping trips.
Note: Letters between brackets are from wildlife biologists who were asked to comment on the current abundance and distribution of each category in 2002. C= common or widespread in suitable habitat - not necessarily large numbers in any particular area; U= uncommon or at low densities (this may be because they naturally occur at low densities such as black bear).		
Source: Tanner 1977.		

Table 3.2 Bird Distribution and Innu Harvesting Areas

Birds	Habitat and Distribution	Resource Use
Ptarmigan (C)	Throughout forested areas and Mealy Mountains.	Shot with 22 rifle when travelling on snowshoe during winter hunting or trapping trips.
Grouse (C)	Throughout forested areas.	Shot with 22 rifle when travelling on snowshoe during winter hunting or trapping trips).
Waterfowl	In spring, staging areas for geese (C) and several duck species (C), with many birds nesting and spending the summer.	Most important hunting areas in the lakes and marshes of the central part of the Eagle River watershed; headwaters of English, Saint-Augustin and Kenamu rivers; shores of Hamilton Inlet and wetlands such as the area south and east of Mud Lake.
Note: Letters between brackets are from wildlife biologists who were asked to comment on the current abundance and distribution of each category in 2002. C= common or widespread in suitable habitat - not necessarily large numbers in any particular area; U= uncommon or at low densities (this may be because they naturally occur at low densities such as black bear).		
Source: Tanner 1977.		

Table 3.3 Fish Distribution and Innu Harvesting Areas

Fish	Habitat and Distribution	Resource Use
Freshwater Fish, including Lake Trout, Whitefish, Speckled or Brook trout (C), Pike, Sucker (C) and Burbot (U)	Largest lakes (generally the most productive).	Of great importance in summer and winter; throughout the region, line or gill net; in winter, lines and nets are set under the ice; fishing in the most productive part of each lake, which may vary by season.
Salmon	Many of the rivers that drain into Hamilton Inlet and Sandwich Bay.	Caught in Eagle River and its tributaries; along Hamilton Inlet and Sandwich Bay; Kenamu and Kenemich rivers as well as smaller streams flowing into Hamilton Inlet; formerly spearing at night with the light of torches attached to the front of canoes; nets.
Saltwater Fish	Mouth of rivers and bays in Hamilton Inlet, mouth of Churchill River, entrance to Mud Lake and south shore of Hamilton Inlet as far as English River.	Trout, smelt and rock cod caught by net; at summer fish camps; trout and cod by jigging or setting lines; trout also through the ice by jigging or set lines.
Note: Letters between brackets are from wildlife biologists who were asked to comment on the current abundance and distribution of each category in 2002. C= common or widespread in suitable habitat - not necessarily large numbers in any particular area; U= uncommon or at low densities (this may be because they naturally occur at low densities such as black bear)		
Source: Tanner 1977.		

In summary, many of the resources used by the Innu in the Eagle Plateau region were found in all parts of the region, while certain key resources such as caribou, fish, beaver and waterfowl were found at specific locations at particular times of the year. The most important harvesting areas were:

- Mealy Mountains;
- shoreline of Hamilton Inlet, near the mouth of rivers and streams;
- shoreline of major rivers of the region, especially the Kenamu, Kenemich and English rivers;
- Eagle River and its tributaries, Paradise River and the upper parts of Saint-Paul and Saint-Augustin rivers; and
- shoreline of the larger lakes at the headwaters of the Eagle River.

By the post-settlement period, land tenure appeared to operate according to the pre-settlement mobility pattern described for the preceding period. However, the extent of land use had diminished. Sheshatshiu Innu no longer canoe or walk to their hinterland hunting areas. Instead, they used chartered aircraft and no longer travel long distances to various trading posts or missions. Hunting small game and fishing along traditional travel routes has ceased. The Eagle River plateau region and Kenamu River are considered one of the most important post-settlement harvesting areas used by the Innu of Sheshatshiu (Armitage 1990). Land and resource use by the Innu in the post-settlement period are discussed in greater detail in Armitage and Stopp (2003).

3.3.2 Pre-settlement Settler/Métis Land and Resource Use

Today, the Settler (or Métis) population of the study area is distributed in several communities in southern Labrador, the Labrador Straits and the Québec North Shore. Until the 1930s, families practiced a seasonal subsistence system that encompassed the cod fishery and sealing along the outer coast, a salmon fishery along the rivers of Hamilton Inlet, the trapping of fur-bearers along established traplines and occasional caribou hunting in the interior (IEDE/JW 2000; Kennedy 1995).

In the 20th century a growing number of factors led to the eventual downfall of the Settler/Métis traditional way of life including lumbering operations in the Mud Lake area, the depression of the 1930s, the construction of the Goose Bay air base in the 1940s and the advent of snowmobiles and other means of modern transportation.

In recent years, the land and resource use by Settlers/Métis has changed in the following manner:

- fewer trappers harvest resources in the interior;
- trappers spend less time in the interior;
- areas of use have increased;
- traditional series of tilts spread along the route were eliminated;
- transportable canvas camps and occasional main (built) camp are used; and
- trappers return to community on a regular basis instead of remaining at a winter camp or on a trapline for three months (IELP 2002).

4.0 SETTLEMENT AND MUNICIPAL LAND USE

There are 15 communities in the study area: four in Regional Economic Zone 3 (Central Labrador) and 11 in Regional Economic Zone 4 (Southern Labrador) (Figure 1.3). However, there are no communities in the immediate vicinity of the proposed highway route. Communities in Zone 3 include Happy Valley-Goose Bay, North West River, Sheshatshiu and Mud Lake. Communities in Zone 4 include Cartwright, Charlottetown, Port Hope Simpson, St. Lewis, Mary's Harbour, Paradise River, Black Tickle-Domino, Norman Bay, Pinseent's Arm, William's Harbour and Lodge Bay.

This chapter highlights the processes in place for addressing planning and development in the study area, focusing on requirements associated with municipal and regional planning, protected roads and domestic water supplies. Legislation, regulations and guidelines govern what development may occur in the area and the processes to be followed.

4.1 Settlement History

While Happy Valley-Goose Bay is the largest community in Zone 3, North West River and Mud Lake are the oldest communities in the zone, with a settlement history dating to approximately the mid-1750s and 1850s, respectively. A fur trading post was established at North West River in 1743 by the French; however, settlement did not begin until after 1785 when the English had taken over the territory. Settlement in Mud Lake, a trapping and fishing community, began around 1850 (CLEDB n.d.).

The Town of Happy Valley-Goose Bay grew around the air base established by the United States military in 1941. The town encompasses what is now Canadian Forces Base (CFB) Goose Bay. The economic opportunities from the air base drew people from other areas of Labrador, including North West River and Mud Lake. Military activities continue to be a key component of the town's economy. Happy Valley-Goose Bay is now the regional and administrative centre for the Central Labrador area, as well as for the northern Labrador coast.

While Sheshatshiu was the site of a fur trade post in the late 1700s (Fitzhugh 1972), formal settlement did not occur until the mid-1900s. The settlement grew as changes to Innu traditional harvesting patterns came about as a result of requirements for children to attend schools, and industrial development and growing availability of services in the Happy Valley-Goose Bay area. Following the 1950s, the Innu established a permanent settlement at Sheshatshiu. While the Innu were based in the community, harvesting activities continued with Innu traveling to hunting and fishing areas by aircraft and snowmobile (Armitage 1990).

In Southern Labrador, residents traditionally practiced a migratory lifestyle, with residents migrating between summer fishing stations on the coast and winter settlements in sheltered bays. As health, education and commercial infrastructure became established in larger communities, many residents chose to live in these communities year-round, abandoning their seasonal migration to summer fishing stations. The declining fish stocks and cod moratorium in recent years have contributed to a further decline in this seasonal practice. However, some families continue the seasonal migration to fishing stations returning at the end of the summer.

4.2 Municipal Land Use Planning

MAPA is responsible for fostering the development and maintenance of local government services throughout the province. The Urban and Rural Planning Division of MAPA is responsible for providing advice on land use planning in the province to local authorities and other government departments and agencies. The division is responsible for administering the *Urban and Rural Planning Act, 2000*, which establishes the province's land use planning system and outlines the requirements for preparing, approving and implementing planning documents.

A municipal plan is a legal document prepared pursuant to the *Urban and Rural Planning Act, 2000*, and is binding on the municipality, council and others using or proposing to use land in the municipal planning area (MPA). A development permit is required for any development within a municipal or local planning area as designated under the *Urban and Rural Planning Act, 2000*. All development in the MPA must be carried out according to the municipal plan and associated development regulations.

Before a municipal plan and development regulations can be prepared, a MPA must be defined. MPAs typically encompass the developed area of the community and a larger land area surrounding the community. Land area beyond the built area of a community may be incorporated into the MPA to allow a municipal council to control development that may affect the municipality, control municipal amenities or protect municipal water supplies.

Following the designation of a MPA, a municipal plan and corresponding set of development regulations can be prepared. The municipal plan divides the MPA into land use designations and defines the manner in which development may occur in the MPA, as well as makes provisions for handling non-conforming uses. The development regulations specify permitted and discretionary land uses within each land use zone. The plan and development regulations cover a period of 10 years, with a mandatory requirement for review of not more than five years after the plan and regulations come into effect.

Public consultation is a legislative requirement of the municipal planning process and must be carried out when preparing new municipal plans and development regulations, and during any amendments made to a municipal plan and development regulations. Opportunity must be provided for interested persons, community groups, municipalities, local service districts, regional economic development boards and government departments to obtain information and provide input on the proposed plan, development regulations or amendments. The results of the consultation must be considered in preparing the plan, development regulations or amendment and submitted to MAPA along with the final plan, development regulations or amendment approved by the municipal council.

When a proposed plan and development regulations or amendments to these documents have been adopted by a council or regional authority, arrangements must be made to hold a public hearing to allow interested parties an opportunity to make presentations or raise objections. This hearing provides an opportunity for further public comment on the proposed plan, development regulation or amendment. The public hearing may be cancelled two days prior to the event, if no notice to make an objection or representation is received up to this time. The public hearing commissioner makes a report to council.

The final decision on a municipal plan, development regulations or amendments is made by council. Also, decisions on development permits within a MPA are made by the local council.

Of the four communities in Zone 3, Happy Valley-Goose Bay and North West River are incorporated municipalities (Figure 4.1) administered by a mayor, town council and town manager and/or clerk. Both Happy Valley-Goose Bay and North West River have municipal plans and development regulations, and defined MPAs. Mud Lake and Sheshatshiu are unincorporated communities and do not have municipal plans. Mud Lake is administered by a Local Improvement Committee, while Sheshatshiu is an Innu community administered by a Band Council.

In Zone 4, Cartwright, Charlottetown, Port Hope Simpson, St. Lewis and Mary's Harbour are incorporated towns (Figure 4.1) administered by a mayor, town council and town clerk. All six of these towns have municipal plans and defined MPAs. The remaining communities in Zone 4 are unincorporated and do not have municipal plans.

4.3 Regional and Protected Area Planning

Sections 6 to 9 of the *Urban and Rural Planning Act, 2000* provides for the establishment of regional planning areas and regional authorities to administer the planning areas. Regional plans are prepared following the same process as that used for municipal plans and are subject to the same requirements for public consultation and public hearings. Similar to municipal plans, a corresponding set of development regulations is prepared along with the regional plan to outline development control measures for the regional planning area.

There are no regional plans in place in Labrador. On the island of Newfoundland, a regional planning area has been established on Fogo Island, covering all areas on the island that are outside defined municipal planning areas on the island.

Protected area planning is provided for in Sections 31 and 33 of the *Urban and Rural Planning Act, 2000*. Where it is determined that control should be placed on development in an area to preserve the area's natural beauty or amenity, the minister can declare an area outside a municipality to be a protected area and define its boundaries. Protected area plans are prepared by the same process used for municipal and regional plans. Any development within the protected area is governed by the plan.

There are no protected area plans in place in Labrador under this act. On the island of Newfoundland, protected areas have been established for the Gander River and Marble Mountain, and development regulations have been put in place for both areas.

Provisions for establishing Special Management Areas are outlined in the provincial *Lands Act*. Regulations may prescribe controls on the conveying, leasing or licensing of lands, constructing or placing structures and activities that may be carried out in the Special Management Area, as well as provide licenses and permits.

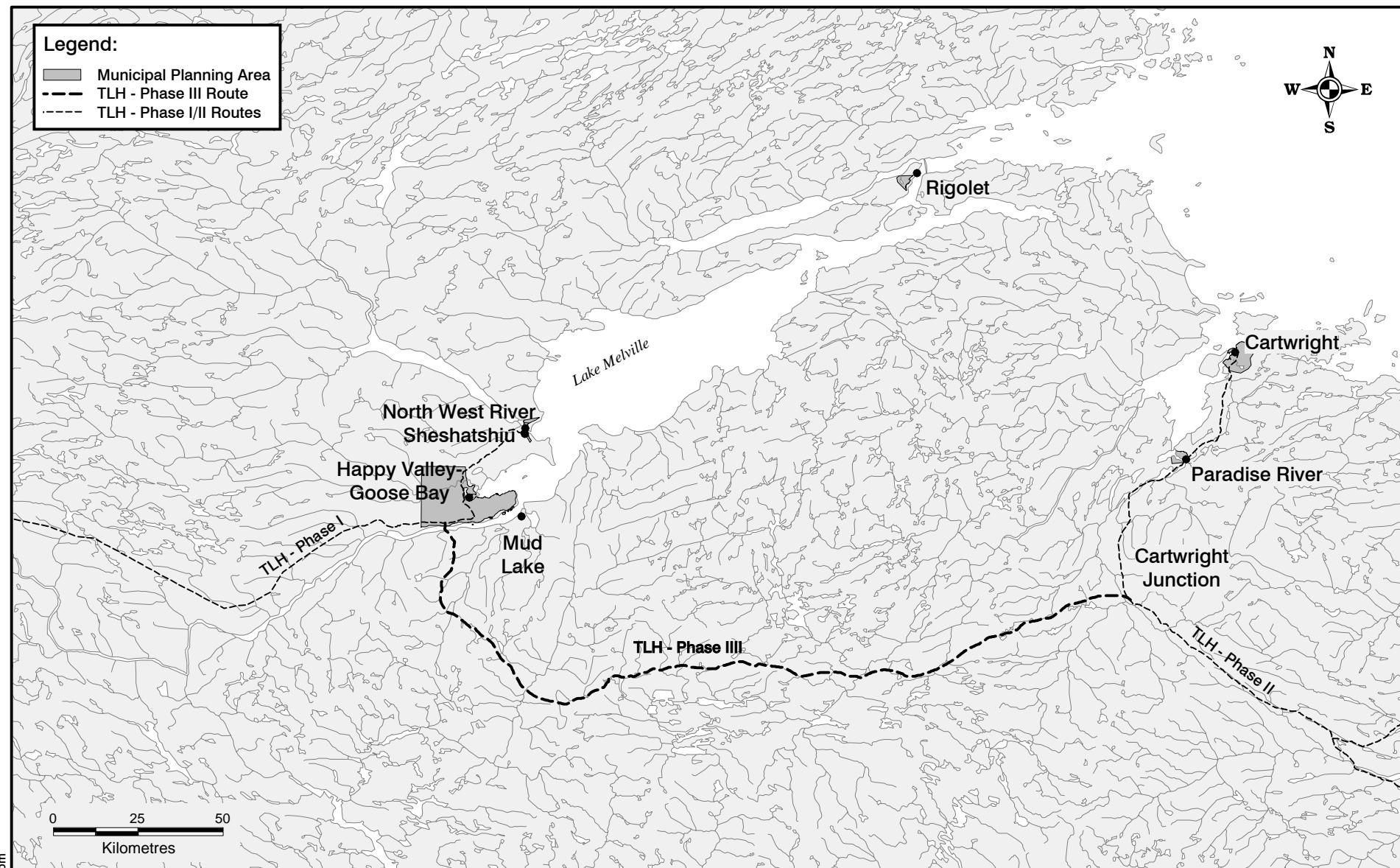


Figure 4.1
Municipal Boundaries

This measure was used to protect lands within the area of the proposed Torngat Mountains National Park, until the part is officially established (Government of Newfoundland and Labrador 2000). The Special Management Area for the Torngat Mountains was established through a MOU between the Government of Newfoundland and Labrador and the Labrador Inuit Association. Under the agreement, commercial and industrial development are prohibited. The Special Management Area is administered by the Department of Tourism, Culture and Recreation.

4.4 Protected Roads

MAPA is also responsible for administering the *Protected Road Zoning Regulations*, pursuant to the *Urban and Rural Planning Act, 2000*. These regulations control development along roadways and access off roadways in the province. A development permit is required for any development within the building control lines established for the protected road. Building control lines for protected roads are 400 m on either side of the road as measured perpendicular from the road centreline, except for the following:

- within the municipal boundary of an incorporated municipality, the building control line is 100 m from the centreline;
- outside the municipal boundary but within the MPA, the building control line is 150 m from the centreline; and
- within an unincorporated municipality, the building control line is 400 m from the centreline or as set by an interim or approved protected road zoning plan.

Protected road zoning plans currently being prepared for the Phase I and II sections of the TLH have the building control line set at 400 m, with 100 m within a municipal boundary and 150 m within a MPA (A. Goulding, pers. comm.).

In areas outside a community, a permit for development within the designated building control lines would be considered for the following:

- signs (which are subject to the requirements of the *Highway Sign Regulations*);
- premises offering services to travelers;
- public institutional or commercial recreational development;
- public utilities;
- waste disposal;
- cemeteries;
- forestry, fishing, agriculture or mining development; and
- purposes arising from the development listed above.

The area within the building control lines of a protected road can be designated as a protected road zoning area and a protected road zoning plan prepared. The purpose of the zoning plan is to plan for the systematic and orderly development and improvement of the protected road zoning area, with an emphasis on public convenience and general welfare, economic use of land, traffic facility improvement, transportation, sewage disposal, water supply, recreational and other public requirements.

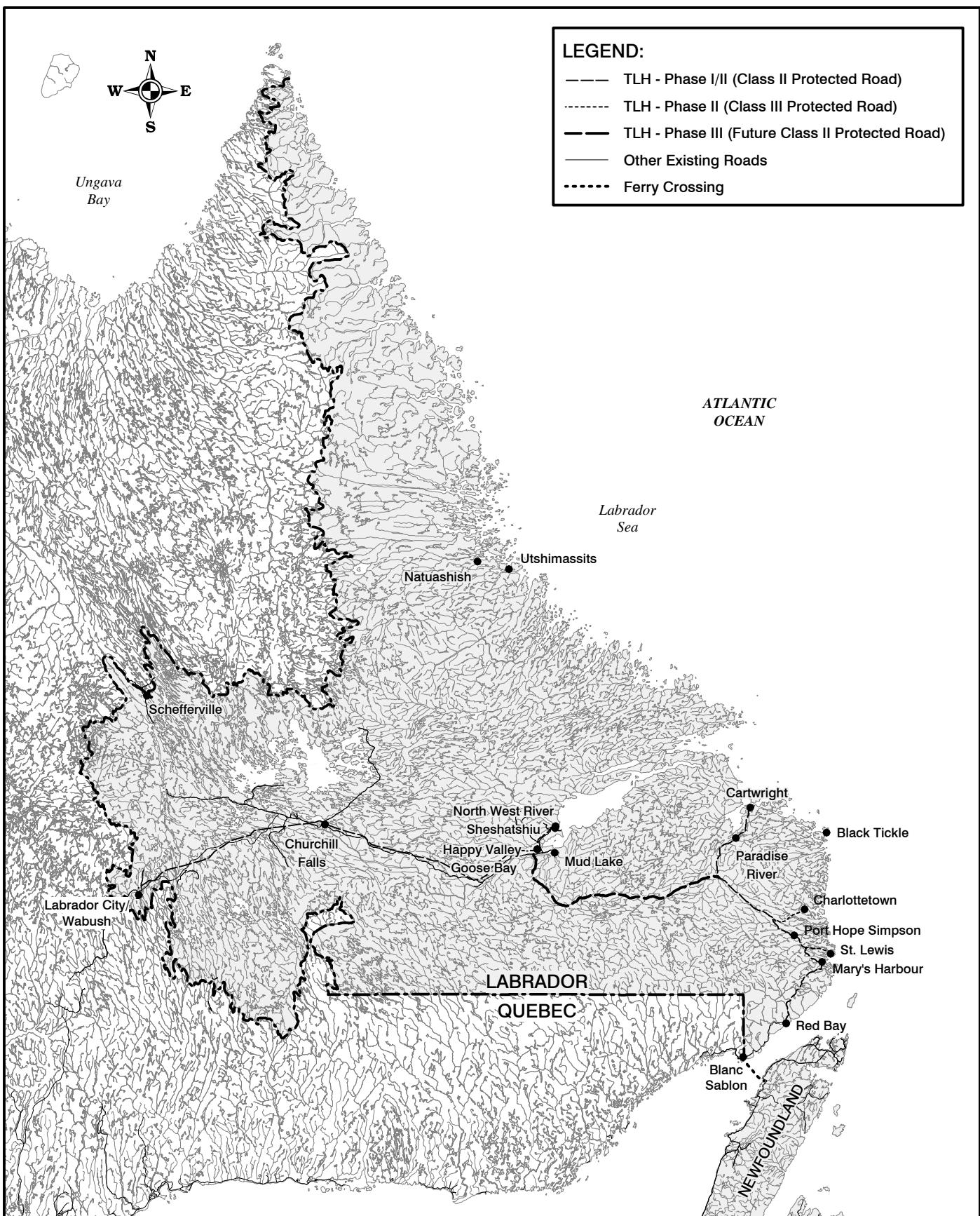


Figure 4.2
Protected Roads in Labrador

Zoning plans identify the type of development permitted and locations where it is permitted along the road corridor. Land use zones may be defined for the area within the building control lines, including urban zones (residential, mixed, highway commercial, buffer and restricted development) and rural zones (rural conservation, rural residential, highway service centre and cottage). Permitted uses, lot dimensions and siting requirements for each of the designated land use zones are outlined in Schedule A of the *Protected Road Zoning Regulations*. Existing land use activity, as well as the suitability of the area for development and factors related to safe and efficient highway use, are considered in the planning process. Future development activity must comply with the land use zones established for the protected area. As with municipal plans, protected road zoning plans are subject to review every five years and plans can be amended.

A permit is required for any development along a protected road and can be obtained from the Government Service Centre of the Department of Government Services and Lands. The development application is reviewed to ensure that it complies with the requirements of the *Protected Road Zoning Regulations* and any protected road zoning plan. All relevant government departments, agencies, officials and persons are consulted about the proposed development. The following factors, as outlined in Section 13(1) of the *Protected Road Zoning Regulations*, are also considered in the review of a development application:

- topography, physical condition, amenity and natural features of the land;
- provision or future provision of services;
- use or the proposed use of the land and the use of the land in the immediate vicinity;
- number, location, convenience and safety of accesses;
- protection of the highway as a safe and convenient traffic way;
- design, location and construction of the proposed development;
- adequacy of the method and the suitability of the land for the water and sewage disposal method that is proposed;
- adequacy and suitability of the methods proposed for the disposal of waste material; and
- shape and size of each lot or parcel of land.

Phase I (Route 500) and Phase II (Route 510) of the TLH are both rated as Class II Protected Roads (Figure 4.2). Route 500 extends from the Québec-Newfoundland and Labrador border to the highway's intersection with Hamilton River Road in Happy Valley-Goose Bay, but does not include the highway section within the MPAs for Labrador City and Wabush. Route 510 extends from the intersection of the highway with the local road in the Town of Red Bay to the airstrip road in Cartwright.

The Charlottetown (Route 514) and St. Lewis (512) access roads constructed in conjunction with Route 510 are both rated as Class III Protected Roads (Figure 4.2). Route 514 extends from Route 510 to the airstrip access road in Charlottetown, while Route 512 extends from Route 510 to the western boundary of the St. Lewis MPA.

4.5 Water Supply Areas

There are no municipal water supplies in the immediate vicinity of the proposed TLH - Phase III route and its right-of-way. The water supply (i.e., a series of deep wells) for Happy Valley-Goose Bay is located approximately 6.5 km west of the town (S. Normore, pers. comm.), making it the closest to the proposed TLH - Phase III route at a distance 2.5 km east of the intersection where the TLH - Phase III will link to the Phase I portion of the highway. The remaining water supplies are located near communities in the area, and are more distant from the proposed highway development.

Designation and protection of water supply areas are the responsibility of the Water Resources Management Division of the provincial Department of Environment. The Water Resources Management Division administers the *Water Resources Act*, which provides for the protection of public water supplies, including groundwater supply, in the province. The act states that an area around a public water supply can be designated as a public water supply area, and that use of the water body and designated protected area may be regulated. The act indicates that:

- material that may impair water quality is not to be placed, deposited, discharged or left in the area;
- activities that may impair water quality, such as fishing, boating and swimming, are not permitted; and
- any use or diversion of water from the designated area that may decrease its role as a public water supply are not allowed.

However, depending on the nature and size of the public water supply area, regulations may be made to permit select activities, such as boating, fishing and swimming, on a portion of a water supply area.

Any existing or proposed development activities within a protected water supply area are subject to the *Policy for Land and Water Related Developments in Protected Public Water Supply Areas*, which is administered by the provincial Water Resources Management Division. The policy identifies activities that are not permitted in protected water supply areas and activities that may be permitted subject to approval by the Minister of Environment. Activities not permitted in protected water supply areas are:

- placing, depositing or discharging sewage, refuse, chemicals, municipal, industrial or other material that would impair or has the potential to impair water quality;
- using an intake pond, lake or buffer area for an activity that is detrimental to water quality and not allowed under the act;
- transporting logs, using motorized vehicles, leading animals or carrying out other activity, that would impair or has the potential to impair water quality, on the ice-covered surface of a protected water supply;
- using or operating existing facilities in a way that impairs or has the potential to impair water quality;
- residential development of four or more lots, vehicle maintenance facilities and service stations, warehouses, industries, storage facilities for chemicals and salt, resorts, hotels/motels and golf courses;
- agricultural activities, including storing and disposing of pesticides and manure, applying manure and chemicals in buffer zones, clearing large areas of land and draining peatland;

- forestry activities, including clear cutting in sensitive areas, establishing camps and facilities, storing chemicals, applying pesticides and toxic fire retardants, and draining peatland for afforestation;
- mineral exploration and aggregation extraction activities, operations and facilities;
- applying herbicides, and using chemically treated utility poles and related structures;
- aquaculture development and associated activities;
- manufacturing and processing plants with potential to impair water quality; and
- cemeteries, waste disposal facilities and any other facilities considered environmentally unacceptable.

Activities that are regulated and may be permitted in a designated water supply area, subject to approval from the Minister of Environment, include:

- expanding and upgrading existing operations, activities and facilities;
- constructing residential, commercial, industrial and institutional facilities, including related activity;
- developing farmland for crops, forage, vegetable, blueberry and other fruit production;
- forestry activities, including constructing and using resource roads, stream crossings, preparing skid trails and landing areas, silvicultural and tree farming;
- recreational activities and facilities, including cottage development, fishing, swimming, boating, hiking, camp grounds, canoe routes, and vacation or other camps;
- activities related to mining and quarrying operations, including access roads, stream crossings, land drainage with treatment, land clearing and excavation;
- installing pipelines for storm or sanitary sewers, water transmission, hydroelectric generation, agriculture uses and other purposes;
- constructing bridges, culverts, other stream crossings, and power and telecommunication transmission lines;
- modifying structures associated with the water supply system; and
- any other activity that may impair water quality.

Detailed development plans for any proposed development in a public water supply area must be submitted to the Department of Environment for approval. A certificate of approval, with terms and conditions, is issued for approved developments. Buffer zones are to be maintained around designated water supply areas, including from the high water mark to minimum widths of:

- 150 m from an intake pond or lake;
- 150 m for a distance of 1 km up stream and 100 m downstream from a river intake;
- 75 m from a main river channel;
- 50 m from major tributaries, lakes or ponds; and
- 30 m from other water bodies.

Quality of domestic water supplies has been a key concern for communities throughout Newfoundland and Labrador. Water supplies are routinely monitored by the provincial government. Boil water advisories are issued for water supplies in the province should problems be detected with the water supply, distribution system or treatment system. As of December 10, 2002, boil water advisories were in effect for public water supplies in Cartwright (coliforms detected in repeat samples), Black Tickle-Domino (no chlorination due to power outage), William's Harbour (lack of chlorination), Mary's Harbour (unsatisfactory bacteriological results) and Port Hope Simpson (inadequate chlorination) (WRMD 2002).

5.0 WATERWAY USE

There are 95 identified watercourse crossings along the route of the proposed TLH - Phase III from Happy Valley-Goose Bay to Cartwright Junction (Figure 1.2). These crossings were reviewed for their potential navigability, using information gathered from aerial and ground surveys of the crossings and interviews with local authorities. This chapter summarizes the potential for navigability of the watercourse crossings on the basis of the five watersheds in which the watercourses are located. The watersheds are the Churchill River, Traverspine River, Kenamu River, Eagle River and Paradise River.

5.1 Regulatory Framework

Matters related to navigation on both inland and marine water bodies are the responsibility of DFO's Navigable Waters Protection Program. The purpose of the Navigable Waters Protection Program is to protect the protect navigable waterways ensuring unobstructed passage for vessels. The *Navigable Waters Protection Act* governs construction works within navigable waters and outlines provisions for dealing with obstacles and obstructions to navigable waterways. Notices to mariners are to be made with respect to obstacles and obstructions. The *Navigable Waters Works Regulations* outline requirements respecting works carried out in navigable waters. The TLH - Phase III is subject to the *Navigable Waters Protection Act* as approvals under the act are required for the project. Any other users proposing development on or using waterways are subject to the act and regulations.

5.2 Churchill River Watershed

The TLH - Phase III route will cross 12 watercourses within the Churchill River watershed. Survey information associated with navigability of these watercourses is summarized in Table 5.1. Representative photographs are included in Appendix C.

Of the 12 stream crossings within the Churchill River watershed, the 11 tributaries to the Churchill River are totally obstructed due to small size, dense riparian vegetation or depth (Table 5.1). The Churchill River is somewhat obstructed by sand bars, but due to relatively deep channels, can be navigated by motorized boats.

The Churchill River in the vicinity of the proposed crossing location at Black Rocks is regularly used as a navigation route. From May to November, canoes and motorized boats (up to 6.7 m (i.e., 22 ft) in length) with large outboard motors are commonly used in the area (K. Colbourne, pers. comm.; W. Mclean, pers. comm.). Use typically occurs from the mouth to Muskrat Falls and activities in this area include sightseeing, fishing and recreational boating, with some hunting occurring in the fall. From January to April, snowmobiles use the river and surrounding area. Activities include trapping, hunting, firewood cutting and general recreational snowmobiling (K. Deering, pers. comm.; B. Duffett, pers. comm.; W. Mclean, pers. comm.; F. Phillips, pers. comm.). The use of the area for trapping has decreased from that in the past, while recreational activities in the area have reportedly increased, especially summer activities (K. Colbourne, pers. comm.; W. Mclean, pers. comm.).

Table 5.1 Watercourse Crossings on the Churchill River and Tributaries

Stream Crossing No.	Water Depth (m)	Approximate Width (m)	Obstruction Type	Obstruction Description
* 1*	>2	>20	U	None.
2	n/a	<2	T	Small size, overhanging vegetation.
3	n/a	<2	T	Small size, overhanging vegetation.
4	<1	<2	T	Small size, overhanging vegetation.
5	n/a	n/a	T	Small size, overhanging vegetation.
6	<1	<2	T	Small size, overhanging vegetation.
7	<1	<2	T	Small size, overhanging vegetation.
8	<0.5	2 to 5	T	Small size, overhanging vegetation.
9	<0.5	<2	T	Small size, shallow.
10	n/a	<2	T	Small size, overhanging vegetation.
11	<1	<2	T	Small size, overhanging vegetation.
12	<1	<2	T	Small size, overhanging vegetation.

1. Crossing locations are shown on Figure 1.2.
2. *1* indicates the main stem of the Churchill River.
3. U - Unobstructed (i.e., river section near crossing location can be navigated by motorized boat).
4. P - Partially obstructed (i.e., river section near crossing location not navigable by motorized boat, but navigation possible by non-motorized boat).
5. T - Totally obstructed (i.e., river section near crossing location unlikely to be navigable).
Source: JW/IELP 2003.

5.3 Traverspine River Watershed

The TLH - Phase III route will cross 15 watercourses within the Traverspine River watershed. Survey information associated with navigability of these watercourses is summarized in Table 5.2. Representative photographs are included in Appendix C. Of the 15 watercourse crossings within the Traverspine River watershed, 11 are totally obstructed, at or near the proposed crossing location (Table 5.2).

Use of the Traverspine River watershed is currently concentrated near the mouth of the Traverspine River, where it enters the Churchill River. The most common activities include fishing (summer and winter) and trapping (K. Deering, pers. comm.; B. Duffett, pers. comm.; W. Mclean, pers. comm.; F. Phillips, pers. comm.). Motorized boats can be used to travel the river to a point approximately 3 km upstream from the mouth, where the increasing prevalence of rapids and shallow water limit movement beyond this point (K. Deering, pers. comm.; F. Phillips, pers. comm.; B. Duffett, pers. comm.). Increasing rapids also restrict canoe travel to any substantial distance beyond this point. Snowmobile use is also mainly limited to the lower sections of river.

Table 5.2 Watercourse Crossings on the Traverspine River and Tributaries

Stream Crossing No.	Water Depth (m)	Approx. Width (m)	Obstruction Type	Obstruction Description
13	<1	2 to 5	T	Shallow, overhanging vegetation.
14	<1	2 to 5	P	Shallow sections.
15	<1	5 to 20	P	Chutes/rapids, shallow sections.
16	<1	5 to 20	P	Chutes/rapids, shallow sections.
17	n/a	<2	T	Small size, overhanging vegetation.
18	n/a	<2	T	Small size, overhanging vegetation.
19	n/a	<2	T	Small size, overhanging vegetation.
20	<1	2 to 5	T	Small size, overhanging vegetation.
21	n/a	<2	T	Small size, overhanging vegetation.
22	<1	>20	P	Chutes/rapids.
* 23 *	<1	2 to 5	T	Falls below crossing.
24	<1	2 to 5	T	Falls below crossing.
25	n/a	<2	T	Small size, overhanging vegetation.
26	n/a	<2	T	Small size, overhanging vegetation.
27	n/a	<2	T	Small size, overhanging vegetation.

1. Crossing locations are shown on Figure 1.2.
2. *23* indicates the main stem of the Traverspine River.
3. U - Unobstructed (i.e., river section near crossing location can be navigated by motorized boat).
4. P - Partially obstructed (i.e., river section near crossing location not navigable by motorized boat, but navigation possible by non-motorized boat).
5. T - Totally obstructed (i.e., river section near crossing location unlikely to be navigable).
Source: JW/IELP 2003.

Watercourse crossings within the Traverspine River watershed currently receive very little use due to its limited accessibility. Summer use is limited to the occasional fly-in fishermen, while winter use is limited to the occasional trapper. Reportedly, there are two trappers who are currently trapping in the vicinity of the proposed crossing location on the Traverspine River (No. 23) (K. Deering, pers. comm.; B. Duffett, pers. comm.; F. Phillips, pers. comm.). The area is accessible by snowmobile by following an overland route from the Churchill River. Therefore, the Traverspine River and many of its smaller tributaries are avoided in favor of the overland route (K. Deering, pers. comm.; B. Duffett, pers. comm.; F. Phillips, pers. comm.).

5.4 Kenamu River Watershed

The TLH - Phase III route will cross 15 watercourses within the Kenamu River watershed. Survey information associated with navigability of these watercourses is summarized in Table 5.3. Representative photographs are included in Appendix C.

Table 5.3 Watercourse Crossings on the Kenamu River and Tributaries

Stream Crossing No.	Water Depth (m)	Approximate Width (m)	Obstruction Type	Obstruction Description
28	<1	5 to 20	P	Shallow sections.
29	n/a	<2	T	Small size, overhanging vegetation.
30	<1	5 to 20	U	Unobstructed.
31	n/a	<2	T	Small size, overhanging vegetation.
32	n/a	<2	T	Small size, overhanging vegetation.
33	<1	<2	T	Small size, overhanging vegetation.
34	<1	<2	T	Small size, overhanging vegetation.
35	-	no visible stream	-	-
* 36 *	<1	>20	U	Unobstructed.
37	<1	<2	T	Small size, overhanging vegetation.
38	<1	5 to 20	P	Chutes, white water.
39	n/a	<2	T	Small size, overhanging vegetation.
40	<1	2 to 5	P	Windfalls.
41	<1	2 to 5	P	Small size, overhanging vegetation.
42	<1	2 to 5	P	Shallow, small size upstream.

1. Crossing locations are shown on Figure 1.2.
2. *36* indicates the main stem of the Kenamu River.
3. U - Unobstructed (i.e., river section near crossing location can be navigated by motorized boat).
4. P - Partially obstructed (i.e., river section near crossing location not navigable by motorized boat, but navigation possible by non-motorized boat).
5. T - Totally obstructed (i.e., river section near crossing location unlikely to be navigable).
Source: JW/IELP 2003.

Of the 15 watercourse crossings within the Kenamu River watershed, seven are totally obstructed due to small size and dense riparian vegetation (Table 5.3). Of the remaining eight watercourses, two are unobstructed (No. 30 and 36) and the other six watercourses are partially obstructed at or near the crossing location.

Use of the Kenamu River watershed is currently concentrated near the mouth of the Kenamu River, where it enters Lake Melville. The most common activities include fishing (summer and winter), trapping and some moose hunting. The shallowness of the river in the lower sections makes access by larger boats (5 to 6 m (i.e., 16 to 20 ft)) difficult. The access from this type of craft is mostly limited to the first few kilometres of the river (K. Colbourne, pers. comm.; W. Mclean, pers. comm.). Although not a common activity, individuals have been known to travel the entire river by canoe, after being transported to the headwaters (K. Deering, pers. comm.; B. Duffett, pers. comm.; F. Phillips, pers. comm.). Snowmobile activity in the area is mainly limited to the lower sections of the river for the purposes of trapping and; to a lesser degree, ice fishing.

Watercourse crossing locations within the Kenamu River watershed currently receive very little use due to its limited accessibility. Some fishing takes place in the upper portion of the watershed area in summer, but is limited to the occasional fly-in fishermen. Winter usage of the area is limited to three to four trappers, who would not travel much further east than Crossing No. 40 (W. Mclean, pers. comm.).

5.5 Eagle River Watershed

The TLH - Phase III route will cross 40 watercourses within the Eagle River watershed. Survey information associated with navigability of these watercourses is summarized in Table 5.4. Representative photographs are included in Appendix C.

Table 5.4 Watercourse Crossings on the Eagle River and Tributaries

Stream Crossing No.	Water Depth (m)	Approximate Width (m)	Obstruction Type	Obstruction Description
43	n/a	<2	T	Intermittent.
44	n/a	Pond	T	Intermittent.
45	<1	>20	U	None.
46	<1	2 to 5	U	None.
47	n/a	<2	T	Small size, overhanging vegetation.
48	<1	2 to 5	P	In stream boulder.
49	<1	<2	T	Small size, overhanging vegetation.
50	<1	<2	T	Small size, overhanging vegetation.
51	<1	2 to 5	P	In stream boulder.
52	<1	5 to 20	P	Cascade/rapids.
53	<1	<2	T	Small size, overhanging vegetation.
54	-	no visible stream	-	-
55	<1	5 to 20	P	In stream boulder.
56	<1	<2	T	Small size, overhanging vegetation.
57	-	no visible stream	-	-
58	<1	<2	T	Small size, overhanging vegetation.
59	<1	<2	T	Small size, overhanging vegetation.
60	<1	<2	T	Small size, overhanging vegetation.
61	<1	2 to 5	P	Shallow sections.
62	<1	<2	T	Small size, overhanging vegetation.
63	<1	<2	T	Small size, overhanging vegetation.
64	<1	<2	T	Small size, overhanging vegetation.
65	<1	2 to 5	P	Small size, shallow.
66	<1	<2	T	Small size, overhanging vegetation.
67	<1	2 to 5	P	Shallow sections.
68	<1	<2	T	Small size, overhanging vegetation.
69	<1	<2	T	Small size, overhanging vegetation.
70	<1	<2	P	Small size.
71	<1	2 to 5	U	None.
72	<1	<2	P	Small size, overhanging vegetation.
* 73 *	>2	90	U	None.
74	n/a	<2	T	Small size, overhanging vegetation.

Stream Crossing No.	Water Depth (m)	Approximate Width (m)	Obstruction Type	Obstruction Description
75	<1	<2	T	Small size, overhanging vegetation.
76	<1	<2	P	Small size.
77	<1	>20	U	None.
78	<1	<2	T	Small size, overhanging vegetation.
79	>2	40	P	In stream boulder.
80	<1	<2	T	Small size, overhanging vegetation.
81	<1	<2	T	Small size, overhanging vegetation.
82	<2	2 to 5	P	Instream boulder.
1. Crossing locations are shown on Figure 1.2. 2. *73* indicates the main stem of the Eagle River. 3. U - Unobstructed (i.e., river section near crossing location can be navigated by motorized boat). 4. P - Partially obstructed (i.e., river section near crossing location not navigable by motorized boat, but navigation possible by non-motorized boat). 5. T - Totally obstructed (i.e., river section near crossing location unlikely to be navigable).				
Source: JW/IELP 2003.				

Of the 40 watercourse crossings within the Eagle River watershed, 21 are totally obstructed due to small size, dense riparian vegetation or intermittent nature of the streams (Table 5.4). In two instances, no identifiable stream could be located at the given coordinates. Of the remaining 17 watercourses, five are unobstructed (No. 45, 46, 70, 73 and 77) and the other 12 watercourses are partially obstructed at or near the crossing location.

Current use of the Eagle River watershed area in the vicinity of the watercourse crossings includes recreational angling and trapping. Recreational angling is predominantly a summer activity that is associated with the well-established outfitting industry in the area. Anglers are typically non-resident guests, who access the area by aircraft. Trapping occurs in the winter and is particularly concentrated in the Park Lake and Crooks Lake areas. Trappers access the area by snowmobile and are typically from the Cartwright area (G. Bird, pers. comm.; W. Mclean, pers. comm.). The abundant waterways and wetlands in this area provide a relatively unlimited number of access routes to potential fishing and trapping areas in the winter time.

5.6 Paradise River Watershed

The TLH - Phase III route will cross 13 watercourses within the Paradise River watershed. Survey information associated with navigability of these watercourses is summarized in Table 5.5. Representative photographs are included in Appendix C.

Table 5.5 Watercourse Crossings on the Paradise River and Tributaries

Stream Crossing No.	Water Depth (m)	Approximate Width (m)	Obstruction Type	Obstruction Description
83	<1	2 to 5	U	None.
84	<1	2 to 5	T	Small size upstream.
85	-	no stream visible	-	-
86	<1	5 to 20	U	None.
87	<1	<2	P	Small size.
88	<1	2 to 5	P	Shallow sections.
89	<1	2 to 5	T	Shallow, upstream.
90	<1	<2	T	Small size, overhanging vegetation.
91	<1	5 to 20	P	Shallow sections.
92	<1	<2	T	Small size, intermittent.
93	<1	2 to 5	P	Small size upstream.
* 94 *	>2	50	U	None.
95	<1	<2	T	Small size, overhang.

1. Crossing locations are shown on Figure 1.2.
2. *94* indicates the main stem of the Paradise River.
3. U - Unobstructed (i.e., river section near crossing location can be navigated by motorized boat).
4. P - Partially obstructed (i.e., river section near crossing location not navigable by motorized boat, but navigation possible by non-motorized boat).
5. T - Totally obstructed (i.e., river section near crossing location unlikely to be navigable).
Source: JW/IELP 2003.

Of the 13 watercourse crossings within the Paradise River watershed, five are totally obstructed due to small size, shallowness, dense riparian vegetation or intermittent nature of the streams (Table 5.5.). Of the remaining eight watercourses, three are unobstructed (No. 83, 86 and 94) and the other five watercourses are partially obstructed at or near the crossing location.

Use of the Paradise River watershed is currently concentrated from the river mouth (where the river enters Sandwich Bay) to a rough-water section located approximately 30 km upstream. This section of the river is often used by motorized crafts up to 6 m (i.e., 20 ft) in length (G. Bird, pers. comm.; H. Martin, pers. comm.). Common activities in this section of the river include trapping, hunting and fishing.

Current use of the upper portion of the Paradise River watershed in the vicinity of the watercourse crossings is mainly limited to trapping activities. Trappers use this area mainly by snowmobile in the winter and to a lesser degree by canoe in the fall. A small amount of "fly-in" fishing also occurs in the area (G. Bird, pers. comm.; H. Martin, pers. comm.).

6.0 HUNTING AND TRAPPING

Hunting and trapping of wildlife resources have played a key role in both historical and contemporary land use in Labrador. Various Aboriginal groups, dating back to 8,000 BP, relied on the wildlife resources throughout the region for food, clothing and shelter, and later for trading with the French and English fur traders. The emergence of the fur trade in the late 16th century was the beginning of commercial wildlife harvesting in the area. Labrador residents continue to make use of wildlife resources for subsistence, as well as for commercial purposes.

6.1 Regulatory Framework

Big game and small game hunting, as well as trapping, in Labrador are regulated under the *Wildlife Act* and associated regulations, including the *Wildlife Regulations* and a series of hunting and trapping orders. These species-specific orders are issued annually and identify the seasons and bag limits for the species.

The Inland Fish and Wildlife Division of the Department of Tourism, Culture and Recreation is the provincial government division responsible for managing wildlife in Newfoundland and Labrador. The division manages wildlife resources, sets quotas for hunting and issues trapping licenses. Migratory bird hunting is managed by the Canadian Wildlife Service under the *Migratory Birds Convention Act*, of which the United States is also a signatory. All hunting is prohibited in provincial and national parks.

The Forest Resources Division of the Department of Forest Resources and Agrifoods is responsible for enforcing the provincial *Wildlife Regulations*. The regional office for Labrador is in Happy Valley-Goose Bay and district offices are located in North West River, Cartwright, Port Hope Simpson and Red Bay. Conservation officers based at these locations serve Central and Southern Labrador. There are also district offices in Churchill Falls and Wabush.

This chapter provides an overview of hunting and trapping activity in Central and Southern Labrador. Currently, moose, caribou, black bear, a variety of small game, migratory birds and seabirds are hunted or trapped in Central and Southern Labrador.

6.2 Hunting

6.2.1 Moose

Twelve moose from Newfoundland were introduced into the St. Lewis Sound region of the study area in 1953. The Labrador population of this species developed from that introduction and are currently distributed over much of Labrador.

Moose densities are low in Labrador, ranging from 0.013 to 0.168/km² in Southern Labrador (Chubbs and Schaefer 1997). It appears that the potential for an increase in the moose population in Labrador is limited, possibly due to illegal harvests, wolf predation, marginal habitat or some combination of these factors (Chubbs and Schaefer 1997; Trimper et al. 1996). Low productivity rates further imply that continued growth of the moose population in Labrador is likely limited (Chubbs and Schaefer 1997). During the critical winter period, moose tend to concentrate in river valleys or other areas of forest habitat, where

browse is available and lower relative snow depths are less likely to restrict movement. Forested valleys in the study area may represent important wintering habitat for moose.

Established moose management areas (MMA) are located at the western and eastern portions of the proposed TLH - Phase III (Figure 6.1). MMA 57 is located on the eastern portion of the proposed highway, in the vicinity of Paradise River. MMAs 53 and 53A are centred around the Muskrat Falls area, on the western end of the proposed highway. The area directly south of Lake Melville (between MMA 53A and MMA 57) is not zoned for moose hunting.

For the 2002-2003 season, the hunting period varies, with MMAs 53 and 57 being open from September 14, 2002 to January 4, 2003 and MMA 53A open from September 14, 2002 to March 15, 2003. Quotas for the 2002-2003 season are 25 moose (10 either sex and 15 male or calf only) in MMA 53 and five moose in each of MMA 53A (five either sex) and MMA 57 (five male or calf only). Quotas for 2002-2003 remain unchanged from the 2001-2002 hunting season. Five licenses per year have been issued for MMA 57 since 1990. In 1996, the quota of licenses for MMA 53 increased from 10 to 25, and has been maintained at that level. MMA 53A has only been open since 1996, and five licenses per year have been issued since that time (W. Barney, pers. comm.).

A draw for resident moose licenses is conducted by the Inland Fish and Wildlife Division on an annual basis. In 2001, 355 moose licence applications were submitted for MMA 53, 178 applications for MMA 53A and 53 applications for MMA 57. No non-resident moose licenses are available in Labrador (W. Barney, pers. comm.).

Due to low moose densities and the small number of licenses issued, poaching is not considered a factor when determining quotas (W. Barney, pers. comm.). No special harvesting provisions are in place for Aboriginal persons. Moose have not been traditionally harvested by Aboriginal peoples and do not appear to be of primary importance as a resource (W. Barney, pers. comm.).

Most moose hunting within MMA 57 occurs along the Paradise River valley, as this is where moose numbers are highest in the area. No information is available on specific areas within MMAs 53 and 53A where hunting may be occurring. Hunter success rates for moose in Labrador are not available (W. Barney, pers. comm.).

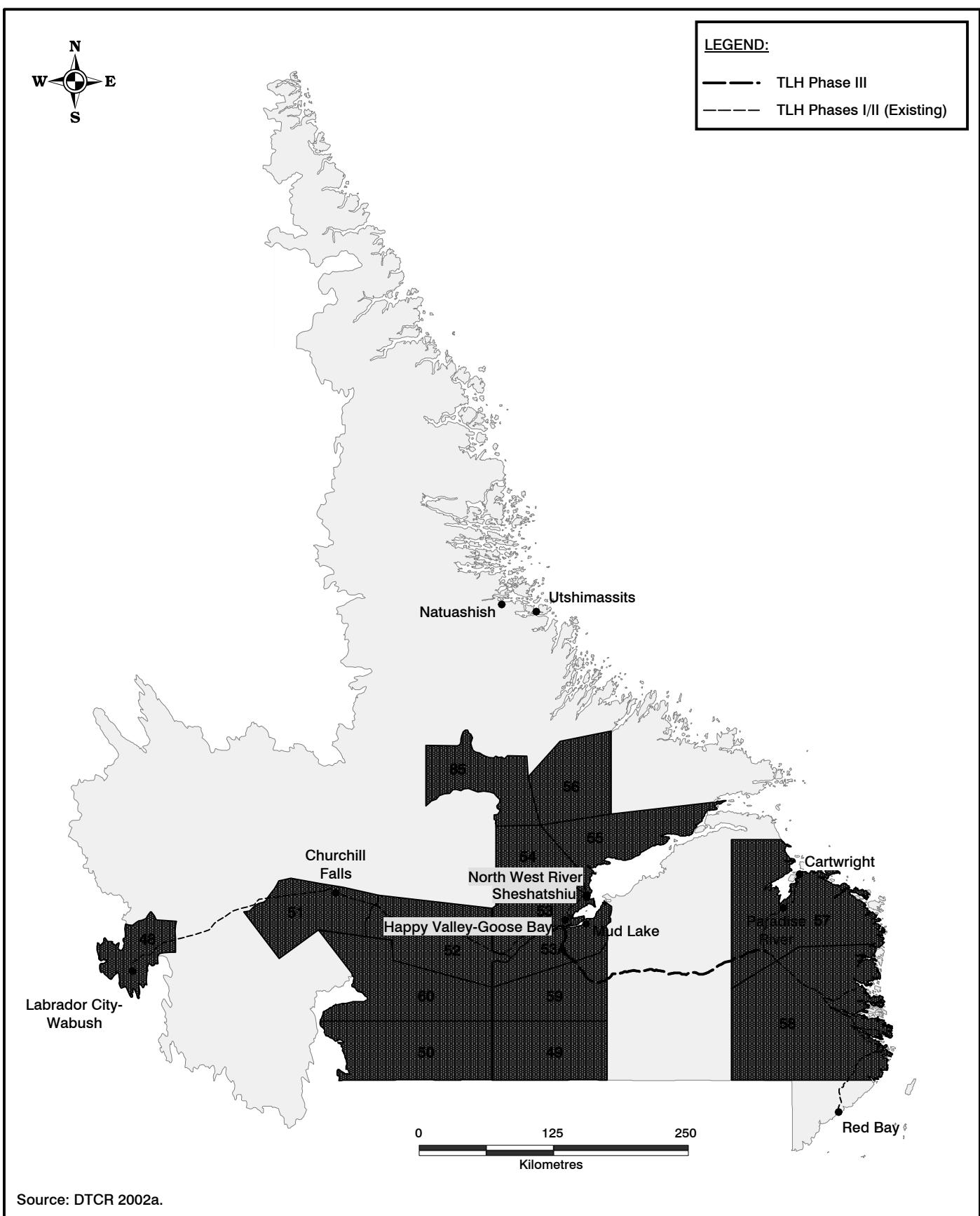


Figure 6.1
**Moose Management Areas
in Labrador**

6.2.2 Caribou

Caribou numbers are generally low in southern Labrador. The most recent population estimate for the Mealy Mountains Caribou Herd (MMCH) is 2,585 animals ($\pm 1,596$) (Otto 2002), with a range extending south from Lake Melville east from the Kenamu River headwater to the Labrador coast. The range of the neighboring Red Wine Caribou Herd is centred around the Red Wine Mountains to the west of Lake Melville. This herd is estimated to number less than 200 animals (Schaefer et al. 1999). Both of these herds are woodland caribou, which have recently been designated as threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Caribou management zones in Labrador have been designed to avoid any hunting activity in areas where woodland caribou are present. Therefore, there are no caribou management zones south of Lake Melville or in the vicinity of the proposed TLH - Phase III route. Due to the current COSEWIC status of woodland caribou, it is unlikely that any caribou management zones will be established south of Lake Melville.

There was legal hunting of the MMCH until the early 1980s. However, there are no records available on the hunting activity that occurred. Currently, the only legally hunted caribou herds in Labrador are the barren-ground George River (approximately 450,000 animals) and Torngat Mountains (approximately 5,000 animals) herds. The hunting season from Seal Lake north to Cape Chidley (the George River Zone and the Torngat Mountains Zone) (Figure 6.2) runs from August 10 to April 30. Both George River and Torngat Mountain herd animals may be harvested during this period. South of the George River Zone and north of Lake Melville, there are a series of zones which are only opened as George River caribou migrate through them (Figure 6.2). When one of these zones are opened, a minimum of three days notice is given before closure. For example, in the late fall and early winter of 2002, the western Labrador hunting zones were opened when large numbers of George River caribou migrated through the area.

Resident caribou licenses may be purchased from the Government Services Centre or vendor outlets (e.g., sporting goods, hardware and general stores). All residents of Labrador are entitled to harvest two caribou of either sex per year. A special caribou license is available to residents of the Torngat Mountain Electoral District for hunting within that electoral district. Information on the number of special licences issued is not available. Licenses for non-residents are available only through licensed outfitters, and registered guides must accompany all non-resident hunters.

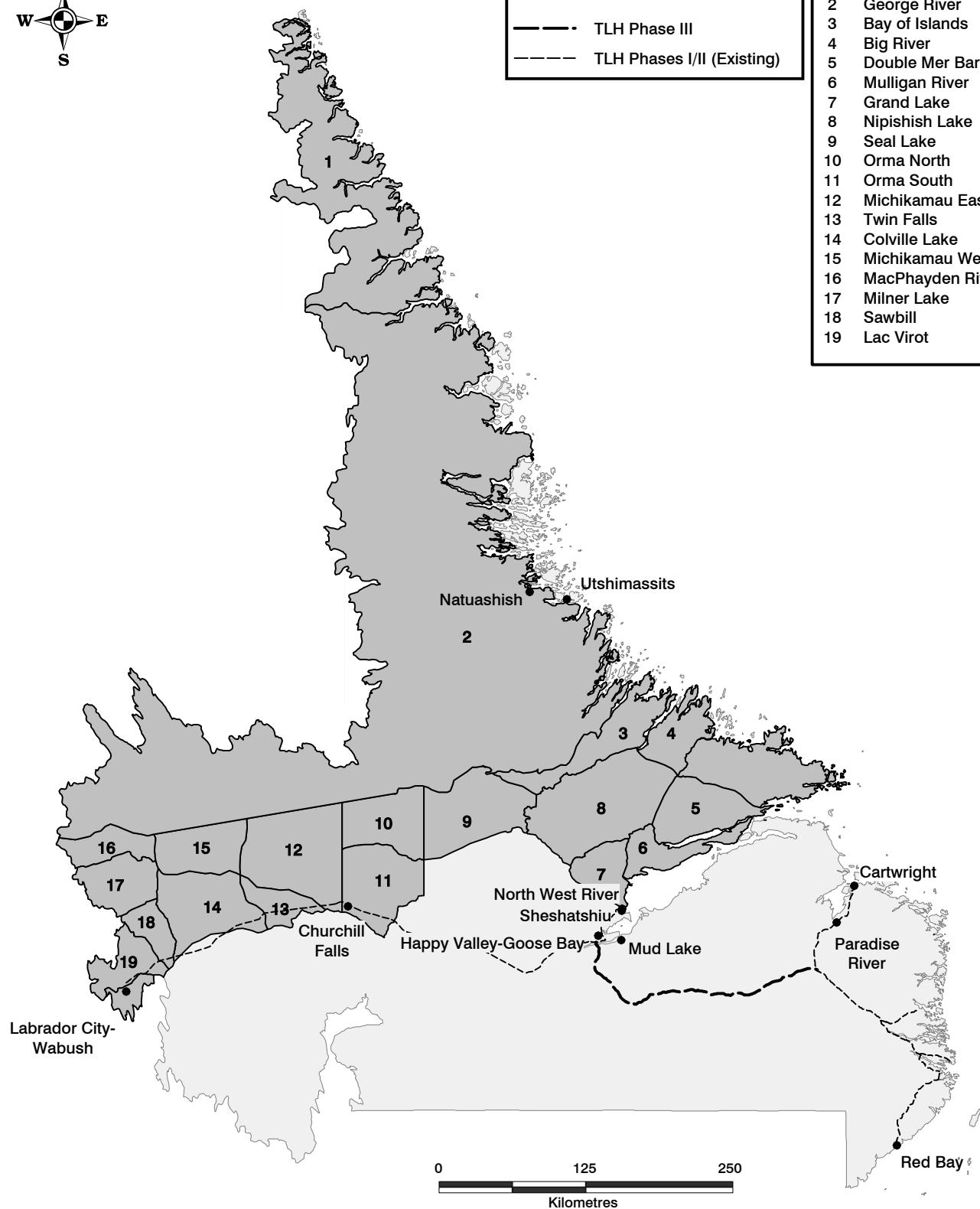
From 1997 to 2001, an average of 2,300 resident caribou licences were sold annually. In 1992 to 1993, approximately 5,000 resident licenses were sold, the highest number for any year (W. Barney, pers. comm.). For the same period, an average of 500 non-resident caribou licenses were sold annually, with a high of 800 recorded in 1994 to 1995 (W. Barney, pers. comm.). Data on hunter success rates for caribou in Labrador are not available. As well, records are not kept on the number of caribou harvested by Aboriginal persons.

There are three commercial caribou operations licensed in Labrador: Uncle Sam's Butcher Shop (Happy Valley-Goose Bay); Alonso Drover (Labrador City); and the Labrador Inuit Association (LIA), which has been inactive in recent years. All commercial operations require a Commercial Caribou Licence that is renewed annually. Hunting for commercial purposes must occur away from the main areas of resident hunting activity. There are no limits on the number of hunters that can participate in a commercial harvest; However, the number of the number of caribou that can be killed per day per hunter is limited to 10 (W. Barney, pers. comm.).



LEGEND:

- TLH Phase III
- - - TLH Phases I/II (Existing)



Source: DTCR 2002a.



Figure 6.2
**Caribou Management Zones
in Labrador**

Approximately 550 caribou have been taken in the commercial harvest over the past few years (W. Barney, pers. comm.). Overall, the commercial harvest is increasing since the first license was issued to the LIA in 1985. However, there does not appear to be any interest in commercial harvesting by parties other than the existing three operators. The economic value of commercial activities is not known. Holders of a commercial caribou license must provide jawbones of all animals harvested to the Inland Fish and Wildlife Division. The location of the harvest, the number of animals harvested and the general weights of harvested animals must also be supplied the Inland Fish and Wildlife Division by the license holder (W. Barney, pers. comm.).

6.2.3 Black Bear

Black bears are found throughout the Québec-Labrador peninsula, occupying a variety of habitats, including barrens, forests, coastal islands and sea ice (JW 1999). Individuals are generally wide-ranging as they search for food. Black bears are omnivorous and hibernate during the winter months.

There are three black bear management areas in Labrador (Figure 6.3). The Labrador South Management Area covers all of Central and Southern Labrador, including the area of the proposed TLH - Phase III. To the north, is the George River Management Area and the Torngat Mountains Management Area. In all three management areas, there is a spring and fall bear hunting season. The spring season for all areas occurs between April 1 and July 13. The fall season in the two northern management areas occurs from August 10 to November 30. In the Labrador South Management Area, the fall season is from September 1 to November 30.

Resident hunting licenses may be purchased through the Government Service Centre or vendor outlets. Similar to caribou, non-resident hunters must purchase bear hunting licenses through licensed outfitters and must be accompanied by registered guides for the hunt. Both resident and non-resident hunters are limited to two bears of either sex per license. Female bears accompanied by cubs may not be taken. Prior to the 2000-2001 season, a bear license holder could harvest five bears. This was changed, in part, because of overall low black bear harvests (i.e., the five bear quota was generally never filled by license holders), and to bring harvesting limits in line with overall conservation objectives. Non-resident hunters have always been restricted to two bears per license. There are no special provisions for hunting by Aboriginal people; they are required to obtain a resident hunting license.

From 1997 to 2001, resident black bear license sales averaged 47 annually and non-resident sales averaged 43 annually. Historical harvesting data and hunter success rates for black bear in Labrador are not available (W. Barney, pers. comm.).

The incidences of nuisance black bears in communities along the coast have increased by approximately 80 percent in the last decade, and more black bears are probably destroyed than are harvested (H. Martin, pers. comm.). There is no access to inland areas except in winter; therefore, hunting for black bear only occurs around communities. Two reasons that the harvest of black bears is low are they are no longer eaten, because of their habits of foraging in local dumps, and pelts do not have a high value (H. Martin, pers. comm.).

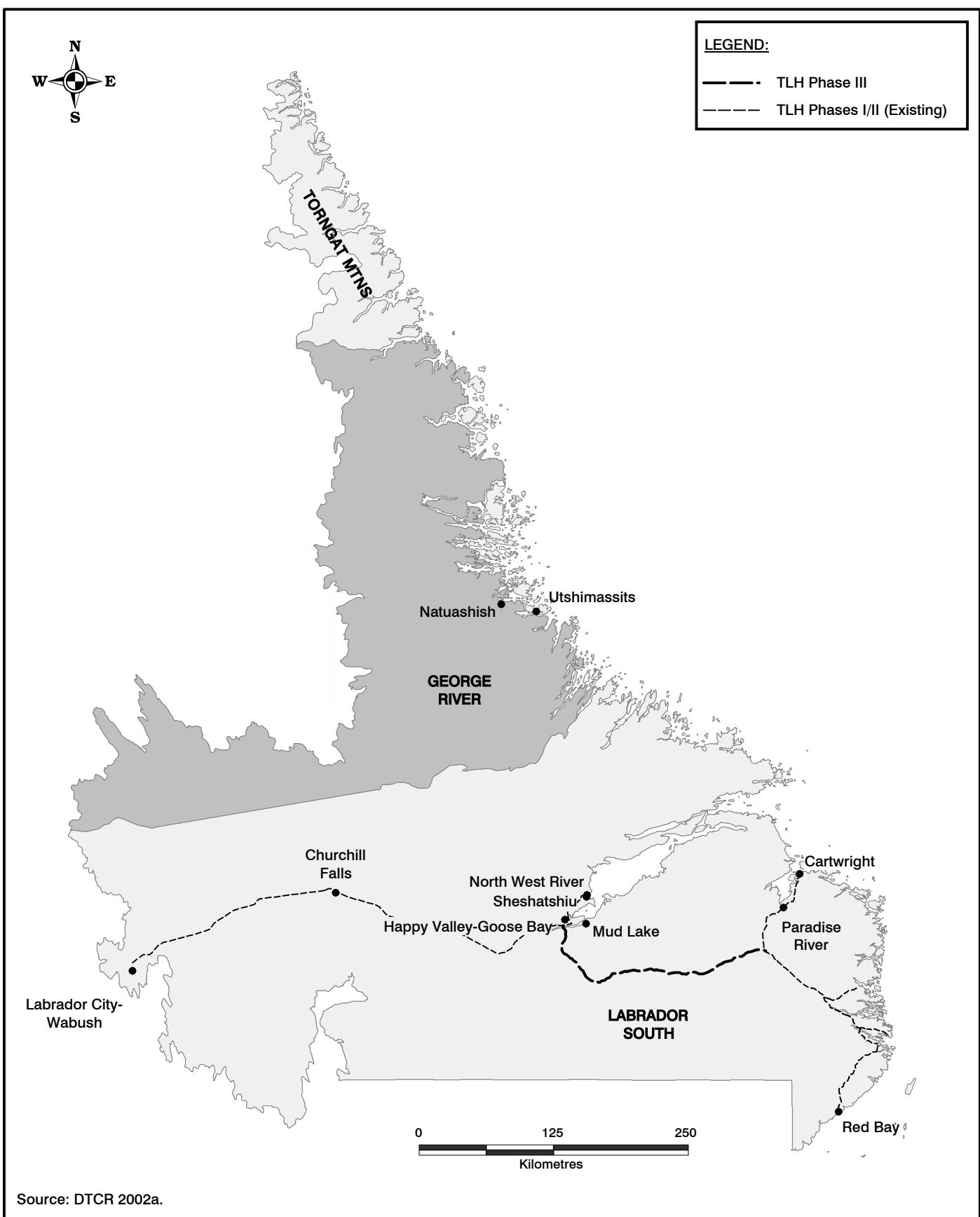


Figure 6.3
**Black Bear Management Areas
in Labrador**

6.2.4 Small Game

Small game hunting in Labrador is managed through two designated zones: the Northern Zone and Southern Zone (Figure 6.4). The proposed TLH - Phase III route is located in the Southern Zone. Willow ptarmigan, ruffed grouse, spruce grouse, snowshoe hare and Arctic hare are all managed species. The 2002-2003 season dates and bag limits for each small game species are provided in Table 6.1.

Table 6.1 Small Game Season Dates and Bag Limits, 2002-2003

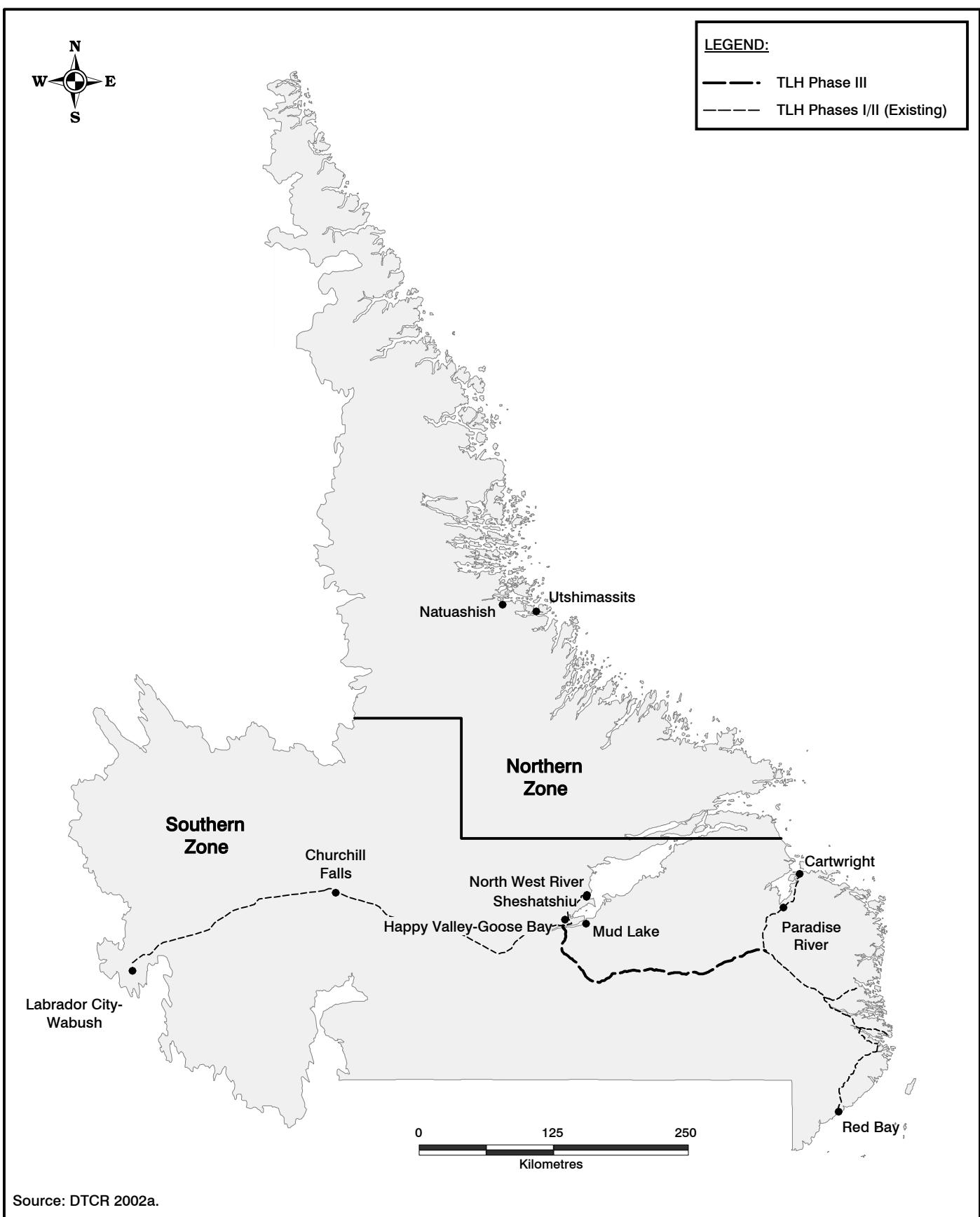
Species (Management Area)	Season Dates 2002-2003		Daily Bag Limit/Possession Limit
	Shooting	Snaring	
Rock Ptarmigan and Willow Ptarmigan (all of Labrador)	October 1 - April 20	October 1 - March 31	25/50
Grouse Northern Zone Southern Zone	October 1 - April 20 October 1 - April 20	October 1 - March 31 October 1 - March 31	no limit 20/40
Snowshoe Hare (all of Labrador)	October 1 - April 20	October 1 - March 31	no limit
Arctic Hare (all of Labrador)	October 1 - April 20	October 1 - March 31	no limit

Source: Department of Tourism, Culture and Recreation 2002a.

The snowshoe hare is distributed throughout forested regions of Labrador. This species exhibits fluctuations in population densities in an approximate 10-year cycle. This species is an important link in food chains and the marked fluctuations in densities can affect the populations of predators such as lynx, fox and marten. In Central Labrador, the Arctic hare is found at high elevations, where sub-Arctic conditions generally occur. Similar to the snowshoe hare, Arctic hares undergo cyclical population fluctuations.

Ptarmigan inhabit barrens, lake and river margins, and forest openings in Labrador. Grouse tend to be found in coniferous and mixed-wood forests although, similar to ptarmigan, they also use lake and river margins and forest openings. Hares, ptarmigan and grouse are year-round residents of Labrador.

Small game licenses, like resident caribou and black bear licences, may be purchased through vendor outlets. Non-resident hunters are not required to be accompanied by guides for small game hunting. As with caribou, small game hunters in the Torngat Mountain Electoral District are provided with a special small game license, free of charge. Records are not kept on the number of special licenses issued (W. Barney, pers. comm.). There are no special provisions for hunting by Aboriginal people outside the Torngat Mountain Electoral District; however, Aboriginal hunters outside this district must obtain a resident license.



Since 1991, when vendors began selling small game licenses, it has been difficult to accurately track annual sales of small game licenses. Extrapolating from the number of licenses sold from 1991 estimates that, in 2001, approximately 3,500 small game licenses were sold in Labrador (W. Barney pers. comm.). Note that the extrapolation assumes there has been no net loss in total hunters from 1991 to 2001. License sales and harvest records do not distinguish between the Northern or Southern Zones.

In 2001, an estimated 59,000 snowshoe and Arctic hares (combined), 49,000 ruffed and spruce grouse (combined) and 59,500 ptarmigan (both willow and rock) were harvested (W. Barney, pers. comm.). However, there is no information available on where hunting activity is concentrated in the Southern Zone.

6.2.5 Waterfowl

There are four migratory game bird hunting zones in Labrador, with the Central Zone encompassing the area of the proposed TLH - Phase III (Figure 6.5). Open season for ducks (other than harlequin and eider ducks), geese and snipe in three of the four hunting zones is the first Saturday in September to the second Saturday in December. In the Southern Labrador Zone, the open season begins one week later (i.e., second Saturday in September) and runs for one week longer (i.e., third Saturday in December). The eider duck season in the Northern Labrador Zone, extends from the last Saturday in September to the second Saturday in January. In the Southern Labrador Zone, the eider duck season is from the fourth Saturday in November to the last day of February.

The most commonly hunted duck species in Labrador are Canada goose and American black duck. The North American population of black ducks was estimated to be approximately 250,000 birds in 1997 (CWS 2000). Approximately 70 percent of the North Atlantic population of Canada geese breeds in Labrador, insular Newfoundland and eastern Québec. The population was estimated at 175,800 Canada Geese in Newfoundland and Labrador in 2000. Other waterfowl harvesting include mallard, green-winged teal, ring-necked duck and mergansers.

Harlequin ducks are protected and there is no legal hunting of this species. The eastern population of harlequin ducks are listed as a species of special concern by COSEWIC and are considered vulnerable under the provincial *Endangered Species Act*.

Daily and possession limits for ducks (other than mergansers, harlequin, eider and scoter) are 6 and 12, respectively. Merganser, scoter and eider have a daily and possession limit of 6 (not more than three may be eiders after the first Monday in February) and 12 (not more than six may be eiders after the first Monday in February). Geese and snipe have daily limits of 5 and 10, respectively, with a possession limit of 10 and 20, respectively.

There are only approximately 1,000 waterfowl hunters in Labrador (S. Gilliland, pers. comm.). As a result, harvest estimates for most individual species are low (usually <1,000 birds). However, the accuracy of these estimates is questionable (S. Gilliland, pers. comm.). Approximately 29,000 Canada geese and 135,000 ducks were harvested in Labrador between 1990 and 2001 (CWS unpublished data).

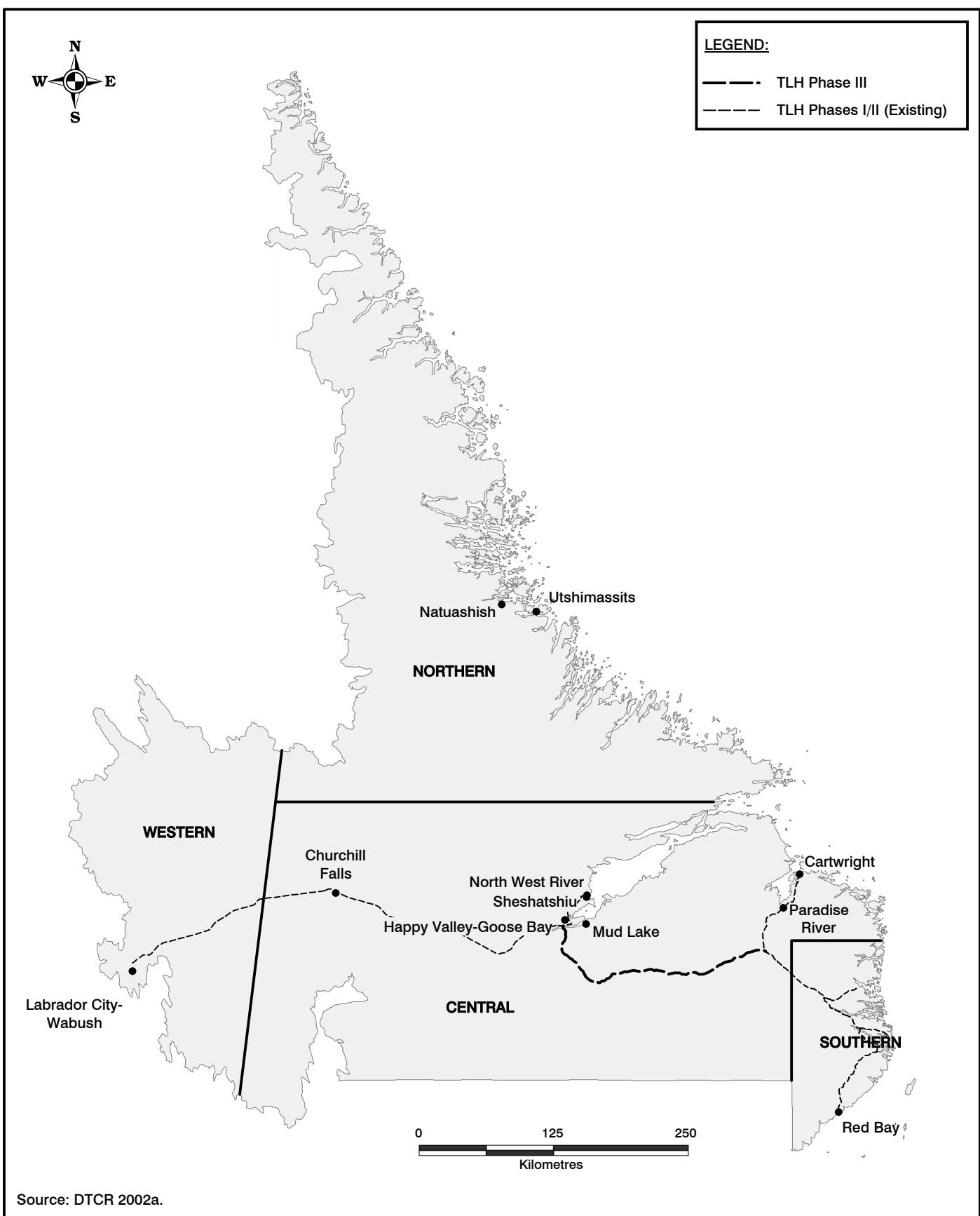


Figure 6.5
**Migratory Bird Hunting Zones
in Labrador**

Harvesting waterfowl requires a migratory game bird license that can be purchased at Canada Post Outlets. Non-residents are not required to have guides for waterfowl hunting. There are no special provisions for Aboriginal hunters.

Similar to black bear hunting, waterfowl hunting by area residents currently does not occur along the proposed TLH - Phase III route, as there is only access in winter and waterfowl have migrated from the area by this time. Rather, residents tend to concentrate waterfowl harvesting along coastal areas (J. Goudie, pers. comm.). Some harvesting of waterfowl by clients of outfitters probably occurs, as the salmon fishing season overlaps with the migratory bird hunting season for a two-week period in September (H. Martin, pers. comm.).

6.2.6 Seabirds

Murre (locally known as turr) hunting in Labrador is managed through a series of zones, of which Labrador is Zone 1. The season is open from September 2 to December 18. Hunters are limited to 20 murres per hunter per day, with a possession limit of 40 murres at any one time. A migratory game bird license is required to harvest murres. Non-residents of Newfoundland and Labrador are prohibited from hunting murres. Aboriginal persons may harvest murres without a permit. All other seabird species are protected under the *Migratory Birds Protection Act* and there is no legal hunting.

Murres breed along coasts and islands from western Greenland south to Nova Scotia and in the north Pacific from Bering Strait south to central California and northern Japan. The species winters offshore and may occur in large numbers on the Grand Banks. The number of murres in Canada seems to be currently stable or increasing. However, the number of birds visiting the waters off Newfoundland and Labrador has probably decreased over the past century (CWS 2003).

Murre hunting occurs in coastal areas. There are no data available on the total number of murres taken annually.

6.3 Trapping

Aquatic furbearers (i.e., otter, mink, muskrat and beaver) spend most or all of their life-cycle in and around wetland habitat, rivers and ponds. Other furbearers prefer dryer forested sites (e.g., fox, wolf, lynx, weasel, red squirrel, northern flying squirrel and marten), but may use riparian zones adjacent to wetland habitat.

Within both of these groups are carnivorous (on other mammals, birds, fish and insects) and herbivorous species. Important examples of carnivorous furbearers are marten, least weasel, red fox and ermine that feed primarily on voles and lemmings and other small mammals, while lynx and wolf are more specialized, with lynx feeding primarily on snowshoe hare. Mink and red fox are more generalized hunters, taking whatever prey is available. Species such as wolf and lynx use a variety of habitats and often have large home ranges. In contrast, species such as weasel and red squirrel have much smaller home ranges and depend on a diversity of habitat types in close proximity to meet their needs for cover and food.

There are two furbearer management zones in Labrador, the Labrador North Fur Zone and the Labrador South Fur Zone (Figure 6.6). The Labrador South Fur Zone encompasses the area of the proposed TLH - Phase III. The 2002-2003 trapping seasons for both Labrador furbearer management zones are provided in Table 6.2.

There are no registered traplines in Labrador. Trappers are required to submit an application to the Inland Fish and Wildlife Division to obtain a trapping license, which permits the trapper to trap anywhere in Labrador. However, trap lines have historically been and continue to be linked to specific family groups, which are commonly known and respected by other trappers (J. Goudie, pers. comm.). Beaver, as well as a number of other furbearer species (Table 6.2), may be trapped under a general trapping license (I. Pitcher, pers. comm.).

Table 6.2 Labrador Trapping Seasons and Zones, 2002-2003

Species	Labrador North Fur Zone	Labrador South Fur Zone
Beaver	October 15 - May 31	October 15 - May 31
Ermine	October 15 - May 31	November 1 - March 20
Red Fox	October 15 - May 31	November 1 - March 20
Arctic Fox	October 15 - May 31	November 1 - March 20
Coyote	October 15 - May 31	November 1 - March 20
Lynx	October 15 - May 31	November 1 - March 20
Marten	October 15 - May 31	November 1 - March 20
Mink	November 1 - March 31	November 1 - March 20
Muskrat	October 5 - May 31	October 15 - May 31
River Otter	October 15 - May 31	October 15 - May 31
Red Squirrel	October 15 - May 31	November 1 - March 20
Wolf	October 15 - May 31	November 1 - March 20
Fisher	No open season	No open season
Wolverine	No open season	No open season

Source: Department of Tourism, Culture and Recreation 2002a.

Up to six individuals from the Cartwright area travel inland, as far as the headwaters of the Eagle River, to trap in winter. The main species targeted is marten, although some beaver are also harvested (H. Martin, pers. comm.). In the early 1980s otter, beaver, muskrat and mink were targeted in addition to marten. However, for the last decade, marten have been the main targeted species due to the continued higher value of marten pelts (W. Lethbridge, pers. comm.). Typically, trappers would travel inland for seven to ten days, although trappers from the Cartwright area have been less active in the last few years, as the market price for fur pelts has been low and fuel prices have made the trip inland less economical (W. Lethbridge, pers. comm.). Presumably, ptarmigan, grouse and hares are also harvested opportunistically by the trappers.

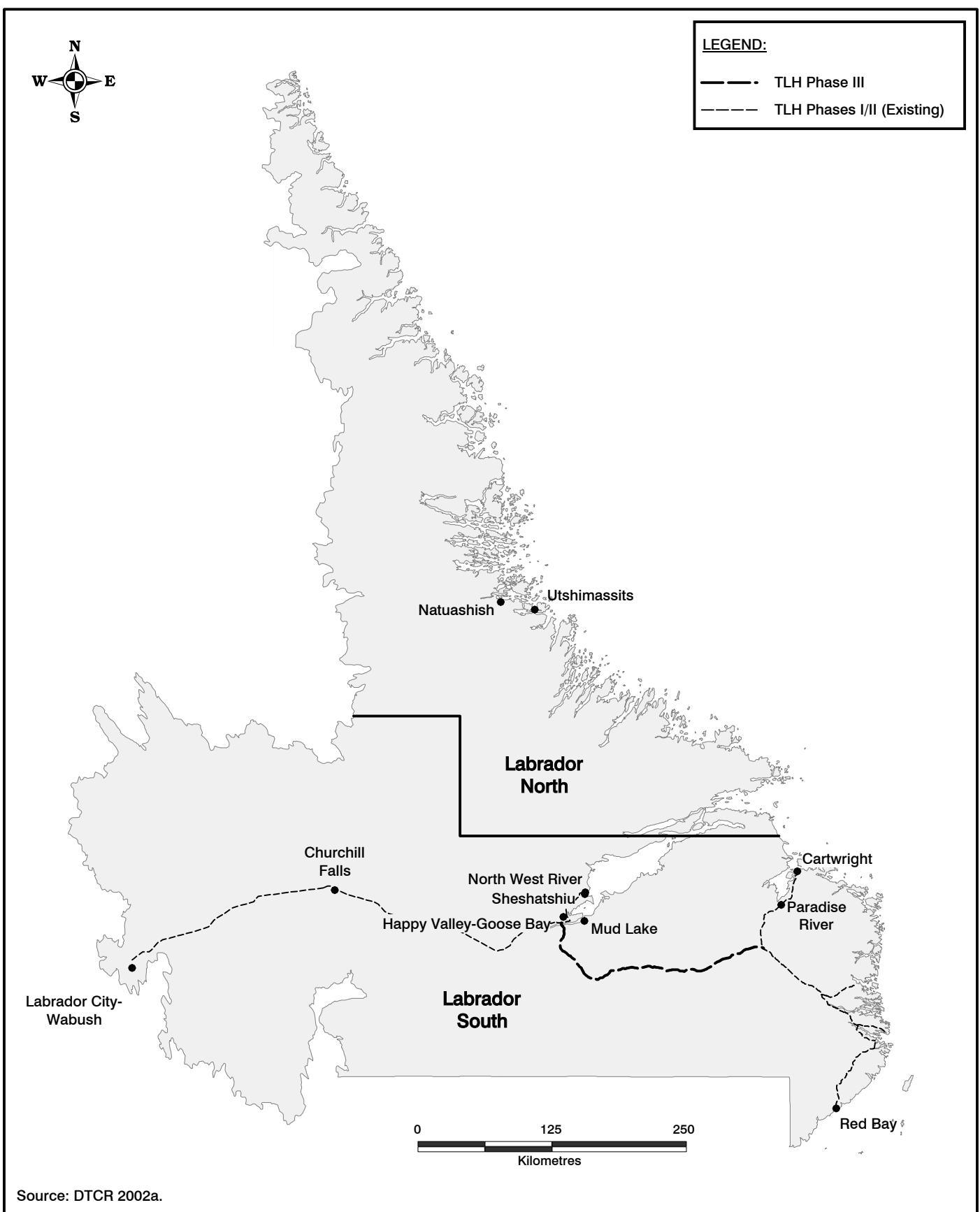


Figure 6.6
**Furbearer Management Zones
in Labrador**

Trappers from Happy Valley-Goose Bay have been trapping in the Kenamu River and Traverspine River areas for many years. These areas are not accessible except in mid-winter and all trapping takes place January through April. Similar to trappers from Cartwright, these trappers target marten, but will take mink, otter and the occasional wolf (J. Goudie, pers. comm.). Beaver are generally not harvested, because the lodges are buried in the winter and it is difficult to access beaver (W. Gear, pers. comm.; J. Goudie, pers. comm.).

During the 2001 to 2002 trapping season, over 4,800 pelts were harvested in Labrador (Table 6.3). An additional 426 silver fox, one mink, and 133 lynx pelts from ranched animals were also harvested (I. Pitcher, pers. comm.). For several years, trappers have also been asked to submit lynx carcasses and wolf skulls to the Inland Fish and Wildlife Division in an effort to further understand the biology of these species in Labrador.

Table 6.3 Furbearer Harvest in Labrador, 2001/2002

Species	Number of Pelts (from Labrador Fur Ledger and export permit records)
Black bear	36
Beaver	183
Weasel	304
Wolf	47
Silver fox	30
Cross fox	90
Red fox	543
White (Arctic) fox	12
Lynx	33
American marten	2328
Red squirrel	114
Mink	408
Muskrat	551
River otter	150
Source: Inland Fish and Wildlife Division, unpublished data.	

6.4 Wildlife Products

In addition to the commercial caribou harvest (Section 6.2.2), there are five businesses in Labrador that consistently deal in products made from animal parts. These are the Birches Gallery, Labrador Craft Marketing Agency, Drumdancer and Labrador Craft and Suppliers in Happy Valley-Goose Bay, and the Mealee Mountains Gallery in Cartwright. As well, there are up to two dozen artists who regularly produce products using bone, antler, hair, hide and fur (J. Spearing, pers. comm.).

The majority of the products produced are exported out of the province through Birches Gallery and the Labrador Craft Marketing Agency in Happy Valley-Goose Bay. The value of exported product is between \$100,000 and \$200,000 annually. The remainder of the products are sold locally to visitors and for corporate gifts; the value of local sales is estimated at approximately \$200,000 (J. Spearing, pers. comm.).

All producers of crafts using animals parts are required to have a permit if the material is obtained locally (i.e., from a local hunt). The craft industry provides substantial full or part-time income for all producers. The products with the most value tend to be commercially hide-made products and stone carvings, which increase the value of the overall craft industry in Labrador to approximately \$2 million annually (J. Spearing, pers. comm.).

7.0 FISHING

Inland waters are defined as all waters above spring tide low water mark or above DFO caution signs set at the mouth of an estuary (DFO 2002). In southern Labrador, inland waters are home to a number of fish species, of which Atlantic salmon, Arctic charr, brook trout, lake trout, northern pike and smelt are most important from a recreational or subsistence perspective. This chapter focuses on fishing activity that takes place in inland waters. However, some reference is made to anadromous species (i.e., fish that spawn in freshwater but spend a portion of their lives in salt water such as salmon) that are fished in the estuarine environment and may fall outside regulations pertaining to inland waters.

7.1 Current Regulatory Framework

Federal regulation of inland and coastal fisheries in Newfoundland and Labrador rests with DFO under the *Fisheries Act*. The act provides for regulation of freshwater and anadromous fish through the *Newfoundland Fisheries Regulations*, while saltwater fish are regulated under the *Atlantic Fisheries Regulations*. Aboriginal communal fisheries activities are regulated under the *Aboriginal Communal Licence Fishing Regulations*.

Although the federal government has the mandate for managing inland fish resources, the fish themselves are owned by the Province of Newfoundland and Labrador. The province, through the *Wildlife Act*, is responsible for any licencing of the various species and can set conditions on the use of the resource, such as requiring the use of guides or outfitters for non-resident anglers.

7.1.1 Atlantic Salmon

Newfoundland and Labrador is divided into 14 salmon fishing zones (SFZs), which may be associated with different opening and closing dates. Labrador is comprised of three SFZs, namely SFZs 1, 2 and 14B (Figure 7.1). All rivers along the proposed TLH - Phase III route are located within SFZ 2, which has a salmon angling season extending from June 15 to September 15. The 16 rivers within SFZ 2 are listed in Table 7.1. There are also three scheduled salmon rivers in the Labrador Straits region (Forteau River, L'Anse au Loup Brook and Pinware River) (DFO 2002).

Scheduled salmon rivers in Newfoundland and Labrador are assigned a classification (Class I to Class IV) or are unclassified, based on their capability to sustain angling activity. Classifications for the scheduled rivers in SFZ 2 are listed in Table 7.1. Class III designations were implemented on previously unclassified scheduled rivers in southern Labrador in 2001 to ensure the conservation of salmon stocks with the expected influx of anglers to the region as a result of the opening of the Phase II portion of the TLH between Red Bay and Cartwright (DFO 2002).

The rating assigned to a river affects its season bag limit and daily catch and release limits. The limits associated with the classification system are provided in Table 7.2. There are also a number of unscheduled rivers which contain Atlantic salmon. For the purpose of retaining salmon, all unscheduled rivers are rated as Class III.

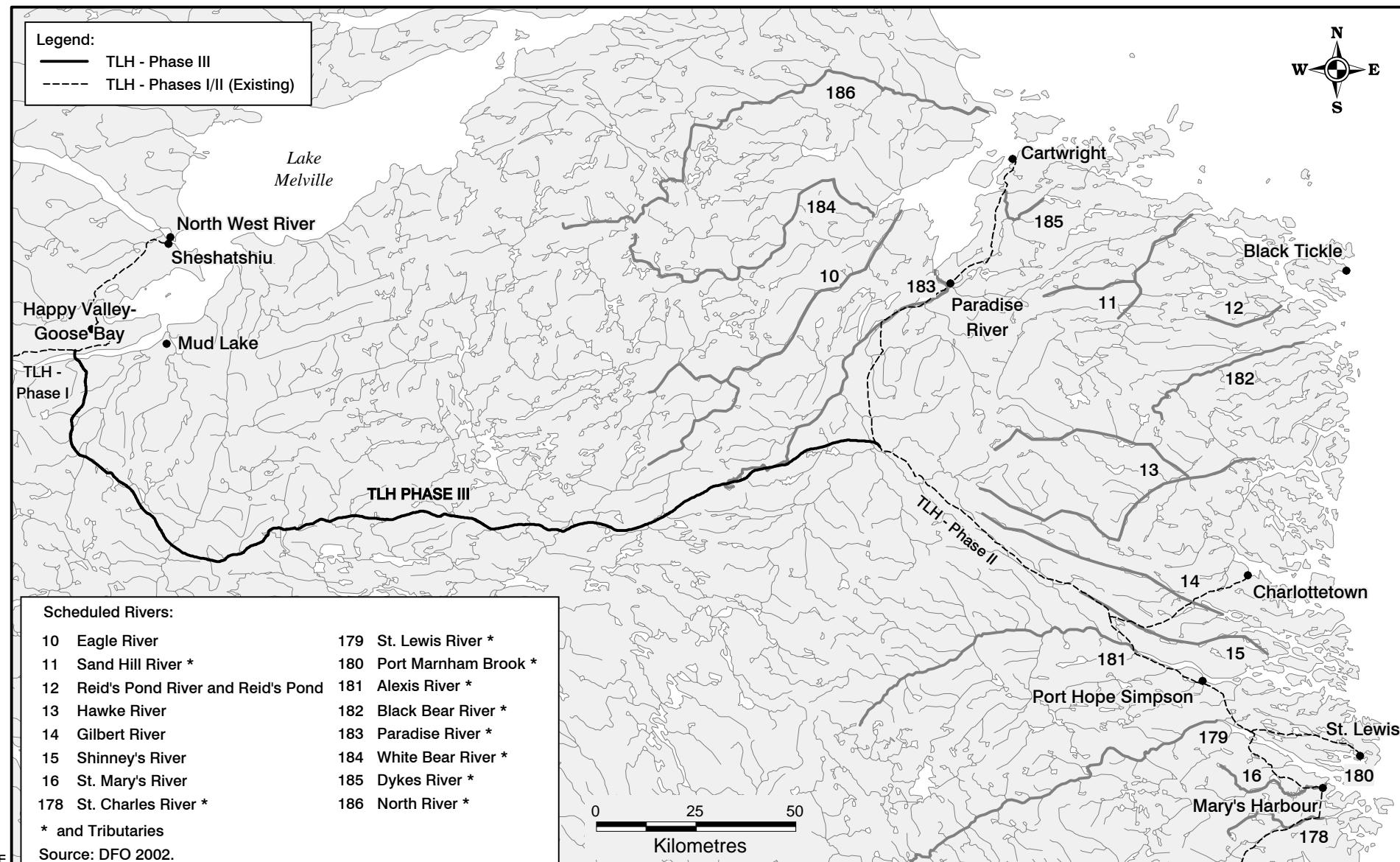


FIGURE 7.1

Scheduled Salmon Rivers
in Salmon Fishing Zone 2

Table 7.1 Scheduled Salmon Rivers in Salmon Fishing Zone 2

River No.	River	Classification
10	Eagle River	Unclassified
11	Sand Hill River (and tributary streams)	Unclassified
12	Reid's Pond River (and Reid's Pond)	Unclassified
13	Hawke River	Unclassified
14	Gilbert River	Unclassified
15	Shinney's River	Unclassified
16	St. Mary's River	Unclassified
178	St. Charles River (and tributaries)	Class III
179	St. Lewis River (and tributaries)	Class III
180	Port Marnham Brook (and tributaries)	Class III
181	Alexis River (and tributaries)	Class III
182	Black Bear River (and tributaries)	Unclassified
183	Paradise River (and tributaries)	Class III
184	White Bear River (and tributaries)	Unclassified
185	Dykes River (and tributaries)	Class III
186	North River (and tributaries)	Unclassified

See Figure 7.1 for locations of scheduled rivers.
Source: DFO 2002.

Table 7.2 River Classification and Associated Bag Limits

River Class	Seasonal Retention Limit	Daily Retention Limit	Daily Catch & Release Limited
I	6 fish	2 fish	4 fish
II	4 fish	2 fish	4 fish
III	2 fish	2 fish	4 fish
IV	None	None	2 fish
Unclassified	4 fish (one of which may be over 63 cm)	2 fish	4 fish

Source: DFO 2002.

Of the 16 scheduled rivers in SFZ 2, 10 are unclassified and six are rated as Class III. Only two of the five watersheds along the proposed TLH - Phase III route have scheduled rivers, namely, the Eagle River and Paradise River. The Eagle River is designated as unclassified, while the Paradise River is designated as Class III. Due to the difference in classification, these rivers are subject to different seasonal retention limits (Table 7.2).

Ten of the 16 scheduled rivers are unclassified (i.e., lack rating on the river's capability of sustaining angling activity, which affects the season bag limit); therefore, anglers can retain a maximum of four fish per season, only one of which may be a large (> 63 cm) salmon. The remaining six rivers are Class III rivers, in which a maximum of two fish may be retained per season (neither of which may be large). Class III designations were implemented on previously unclassified scheduled rivers in Southern Labrador in 2001 to ensure the conservation of salmon stocks with the expected influx of anglers to the region as a result of the opening of the Phase II portion of the TLH between Red Bay and Cartwright (DFO 2002). There are also a number of unscheduled rivers which contain Atlantic salmon. For the purpose of retaining salmon, all unscheduled rivers are rated as Class III.

A salmon license is required by both residents and non-residents to fish for salmon (or any other species) in scheduled waters. Licenses are available at a number of retail outlets throughout Newfoundland and Labrador. Anglers can fish non-scheduled inland waters without a salmon license. However, salmon caught in non-scheduled waters in the absence of a valid salmon license must be released. Anglers can fish for salmon in coastal waters without a salmon license. However, all salmon caught must be released, even if an angler possesses a valid salmon license and tags.

7.1.2 Trout

For the purposes of regulation, trout refers to brook trout, brown trout and ouananiche. Currently, no distinction is made between the different species in the *Newfoundland Fisheries Regulations*. However, proposed regulatory changes are anticipated in 2003, which will make regulation by species possible (B. Slade, pers. comm.).

Trout management in Newfoundland and Labrador is associated with five trout angling zones. The Island of Newfoundland comprises Zone 1, while Labrador has been divided into four zones (Figure 7.2). Watersheds along the proposed TLH - Phase III route fall into two trout angling (zones 3 and 5). Regulations for these zones are consistent, except for a special trout management plan in place for Gilbert's Lake and Chateau Pond in Zone 3. These trout management plans were put in place in response to the anticipated increase in angling pressure that may result from the completion of Phase II portion of the TLH (B. Slade, pers. comm.).

The trout angling season for Zones 3 and 5 consists of a winter and summer season. The winter season extends from February 1 to April 15, while the summer season extends from May 15 to September 15. The daily bag limit for trout in these zones is 12 fish, or five pounds plus one fish, whichever comes first. The possession limit is two times the daily bag limit. There are no seasonal possession limits for trout. In the special trout management areas, the daily bag limit is six fish, or two pounds plus one fish. The possession limit is equal to the daily bag limit, and season opening and closing dates are consistent with those for the rest of Zones 3 and 5.

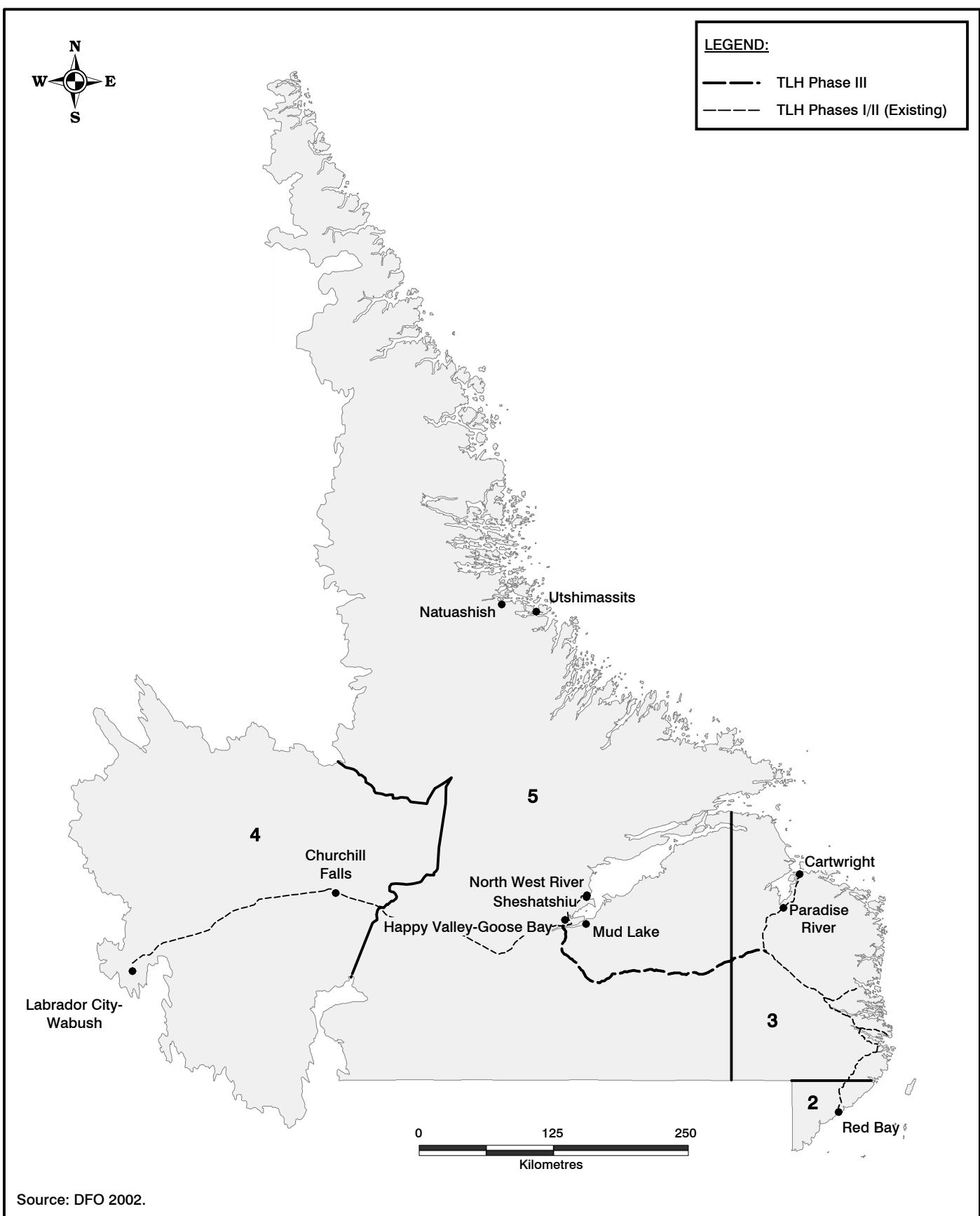


Figure 7.2
**Trout Management Zones
in Labrador**

The licensing requirements for trout fishing depends on whether angling takes place on scheduled waters and whether an angler is resident or non-resident. Anglers (resident or non-resident) trout fishing on scheduled waters must have a salmon license. Non-residents wishing to retain trout on scheduled waters must also possess a trout license. In non-scheduled waters, there is no license requirement for resident anglers. However, non-resident anglers must possess a valid trout license to fish in non-scheduled waters. Trout fishing in coastal waters is not subject to season closures or licensing requirements, but is subject to the provincial bag limit.

7.1.3 Other Species

Various other game fish are pursued in the recreational fishery. Some of these species have a specified bag limit, while others have no bag limit. Northern pike, arctic charr and lake trout are subject to a daily bag limit of two fish and a possession limit of twice the daily bag limit. White fish and smelt do not have any limit associated with them.

The season associated with fishing these species in inland waters is the same as the trout fishing season (i.e., February 1 to April 15 and May 15 to September 15). There is no specific license required for any of these species. However, if these species are fished in scheduled waters, anglers (resident and non-resident) require a salmon license. Non-residents fishing in non-scheduled waters also require a trout license. Any of these species can be fished year-round in coastal waters without a license, but the bag limit applies.

7.1.4 Guide Requirements

Anglers in the region include local residents, visitors from elsewhere in the province, and visitors from other parts of Canada and other countries. Resident anglers fishing in Labrador do not require the services of a guide or outfitter. However, non-resident anglers in Labrador (north of 52° N latitude) may not fish inland waters without engaging the services of an outfitter, with the following exceptions:

- a non-resident may fish without an outfitter or a licensed guide if accompanied by a direct relative who is a resident;
- when visiting a cooperative camp, a non-resident may fish without an outfitter (but must be accompanied by a licensed guide or direct relative) anywhere in the lake or pond that the camp is located on, or 800 m above or below the camp, if the camp is on a river;
- a non-resident may fish unaccompanied on non-scheduled waters within 800 m of a provincial highway; and
- a non-resident may fish scheduled salmon waters without engaging the services of an outfitter (but must be accompanied by a licensed guide or direct relative) if fishing 800 m above or below a bridge on a provincial highway.

On the island of Newfoundland and in Labrador south of 52° N, a non-resident angler cannot fish scheduled salmon waters unless accompanied by a licensed guide or by a direct relative who is a resident. Non-residents may only fish unaccompanied on non-scheduled waters within 800 m of a provincial highway (DFO 2002).

7.1.5 Lake Melville - Southern Labrador Subsistence Fishery

Residents of Labrador can also partake in a subsistence fishery for trout and salmon. This is a coastal fishery that occurs in four subdivisions, extending from Cape Rouge to Cape Charles. This fishery is available to any Labrador resident (Aboriginal and non-Aboriginal) provided that they held this license in the previous year (J. Holwell, pers. comm.). Licenses can be attained free of charge at any DFO office and are limited to one per household. The season opening and closing dates vary depending on the subdivision fished. A condition of the license is that nets can only be used in coastal waters (W. Mclean, pers. comm.). The mesh size used must be between 7.5 to 9.0 cm (i.e., 3.0 to 3.5 inches) and the length of the net cannot exceed 27 m. The licence entitles the fisher to catch a combination of 100 trout and/or charr, or four Atlantic salmon, whichever comes first. All salmon must be tagged.

7.1.6 Lake Melville - Commercial Fisheries

Currently, there is no commercial fishing activity in Lake Melville. However, three commercial trout fishing licenses exist for the Lake Melville area. These licenses have not been used in recent years as there is no local market for the product (J. Holwell, pers. comm.). Commercial smelt fishing has not occurred in Lake Melville for approximately five years and there are no current holders of licenses for smelt. There has also been no commercial salmon fishery in Lake Melville since the moratorium was introduced in 1992 (J. Holwell, pers. comm.).

7.1.7 Aboriginal Fishing Agreements

Harvest arrangements with Aboriginal peoples are determined on an annual basis through a fisheries agreement with DFO. These agreements are for net fisheries managed by bag limits, seasons and gear restrictions. At present, there are arrangements with the Labrador Innu and Inuit. The Innu have a co-management arrangement with DFO, while the Inuit have a communal license arrangement. Currently, there is no fisheries agreement with the Métis (K. Anderson, pers. comm.).

7.1.8 Enforcement

DFO has seven offices in Labrador (Nain, Makovik, Rigolet, Happy Valley-Goose Bay, Cartwright, St. Lewis and L'Anse au Loup), which are typically staffed by 17 conservation officers (W. Mclean, pers. comm.). Officers are responsible for both inland and coastal waters. Currently, DFO employs one seasonal river guardian in Labrador, which is assigned to the Eagle River. The three Aboriginal groups in Labrador also have fisheries guardians. Innu Nation has five guardians: three in Sheshatshiu; and two in Utshimassits. The LIA has two guardians in Happy Valley-Goose Bay and one in each community extending north to Nain. The Labrador Métis Nation has a guardian in Happy Valley-Goose Bay and one in each community from Cartwright to Mary's Harbour (W. Mclean, pers. comm.). As well, provincial conservation officers also have the authority to enforce fisheries regulations.

7.2 Fishing Activity

Angling is a popular activity in Labrador for both residents and non-residents. Angling activities are geared towards a number of species and are conducted in both freshwater and saltwater environments.

7.2.1 Fishing Activity in Central Labrador

Along the proposed TLH - Phase III route, resident angling activity is currently concentrated near the communities of Happy Valley-Goose Bay and Cartwright. Near Happy Valley-Goose Bay, anglers fish a variety of species, with the most common being brook trout or speckled trout. Trout fishing is particularly good in the spring just after "ice out" (W. Mclean, pers. comm.). Many of the lakes in the region are used for trout angling, but Lake Melville, Grand Lake and certain tributaries to the Churchill River are probably the more common fishing areas (W. Mclean, pers. comm.). In the section of Churchill River from Gull Island to Churchill Falls, many private cabins are being built and anglers are experiencing good fishing for brook trout and ouananiche (W. Mclean, pers. comm.). Angling for salmon in the Happy Valley-Goose Bay area is not particularly good, as most of the good salmon fishing pools are relatively inaccessible and are usually accessed on "fly in" basis (W. Mclean, pers. comm.).

Ice fishing in the area is a common activity and many of the nearby lakes are accessible by snowmobile. Lake Melville is one of the more common ice fishing locations, particularly for smelt, brook trout and rock cod. Directed angling effort for rock cod seems to be increasing since the cod moratoria were imposed (W. Mclean, pers comm.).

7.2.2 Fishing Activity in Southern Labrador

Near Cartwright and Paradise River, salmon fishing is probably the most common activity (G. Bird, pers. comm.). Salmon fishing takes place in a number of the rivers in the area (Eagle River, White Bear River, Paradise River and North River), but is probably most concentrated on the lower portion of the Eagle River (G. Bird pers. comm., H. Martin, pers. comm.). In recent years, with the closure of the commercial salmon fishery, there appears to have been an increase in the number of local people involved in salmon angling (H. Martin, pers. comm.). There also seems to be an increase in the number of Newfoundland angler's that arrive by passenger boat (i.e., the ferry service from Lewisporte). These anglers mainly fish on the Eagle River, but some fish the Paradise River as well (G. Bird, pers comm.).

Smelt fishing and, to a lesser degree, trout fishing are also common activities in the area (G. Bird, pers. comm.). Smelt fishing is a particularly common fishing activity in the winter time and is concentrated in portions of the Paradise River known as Crooked Pond and Follett's Pond, located approximately 16 to 24 km from the estuary (G. Bird, pers. comm.). Table Bay Pond, located east of Cartwright, is also a common smelt fishing area (H. Martin, pers. comm.). Trout fishing takes place in a number of ponds and rivers in the local area, with no one area of concentration. Angling for Arctic charr takes place mainly near Dyke's River in both fresh and salt water (G. Bird, pers. comm.). The amount of recreational angling for brook trout and charr is limited by the fact that residents in the area can obtain a license to net these species as part of the subsistence fishery (H. Martin, pers. comm.).

7.2.3 Fishing Effort

There are limited data available on recreational fisheries resource use in Labrador. Information that was collected in association with the *2000 Survey of Recreational Fishers in Canada* (DFO 2000) is summarized in Table 7.3. The total number of anglers and their associated fishing effort by angler type (resident, non-resident Canadian, non-resident foreign) for both fresh and salt water in 2000. In 2000, 390,069 angler-days of effort were expended by anglers in Labrador, with approximately 86 percent of this effort being expended in freshwater (Table 7.3). There were an estimated 23,567 freshwater anglers in 2000, with resident anglers accounting for 95 percent of total freshwater anglers and contributing approximately 98 percent of the total effort.

Table 7.3 Number of Anglers by Angler Category and Days Fished in Labrador, 2000

Angler Category	Freshwater			Saltwater			Total		
	No. of Anglers	Mean Days Fished	Total Days Fished	No. of Anglers	Mean Days Fished	Total Days Fished	No. of Anglers	Mean Days Fished	Total Days Fished
Resident	22,392	14.52	325,160	7,644	7.37	56,325	22,906	16.65	381,484
Non-resident (Canadian)	392	8.51	3,334	18	7.79	144	402	8.64	3,478
Non-resident (Foreign)	784	6.48	5,078	18	1.58	28	794	6.43	5,107
Total	23,567	14.15	333,572	7,680	7.36	56,497	24,102	16.18	390,069

Source: DFO 2000.

Of the 16 rivers located within SFZ 2, angling data are available for 10 of these (Table 7.4). In 2001, there were a combined 4,247 rod-days for these 10 rivers, with rod-days for individual rivers ranging from 47 on the Gilbert River to 2,301 on the Eagle River. A total of 4,715 fish were caught in the 10 rivers that year (including those retained and released), ranging from 0 on the Gilbert River to 3,071 on the Eagle River. Catch per unit effort (CPUE) rates in 2001 ranged from 0 on the Gilbert River to 2.19 on the Hawke River, with an overall CPUE of 1.11 for the 10 rivers (Table 7.4).

The number of people participating in recreational angling in the study area is reportedly increasing. In the Happy Valley-Goose Bay area, there are many more people fishing now than in the past. The increase is especially noticeable in the number of people angling for smelt and rock cod (W. Mclean, pers. comm.). In the Cartwright area, a similar trend is emerging, with an increase in both local participation and participation of people from Newfoundland (G. Bird, pers. comm.; H. Martin, pers. comm.). H. Martin (pers. comm.) notes an increase in the number of local salmon anglers on the Eagle River, while G. Bird (pers. comm.) notes an increased number of local anglers fishing for smelt. G. Bird (pers. comm.) also notes an increased number of anglers from Newfoundland travelling to Cartwright by passenger boat to partake mainly in salmon fishing, but trout fishing as well.

Table 7.4 Angling Effort and Catch Rates for Scheduled Salmon Rivers, 1995 to 2001

Year	Eagle River			Sand Hill River			Hawke River			Gilbert River			Shinney's River		
	Rod Days	No. of Fish	CPUE	Rod Days	No. of Fish	CPUE	Rod Days	No. of Fish	CPUE	Rod Days	No. of Fish	CPUE	Rod Days	No. of Fish	CPUE
1995	1,724	2,196	1.27	426	671	1.58	63	58	0.92	26	21	0.81	238	254	1.07
1996	2,189	2,738	1.25	739	1,079	1.46	117	101	0.86	41	0	0.00	438	294	0.67
1997	1,998	1,494	0.75	629	799	1.27	121	97	0.80	n/a	n/a	n/a	352	211	0.60
1998	2,321	2,361	1.02	594	724	1.22	152	135	0.89	41	2	0.05	231	170	0.74
1999	2,329	3,057	1.31	694	904	1.30	268	172	0.64	98	0	0.00	124	44	0.35
2000	2,272	3,450	1.52	644	995	1.55	291	548	1.88	67	9	0.13	168	254	1.51
2001*	2,301	3,071	1.33	651	800	1.23	166	364	2.19	47	0	0.00	136	109	0.80
Year	St. Mary's River			St. Charles River			St. Lewis River			Port Marnham Brook			Alexis River		
	Rod Days	No. of Fish	CPUE	Rod Days	No. of Fish	CPUE	Rod Days	No. of Fish	CPUE	Rod Days	No. of Fish	CPUE	Rod Days	No. of Fish	CPUE
1995	352	56	0.16	184	38	0.21	257	66	0.26	159	20	0.13	44	52	1.18
1996	764	131	0.17	355	49	0.14	764	257	0.34	269	43	0.16	370	339	0.92
1997	576	58	0.10	272	42	0.15	359	58	0.16	165	36	0.22	502	351	0.70
1998	610	249	0.41	182	147	0.81	192	221	1.15	97	11	0.11	374	312	0.83
1999	718	114	0.16	205	33	0.16	312	180	0.58	125	2	0.02	477	364	0.76
2000	430	139	0.32	133	30	0.23	243	235	0.97	79	22	0.28	224	291	1.30
2001*	310	91	0.29	159	42	0.26	148	77	0.52	155	24	0.15	174	137	0.79

Notes:

No. of Fish The total number of fish caught (retained and released).
 CPUE Catch Per Unit of Effort (i.e., number of fish caught per rod-day).
 n/a Data not available.

* Data for 2001 are preliminary.

Source: N. Cochrane, pers. comm..

These observations are supported by the DFO (2000) angling data available for Labrador. The total number of anglers (resident, non-resident Canadian and non-resident foreign) fishing in Labrador increased from 9,191 in 1990 to 24,102 in 2000 (Table 7.5). This increase is mainly attributable to resident anglers, who have almost tripled in number since 1990. The numbers of non-resident anglers, both Canadian and foreign, fluctuated over the same time period. Total days fished for all anglers increased from 137,687 in 1990 to 390,069 in 2000.

There has also been an increase in the number of anglers fishing newly accessible areas associated with the construction of Phase II of the TLH. C. Poole (pers. comm.) notes that angling activity has increased (as much as tripled) with the completion of Phase II. Correspondingly, the number of patrols by fishery officers and the number of charges laid have probably doubled. Anglers frequenting the area are mainly from communities in southern Labrador. However, anglers from the island portion of Newfoundland, the Maritime Provinces and Québec are also common and anglers from outside Canada have also been noted.

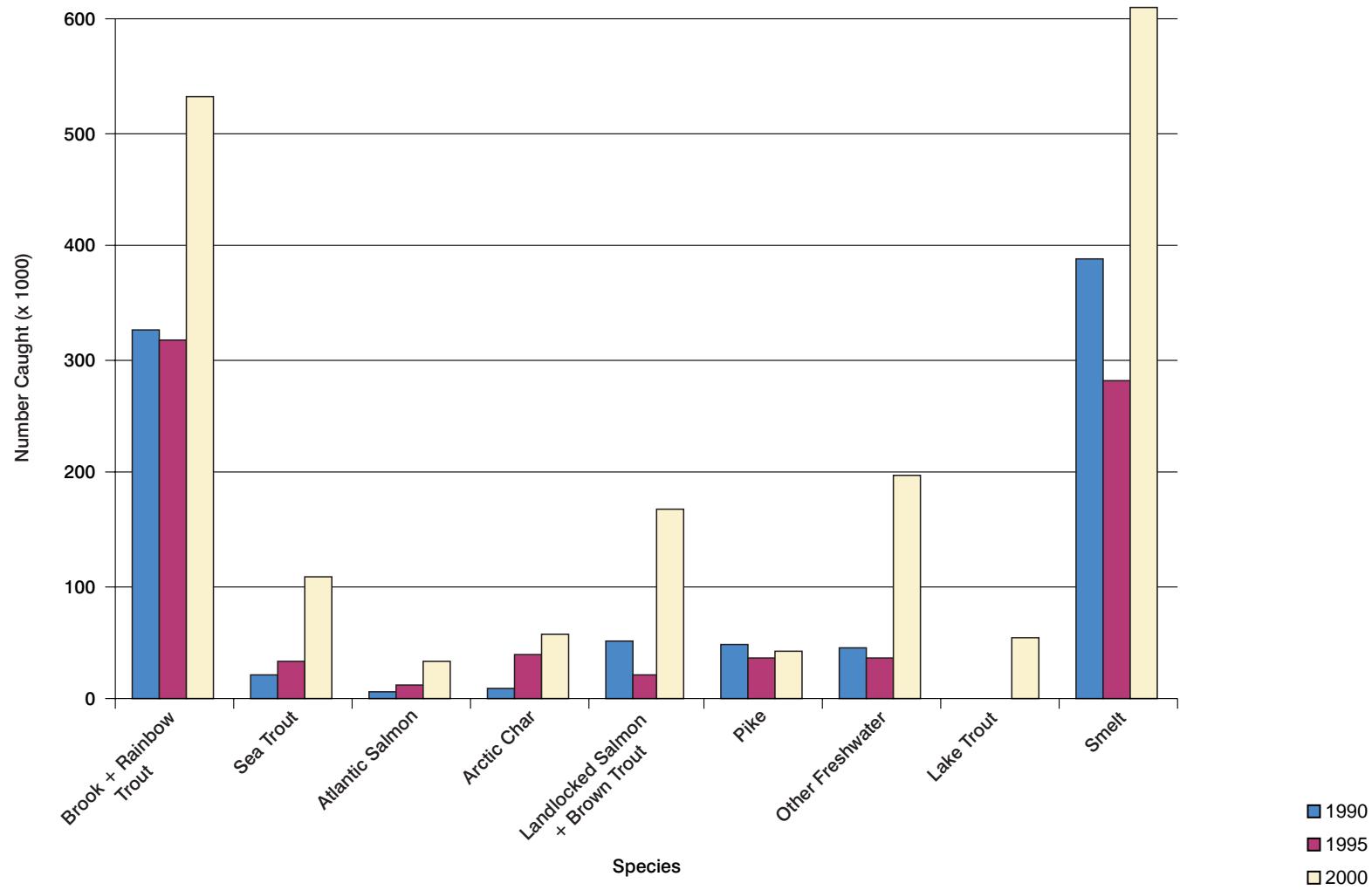
Table 7.5 Number of Anglers and Days Fished in Saltwater and Freshwater in Labrador, 1990, 1995 and 2000

Angler Category	Number of Anglers	Days Fished		
		Freshwater	Saltwater	Combined
1990	—	—	—	—
Resident	7,700	118,879	9,934	128,113
Non-resident (Canadian)	413	2,804	71	2,875
Non-resident (Foreign)	1,078	6,532	167	6,699
Total	9,191	127,515	10,172	137,687
1995	—	—	—	—
Resident	9,590	123,525	30,329	153,854
Non-resident (Canadian)	1,162	6,843	76	6,919
Non-resident (Foreign)	560	3,575	22	3,597
Total	11,312	133,943	30,427	164,370
2000	—	—	—	—
Resident	22,906	325,160	56,325	381,484
Non-resident (Canadian)	402	3,334	144	3,478
Non-resident (Foreign)	794	5,078	28	5,107
Total	24,102	333,572	56,497	390,069

Source: DFO 1990; 1995; 2000.

7.2.4 Fish Catch and Composition

An indication of the number of fish caught by species in Labrador in 1990, 1995 and 2000 is provided in Figure 7.3. The numbers of fish caught in 2000 compared to catches in 1990 and 1995 increased for all species, except northern pike. The increased catches are associated with increased effort during that year. The number of brook trout caught in 1990 and 1995 are similar to the number of smelt caught in those years. However, in 2000, about twice as many smelt were taken as brook trout. This corresponds with the observations of enforcement officials in Happy Valley-Goose Bay and Cartwright, suggesting an increase in the popularity of this activity.



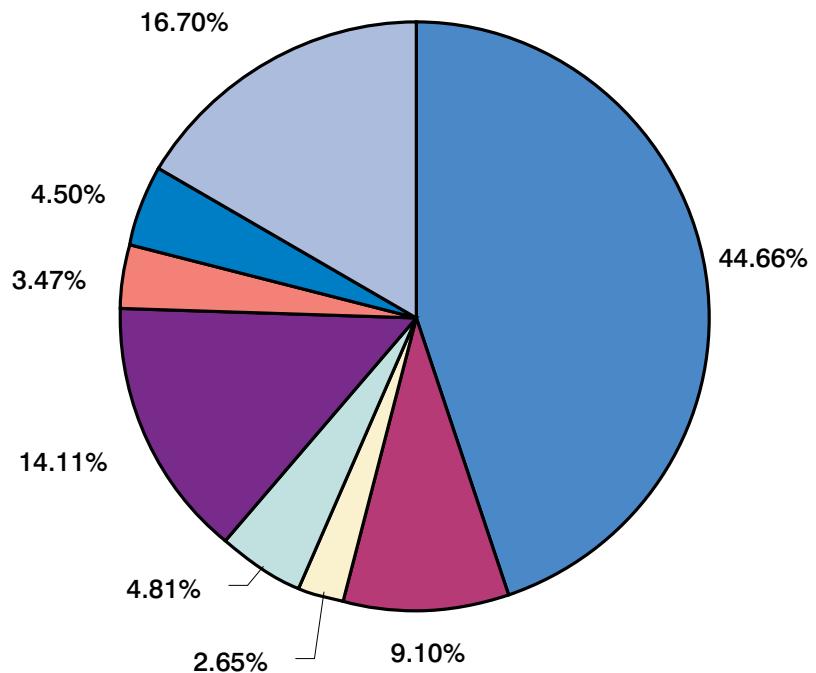
Source: DFO 1990, 1995 and 2000.



Figure 7.3
Fish Caught in Labrador
(Freshwater and Anadromous), 1990, 1995 and 2000

The DFO (2000) survey indicates that in terms of numbers of fish caught, smelt rated the highest. In total, 2,453,416 fish were angled in fresh and salt water, of which 1,007,134 were smelt, accounting for 41 percent of the total catch. The proportions of total catch for other freshwater and anadromous species (excluding smelt) are shown in Figure 7.4. Of the remaining freshwater catch, brook trout comprised 45 percent, followed by landlocked salmon (14 percent), sea trout (9 percent), arctic charr (5 percent), lake trout (5 percent), northern pike (3 percent) and Atlantic salmon (3 percent). Approximately 17 percent of the catch is comprised of other freshwater fish, which includes a wide array of freshwater species (Figure 7.3).

It is interesting to note that rainbow trout and brown trout were also mentioned as species caught in Labrador (DFO 2000). These species are not known to occur in Labrador and their relatively high occurrence is likely due to the inability of anglers to distinguish between species. LGL (1994:74) draws a similar conclusion from the DFO recreational fishery data and makes the following statement regarding rainbow trout and brown trout: *The large numbers of rainbow trout in the DFO data (referring to Newfoundland and Labrador data combined) appear to be an error because it is unlikely many rainbow trout are taken when they only occur in a few locations. The number of brown trout also appears to be high relative to ouananiche, and it is possible many anglers cannot distinguish between brown trout and ouananiche.* For the purposes of this study, the numbers of rainbow trout caught have been included with brook trout, and brown trout have been included with ouananiche.



Species:

- Brook Trout + Rainbow Trout
- Sea Trout
- Atlantic Salmon
- Arctic Char
- Landlocked Salmon + Brown Trout
- Pike
- Lake Trout
- Other (not including smelt)

Source: DFO 2000.



Figure 7.4

**Labrador Angling Catch (Freshwater
and Anadromous) Composition, 2000**