Labrador – Island Transmission Link

Vegetation Supplementary Report

Labrador Transmission Corridor Option: Muskrat Falls to the Strait of Belle Isle

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1.0 INTRODUCTION

Nalcor Energy is proposing to develop the *Labrador – Island Transmission Link* (the Project), a High Voltage Direct Current (HVdc) transmission system extending from Central Labrador to the Island of Newfoundland's Avalon Peninsula.

The environmental assessment (EA) process for the Project was initiated in January 2009 and is in progress. An Environmental Impact Statement (EIS) is being prepared by Nalcor Energy, which will be submitted for review by governments, Aboriginal and stakeholder groups and the public. In preparation for and support of the Project's EA, a series of environmental studies have been completed to provide information on the existing biophysical and socioeconomic environments in and near the Project area.

At the time of the commencement of the EA and these associated environmental studies, the Labrador component of the Project included a converter station facility at Gull Island on the lower Churchill River, as well as a proposed transmission corridor extending from Gull Island to the Strait of Belle Isle (SOBI). In mid-November 2010, Nalcor Energy advised the provincial and federal governments that it would also be assessing the potential option of locating the Project's Labrador converter station at or near the Muskrat Falls site on the lower Churchill River. If that were to be the case, the Labrador transmission corridor would potentially extend from Muskrat Falls to the Trans Labrador Highway Phase III (TLH-3), and then follow generally along the south side of the highway to approximately its southernmost point before meeting and continuing along the previously identified corridor from that location to the SOBI (Figure 1.1).

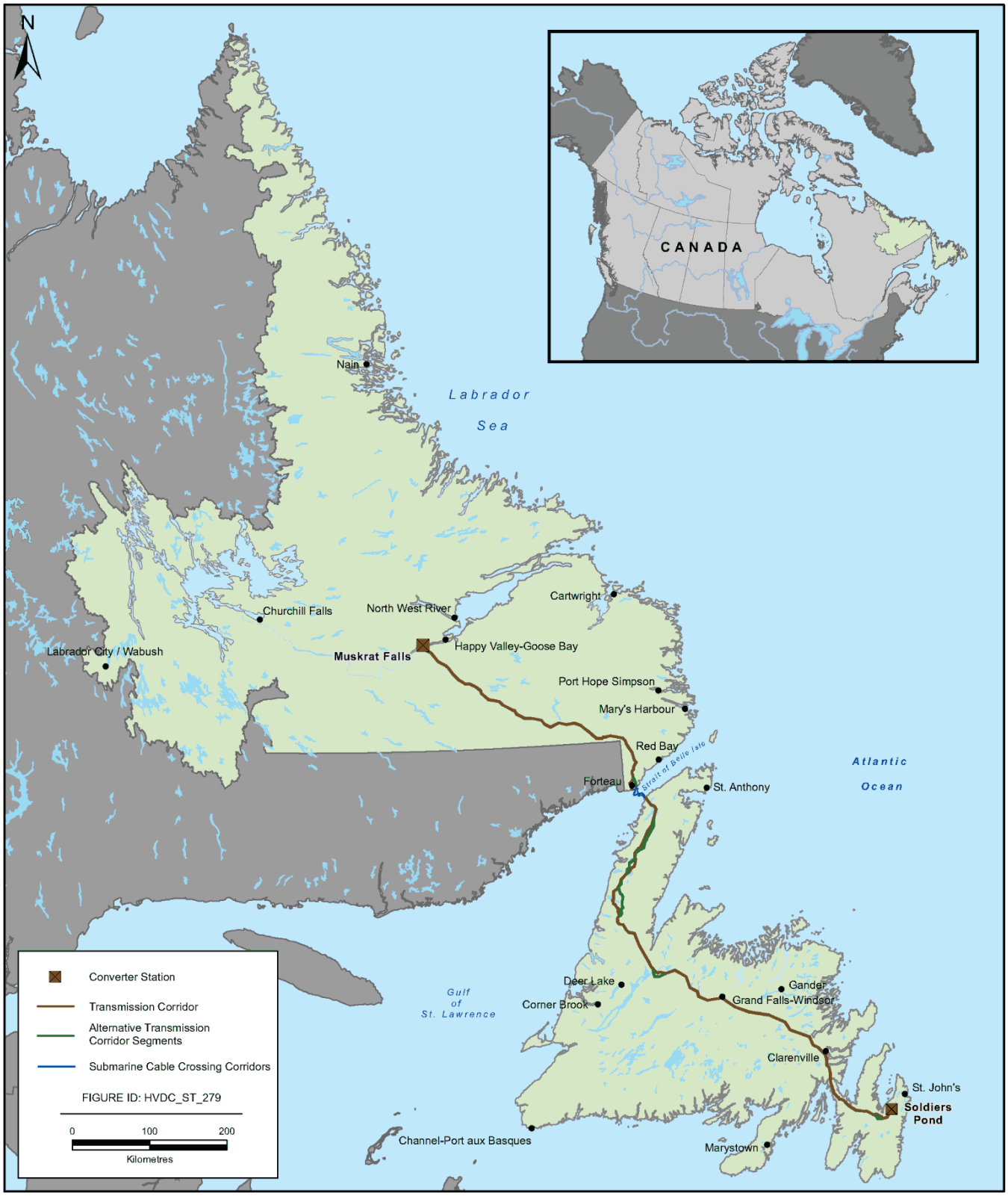
The purpose of this supplementary report is to expand and update the scope of the Vegetation Component Study completed for the EA to provide similar environmental information for this additional transmission corridor option from Muskrat Falls to the SOBI, for eventual use in Project planning and in the EIS.

In doing so, this report provides supplementary information related to each of the four parts of the Vegetation Component Study, specifically:

1) Ecological Land Classification (ELC);
2) Wetlands Inventory and Classification;
3) Regionally Uncommon Plants Potential Mapping; and
4) Timber Resources.

This supplementary report provides information on vegetation and vegetation communities in the area of the proposed Project, including the identified 2 km wide transmission corridor, as well as a larger regional Study Area that comprises an area approximately 15 km wide surrounding the corridor. Although the purpose of this supplementary report is to provide information and analysis for the new 135 km long transmission corridor segment from Muskrat Falls, to and along a portion of the TLH-3, to the point where that corridor option joins the previously identified transmission corridor to the SOBI (see Figure 1.1), for completeness and consistency, the associated results and mapping include the entire transmission corridor and larger Study Area from Muskrat Falls to the SOBI.

Figure 1.1 Labrador - Island Transmission Link (Muskrat Falls Corridor Option)



2.0 ECOLOGICAL LAND CLASSIFICATION

In preparation for and in support of the Project's EA, an ELC was completed in order to present information on vegetation communities and habitats in the area of, and which may interact with, the Project as environmental baseline information for use in the EIS (Stantec 2010a).

This supplementary report provides a description of Habitat Types occurring within an approximately 15 km wide Study Area surrounding a recently identified transmission corridor option from Muskrat Falls to the SOBI. The report should be read in conjunction with Stantec (2010a).

2.1 Approach and Methods

Methodologically, the approach used to identify, categorize and evaluate vegetation types and associated habitats on a regional scale along the Study Area was conducted as per the methods described in Stantec (2010a).

2.2 Results and Analysis

The Study Area (approximately 5,754 km^2) crosses through five Ecoregions. The Low Subarctic Forest (Mecatina River) and String Bog (Eagle River Plateau) Ecoregions are dominant, comprising approximately 41 percent and 35 percent of the Study Area, respectively. The Forteau Barrens Ecoregion comprises 16 percent of the Study Area, whereas the High Boreal Forest (Lake Melville) and Mid Boreal Forest (Paradise River) Ecoregions are relatively minor, accounting for approximately 6 percent and 2 percent, respectively.

Within those Ecoregions overlapping with the ELC Study Area, ten ELC Habitat Types were identified: Black Spruce Lichen Forest (2 percent); Burn (<1 percent); Conifer Forest (24 percent); Conifer Scrub (18 percent); Exposed Bedrock (<1 percent); Hardwood Forest (<1 percent); Lichen Heathland (6 percent); Mixedwood Forest (<1 percent); Open Conifer Forest (24 percent); and Wetland (21 percent).

Additionally, three ELC non-habitat areas were identified along the Study Area (Clouds / Shadow, Exposed Earth / Anthropogenic / Cutblock and Open Water), accounting for <5 percent of the mapped area.

For the 2 km wide transmission corridor, eight ELC Habitat Types were identified: Black Spruce Lichen Forest (2 percent); Burn (<1 percent); Conifer Forest (26 percent); Conifer Scrub (20 percent); Lichen Heathland (6 percent); Mixedwood Forest (<1 percent); Open Conifer Forest (25 percent); and Wetland (19 percent). Exposed Bedrock (0 percent) and Hardwood Forest (0 percent) Habitat Types were not encountered within the 2 km wide transmission corridor. Non-habitat areas, including Exposed Earth / Anthropogenic / Cutblock, Cloud / Shadow and Open Water, account for <2 percent of the 2 km wide transmission corridor.

A summary of the total area covered by each ELC Habitat Type and Non-habitat Area within the ELC Study Area and 2 km wide transmission corridor, by Ecoregion, is provided in Table 2.1. Graphical representation of the Habitat Types for the Study Area and transmission corridor are presented in Figures 2.1 and 2.2, respectively. A summary of the total area of Habitat Types and Non-habitat Area is provided in Table 2.2.

Detailed ELC mapping is provided in Appendix A.

Table 2.1 Habitat Type and Non-habitat Area within the ELC Study Area and Transmission Corridor by Ecoregion

Ecoregion	Habitat Types										Non-habitat Areas			Total
	Black Spruce Lichen Forest	Burn	Conifer Forest	Conifer Scrub	Exposed Bedrock	Hardwood Forest	Lichen Heathland	Mixedwood Forest	Open Conifer Forest	Wetland	Cloud / Shadow	Exposed Earth / Anthropogenic/ Cutblock	Open Water	
ELC Study Area (approximately 15 km wide)														
High Boreal Forest (Lake Melville)	6.7	0.0	188.8	26.5	0.0	5.6	3.2	10.2	67.9	4.5	0.0	0.9	6.8	321.1
Low Subarctic Forest (Mecatina River)	69.0	38.8	739.1	353.9	0.8	0.3	34.8	17.1	576.9	474.0	1.6	2.0	77.2	2,385.5
Mid Boreal Forest (Paradise River)	0.2	0.5	23.4	42.9	0.0	0.0	4.3	0.0	5.9	38.8	1.2	0.0	1.1	118.3
String Bog (Eagle River Plateau)	51.6	0.0	378.1	266.5	0.0	0.3	5.4	14.8	705.8	522.8	0.8	0.4	64.2	2,010.7
Forteau Barrens	0.1	0.1	77.9	335.3	0.2	0.0	282.3	0.0	2.1	153.5	23.0	0.8	43.2	918.5
Total	**127.6**	**39.4**	**1,407.3**	**1,025.1**	**1.0**	**6.2**	**330.0**	**42.1**	**1,358.6**	**1,193.6**	**26.6**	**4.1**	**192.5**	**5,754.1**
Percent of ELC Study Area	**2.2**	**<1.0**	**24.5**	**17.8**	**<1.0**	**<1.0**	**5.7**	**<1.0**	**23.6**	**20.7**	**<1.0**	**<1.0**	**3.3**	**100.0**
Transmission Corridor (2 km wide)														
High Boreal Forest (Lake Melville)	0.0	0.0	17.5	0.6	0.0	0.0	0.0	0.0	3.5	0.1	0.0	0.0	0.2	21.9
Low Subarctic Forest (Mecatina River)	9.6	5.0	122.5	53.8	0.0	0.0	3.4	2.5	84.3	60.7	0.0	0.1	5.8	347.7
String Bog (Eagle River Plateau)	5.0	0.0	46.5	42.7	0.0	0.0	0.1	0.8	105.1	63.2	0.0	0.0	3.9	267.3
Forteau Barrens	0.0	0.0	10.3	57.4	0.0	0.0	40.3	0.0	1.5	20.8	0.1	0.0	2.2	132.6
Total	**14.6**	**5.0**	**196.8**	**154.5**	**0.0**	**0.0**	**43.8**	**3.3**	**194.4**	**144.8**	**0.1**	**0.1**	**12.1**	**769.5**
Percent of Transmission Corridor	**1.9**	**<1.0**	**25.6**	**20.1**	**0.0**	**0.0**	**5.7**	**<1.0**	**25.3**	**18.8**	**<1.0**	**<1.0**	**1.6**	**100.0**

Note: Units are km^2. Rounding errors less than 1 percent occur in final total

Figure 2.1 Habitat Type and Non-habitat Area Summary (ELC Study Area)

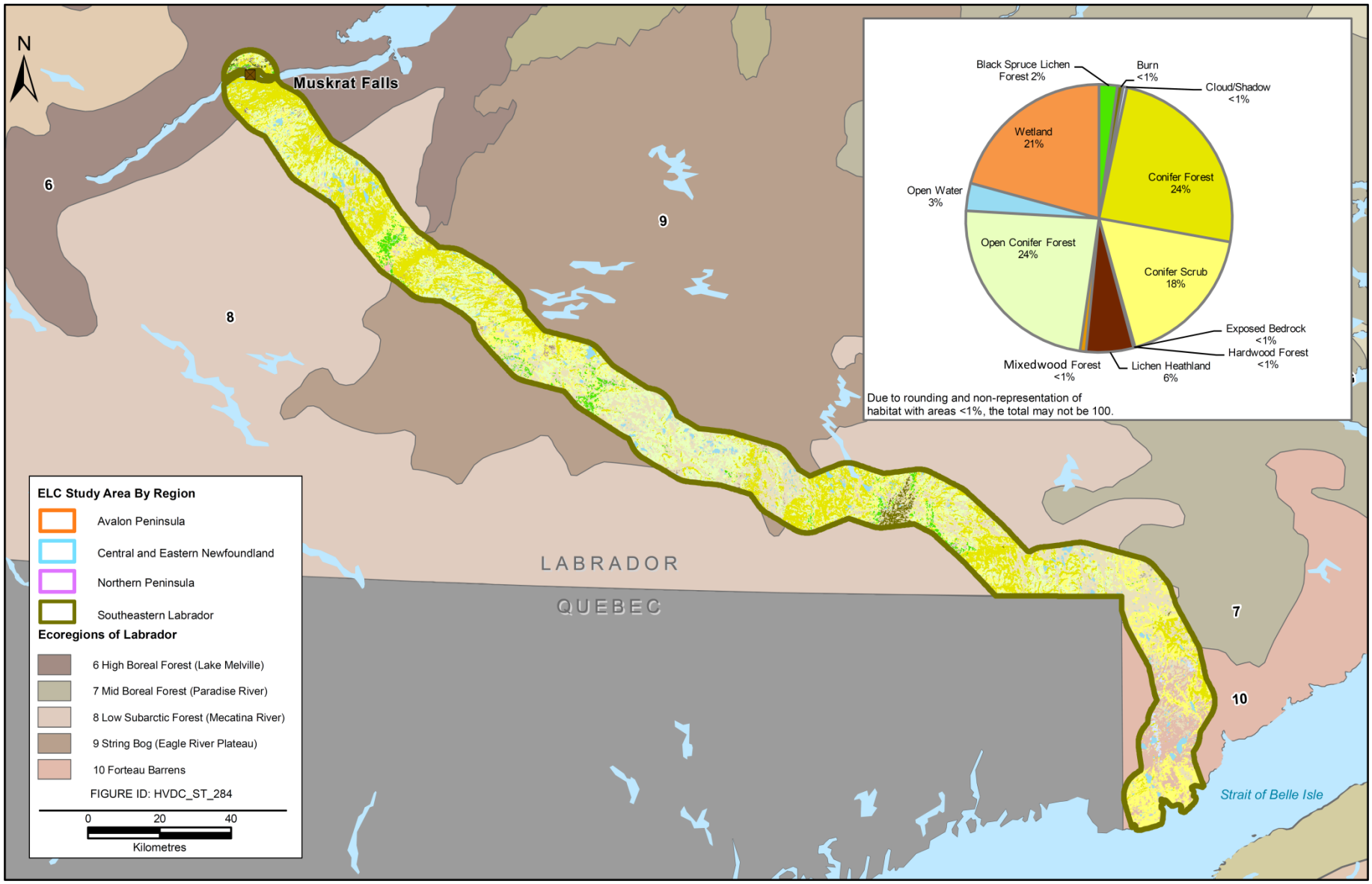


Figure 2.2 Habitat Type and Non-habitat Area Summary (Transmission Corridor)

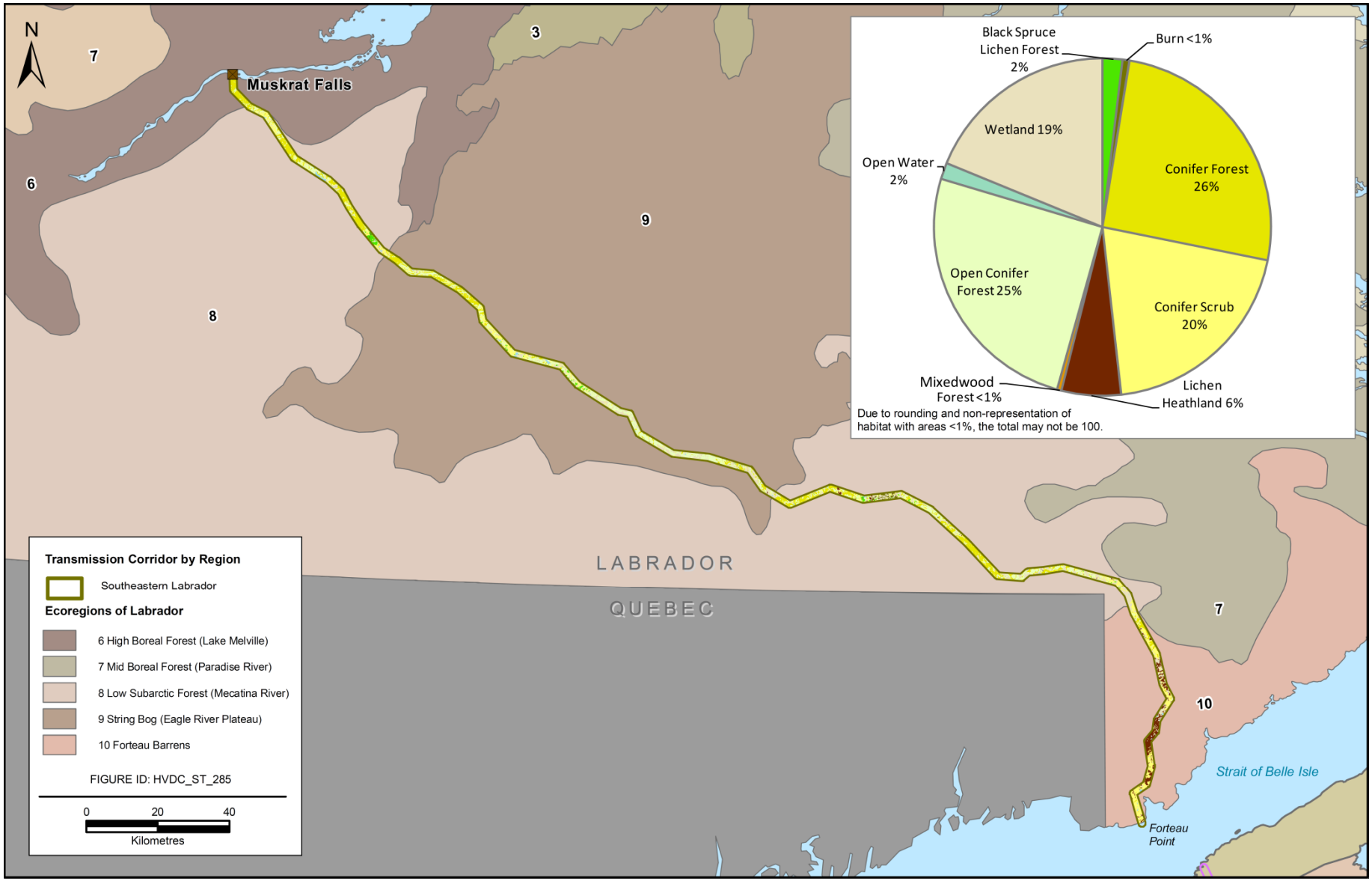


Table 2.2 Habitat Type and Non-habitat Area within the ELC Study Area and Transmission Corridor

	ELC Study Area (approximately 15 km wide) (km^2)	Transmission Corridor (2 km wide) (km^2)
Habitat Types		
Black Spruce Lichen Forest	127.6	14.6
Burn	39.4	5.0
Conifer Forest	1,407.3	196.8
Conifer Scrub	1,025.1	154.5
Exposed Bedrock	1.0	0.0
Hardwood Forest	6.2	0.0
Lichen Heathland	330.0	43.8
Mixedwood Forest	42.1	3.3
Open Conifer Forest	1,358.6	194.4
Wetland	1,193.6	144.8
Non-habitat Areas		
Cloud / Shadow	26.6	0.1
Exposed Earth / Anthropogenic / Cutblock	4.1	0.1
Open Water	192.5	12.1
Total	**5,754.1**	**769.5**
Note: Units are km^2. Rounding errors less than 1 percent occur in final total		

3.0 WETLANDS INVENTORY AND CLASSIFICATION

In preparation for and in support of the Project's EA, a Wetlands Inventory and Classification Study was completed in order to present information on wetlands in the area of, and which may interact with, the Project as environmental baseline information for use in the EIS. This supplementary report provides similar wetlands information for the potential transmission corridor option from Muskrat Falls to the SOBI.

3.1 Approach and Methods

Methodologically, the approach used to identify, inventory and classify the wetlands within the 2 km wide corridor was as per the methods described in Stantec (2010b).

In this study, a detailed inventory and classification of wetlands within the proposed 2 km wide transmission corridor was conducted, expanding and further refining the ELC Study Area (Stantec 2010a) used to identify and delineate wetlands within a larger (15 km wide) regional study area.

3.2 Results and Analysis

The study's results are provided through a series of tables, summary text and figures. Information is provided on each wetland class, form and complex as contained within the transmission corridor, in addition to that of the total and relative area, and distribution of each wetland class and form by Ecoregion for Southeastern Labrador.

Within Southeastern Labrador, approximately 9 percent (6,934 ha) of the 2 km wide transmission corridor (76,950 ha) is comprised of wetland (Stantec 2010b). Graphical representation of wetland class and form for the transmission corridor is presented in Figure 3.1.

A summary of the total and relative area covered by each of the various wetland classes and forms within the 2 km wide transmission corridor, by Ecoregion (i.e., High Boreal Forest, Low Subarctic Forest, String Bog and Forteau Barrens), is provided in Table 3.1.

Three primary wetland classes, bogs, fens and marshes, were identified within the transmission corridor. A fourth class, derived to encompass complexes of bog and fen that were not practical to delineate at the 1:50,000 mapping scale, and referred to herein as peatland complex, was used for this exercise. The results of the Wetland Inventory and Classification Study indicate that within the approximately 2 km wide transmission corridor in Southeastern Labrador (76,950 ha), wetlands comprise approximately 9 percent of the area. Bogs and peatland complexes are the most common wetland classes, covering approximately 2,834 ha (4 percent) and 3,510 ha (5 percent) of the total transmission corridor area, respectively. Fens comprise the remaining wetland area at approximately 589 ha (1 percent). An atlas of wetlands delineated to class and form, at a scale of 1:50,000, has been included as Appendix B.

Figure 3.1 Wetland Distribution within the 2 km Transmission Corridor, by Ecoregion

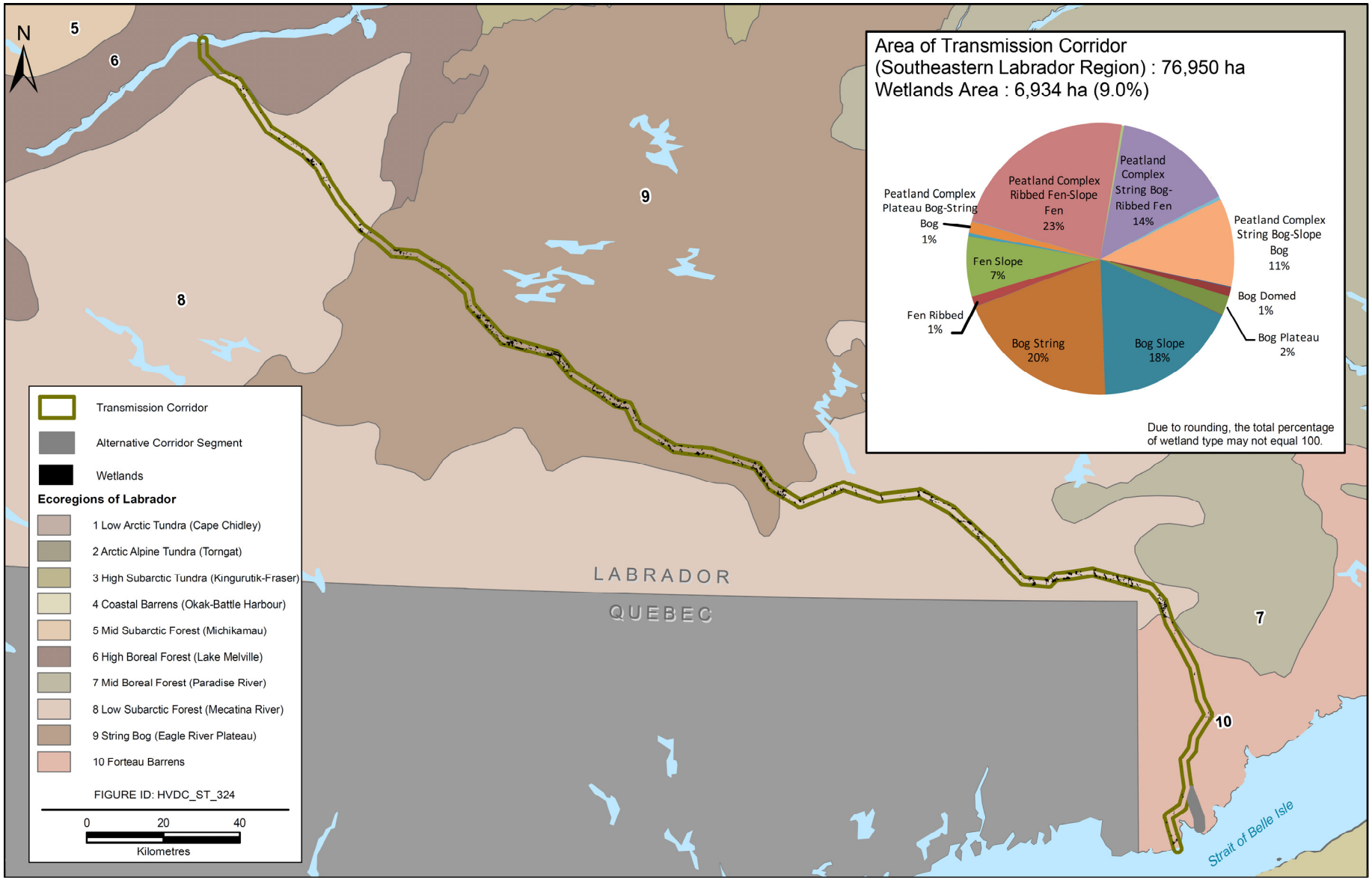


Table 3.1 Area of Wetland Class and Form within the 2 km Transmission Corridor, by Ecoregion

Ecoregion	Wetland Class	Wetland Form	Area (ha)*	Percent of Corridor
High Boreal Forest (Lake Melville)	Bog	Domed	2.1	0.03**
		Total	*2.1*	*0.03*
	Fen	Slope	3.5	0.05**
		Total	*3.5*	*0.05*
	Peatland Complex	Ribbed Fen-Slope Fen	2.6	0.04**
		Total	*2.6*	*0.04*
High Boreal Forest (Lake Melville) Wetland Total			**8.2**	**0.12**
Low Subarctic Forest (Mecatina River)	Bog	Blanket	8.3	0.12**
		Domed	39.3	0.57**
		Plateau	160.6	2.32
		Slope	261.2	3.77
		String	551.0	7.95
		Total	*1,020.4*	*14.72*
	Fen	Domed	2.4	0.03**
		Ribbed	73.9	1.07
		Slope	229.0	3.30
		String	2.0	0.03**
		Total	*307.3*	*4.43*
	Peatland Complex	Plateau Bog-String Bog	97.1	1.40
		Raised Bog-Slope Fen	6.0	0.09**
		Ribbed Fen-Slope Fen	803.4	11.59
		Slope Bog-Ribbed Fen	20.2	0.29**
		String Bog-Ribbed Fen	440.4	6.35
		String Bog-Slope Bog	493.1	7.11
		String Bog-Slope Fen	2.3	0.03**
		Total	*1,862.5*	*26.86*
Low Subarctic Forest (Mecatina River) Wetland Total			**3,190.2**	**46.01**
String Bog (Eagle River Plateau)	Bog	Domed	27.3	0.39**
		Ribbed	4.7	0.07**
		Slope	794.9	11.46
		String	809.3	11.67
		Total	*1,636.2*	*23.59*
	Fen	Ribbed	13.4	0.19**
		Slope	251.2	3.62
		Total	*264.6*	*3.82*
	Peatland Complex	Domed Bog-Slope Bog	24.8	0.36**
		Ribbed Fen-Slope Fen	789.7	11.39
		String Bog-Ribbed Fen	563.5	8.13
		String Bog-Slope Bog	208.4	3.01
		String Bog-Slope Fen	25.7	0.37**
		Total	*1,612.1*	*23.25*
String Bog (Eagle River Plateau) Wetland Total			**3,512.9**	**50.66**

Table 3.1 Area of Wetland Class and Form within the 2 km Transmission Corridor, by Ecoregion (continued)

Ecoregion	Wetland Class	Wetland Form	Area (ha)*	Percent of Corridor
Forteau Barrens	Bog	Slope	164.4	2.37
		String	11.5	0.17**
		Total	*175.9*	*2.54*
	Fen	Slope	13.6	0.20**
		Total	*13.6*	*0.20*
	Peatland Complex	String Bog-Slope Bog	33.2	0.48**
		Total	*33.2*	*0.48*
Forteau Barrens Wetland Total			**222.7**	**3.22**
Grand Total			**6,934**	**100.00**

*Area of Wetland Form within section of the 2 km wide transmission corridor per Ecoregion
**Wetland forms where percent of corridor is <1.0 are not included in pie chart for Figure 3.1

4.0 REGIONALLY UNCOMMON PLANT POTENTIAL MAPPING

In preparation for and in support of the Project's EA, a *Regionally Uncommon Plant Potential Mapping Report* (Stantec 2010c) was completed for the *Labrador - Island Transmission Link.* This supplementary report supports Stantec (2010c) and focuses primarily on the new approximately 135 km long transmission corridor segment from Muskrat Falls. For completeness, the associated plant potential mapping includes the entire transmission corridor and larger 15 km wide Study Area from Muskrat Falls to the SOBI.

4.1 Approach and Methods

Methodologically, the same dual approach used to identify, predict and delineate areas of regionally uncommon plant potential within the various Habitat Types in Stantec (2010c) was used here.

Moreover, in an effort to ensure accuracy of the model, address changes to the Project and incorporate updates to the number of plant species considered "listed" (i.e., protected under the *Species at Risk Act* (*SARA*) and the *Newfoundland and Labrador Endangered Species Act* (*NLESA*)) and "regionally uncommon" (i.e., species of interest to the Newfoundland and Labrador Department of Environment and Conservation (NLDEC) [Wildlife Division]), records of known regionally uncommon plant species (Atlantic Canada Conservation Data Centre (ACCDC) 2010), rated S1 (extremely rare) and S2 (rare), within the Study Area were reacquired from the ACCDC (A. Durocher, pers. comm.). This supplementary report is therefore considered up to date and appropriate for use in the evaluation of regionally uncommon plant species distribution in the Study Area.

Information regarding the potential occurrence of regionally uncommon and/or listed plant species within the Study Area has been obtained through a review of previous studies and existing reports, ACCDC database queries and an update of the ELC-based habitat model. The information sources reviewed include those presented in Stantec (2010c), the TLH-3 (Cartwright Junction to Happy Valley-Goose Bay) EIS (Department of Works, Services and Transportation 2003) and associated studies and reports, and other sources (Jacques Whitford Environment Limited (Jacques Whitford) 2007, 2008, 2009; Minaskuat Inc. 2008).

The number of potentially uncommon species found during previous surveys, and the frequency with which they were encountered, is considered high in comparison to similar surveys conducted in other locations throughout Atlantic Canada. From 2003 to 2009, surveys of the TLH-3 study corridor, east of the Study Area, identified several sites supporting populations of potentially uncommon vascular plant species. A comparison of known species occurrence, and distribution information within this and other relevant reports and studies with that of the current NLDEC scarcity ranks (SRanks), indicates that many of the species identified therein are no longer considered regionally uncommon in Labrador (ACCDC 2010). As new information becomes available through botanical surveys, species scarcity ranks are adjusted accordingly (C. Hanel, pers. comm.)

Several potentially uncommon vascular plant species identified through relevant studies of the TLH-3 and Lower Churchill Hydroelectric Generation Project (Minaskuat Inc. 2008) were recorded outside the Study Area for the Project and not considered further. Alternatively, habitat affinities for a small number of species evaluated in the Minaskuat (2008) report indicated that habitats typically associated with large river systems having extensive gravel bars, shrub thickets and/or riparian sub-units containing sheltered closed canopy stands of spruce and fir, flood plain pools and wetlands would be good candidate areas to model. As such, only those

regionally uncommon plant species with potential to overlap with the Study Area were considered for inclusion in the regionally uncommon plant modelling exercise for the Project.

Key plant species selected for review and inclusion in the regionally uncommon plant potential model include those species listed (Environment Canada 2011) under *SARA* and/or *NLESA*, in addition to those records acquired from updated ACCDC species occurrence and distribution databases (ACCDC 2010). Selection was based on their status (i.e., listed species), affinities for a particular habitat type, and/or representation within or adjacent the Study Area. Appendix C details all the regionally uncommon plant species known to occur within the ELC Study Area and associated transmission corridor for Southeastern Labrador, along with the typical habitats and general suitability of ELC Habitat Types for those species.

The habitat preferences for the majority of species were derived from a variety of sources, including Hultén (1958); Fernald (1970), Scoggan (1978), Cody and Britton (1989), Flora of North America Editorial Committee (1993, 2002, 2006, 2007), Meades et al. (2000) and Meades (2010). Additional recently-available information from other sources (C. Hanel, pers. comm.) was obtained during the course of the study and was incorporated into this report. Since habitat preferences of plant species can change with latitude, sources of habitat information derived from areas close to Labrador were used preferentially over sources from more distant locations.

4.2 Results and Analysis

Results are discussed in terms of regionally uncommon plant potential habitat types and sub-unit ratings, and the distribution of "High" and "Very High" potential regionally uncommon plant habitat.

4.2.1 Regionally Uncommon Plant Potential Habitat Type and Sub-Unit Ratings

A summary of the regionally uncommon plant potential (predicted as High, Moderate, and Low), and the relative area (expressed as percent) covered by each rated ELC Habitat Type and sub-unit within the Study Area, is provided in Table 4.1.

Of the 23 ELC Habitat Types and sub-units potentially occurring within the Study Area, only calcareous Exposed Bedrock, calcareous Lichen Heathland and calcareous Hardwood Forest, along with that of riparian sub-units found within other Habitat Types, were identified through modelling as having a High potential to harbor regionally uncommon vascular plant species (Table 4.1). For a more detailed discussion of Habitat Types and sub-units ratings see Section 3.1 of Stantec (2010c).

4.2.2 Distribution of High and Very High Potential Regionally Uncommon Plant Habitat

When specific areas known to contain recorded occurrences of regionally uncommon plant species were combined with that of the modelled potential, a number of areas were predicted to have a High or Very High potential for regionally uncommon plant species. Graphical representations of ELC-based Habitat Types predicted to have High and Very High potential for the regionally uncommon plant species within the ELC Study Area and transmission corridor are presented in Figures 4.1 and 4.2, respectively. A summary of the relative area of the regionally uncommon plant potential (expressed as percent) for the ELC Study Area and transmission corridor is presented in Table 4.2.

Table 4.1 Regionally Uncommon Plant Potential within the ELC Study Area and Transmission Corridor as Modelled for Southeastern Labrador

Habitat Type	Number of Regionally Uncommon Plant Species Potentially Present[1]	Regionally Uncommon Plant Species Potential	Percent of ELC Study Area	Percent of Transmission Corridor
ELC Habitat Types				
Exposed Bedrock	0	Low	0.0	0.0
Exposed Bedrock (c)	5	High	0.1	0.0
Lichen Heathland	0	Low	4.6	4.4
Lichen Heathland (c)	14	High	1.1	1.3
Black Spruce Lichen	0	Low	2.2	1.9
Open Conifer Forest	1	Low	23.6	25.3
Conifer Scrub	0	Low	15.2	16.6
Conifer Scrub (c)	0	Low	2.6	3.4
Coniferous Forest	1	Low	24.3	25.5
Coniferous Forest (c)	1	Low	0.2	0.1
Mixedwood Forest	2	Moderate	0.7	0.4
Mixedwood Forest (c)	2	Moderate	0.0	0.0
Hardwood Forest	2	Moderate	0.1	0.0
Hardwood Forest (c)	6	High	0.0	0.0
ELC Habitat Types				
Wetland	1	Low	20.5	18.7
Wetland (c)	0	Low	0.2	0.2
Burn	0	Low	0.7	0.7
Total	**35**	**n/a**	**96.0**	**98.5**
Non-Habitat Areas and/or Sub-units[2]				
Open Water (rated)[3]			3.3	1.6
Rivers and Streams	5	High	n/a	n/a
Rivers and Streams (c)	0	Low	n/a	n/a
Lakes and Ponds	1	Low	n/a	n/a
Lakes and Ponds (c)	0	Low	n/a	n/a
Sea Shore	0	Low	n/a	n/a
Sea Shore (c)	0	Low	n/a	n/a
Clouds and Shadow[4]	n/a	Low	0.5	0.0
Exposed Earth/Anthropogenic[4]	n/a	Low	0.1	0.0
Exposed Earth/Anthropogenic/Cutblock[4]	n/a	Low	0.0	0.0
Total	**6**	**n/a**	**3.9**	**1.6**

Note: Rounding errors less than 1 percent may occur
n/a = not applicable
(c) = with calcareous substrate
1 = habitat affinities for identified species may not be present within the immediate Study Area
2 = extracted from 1:50,000 NRCan Data
3 = rated using ACCDC species element occurrence data
4 = presence / absence of tracked species is not supported by ACCDC species element occurrence data

Figure 4.1 Regionally Uncommon Plant Potential Habitat Summary (ELC Study Area)

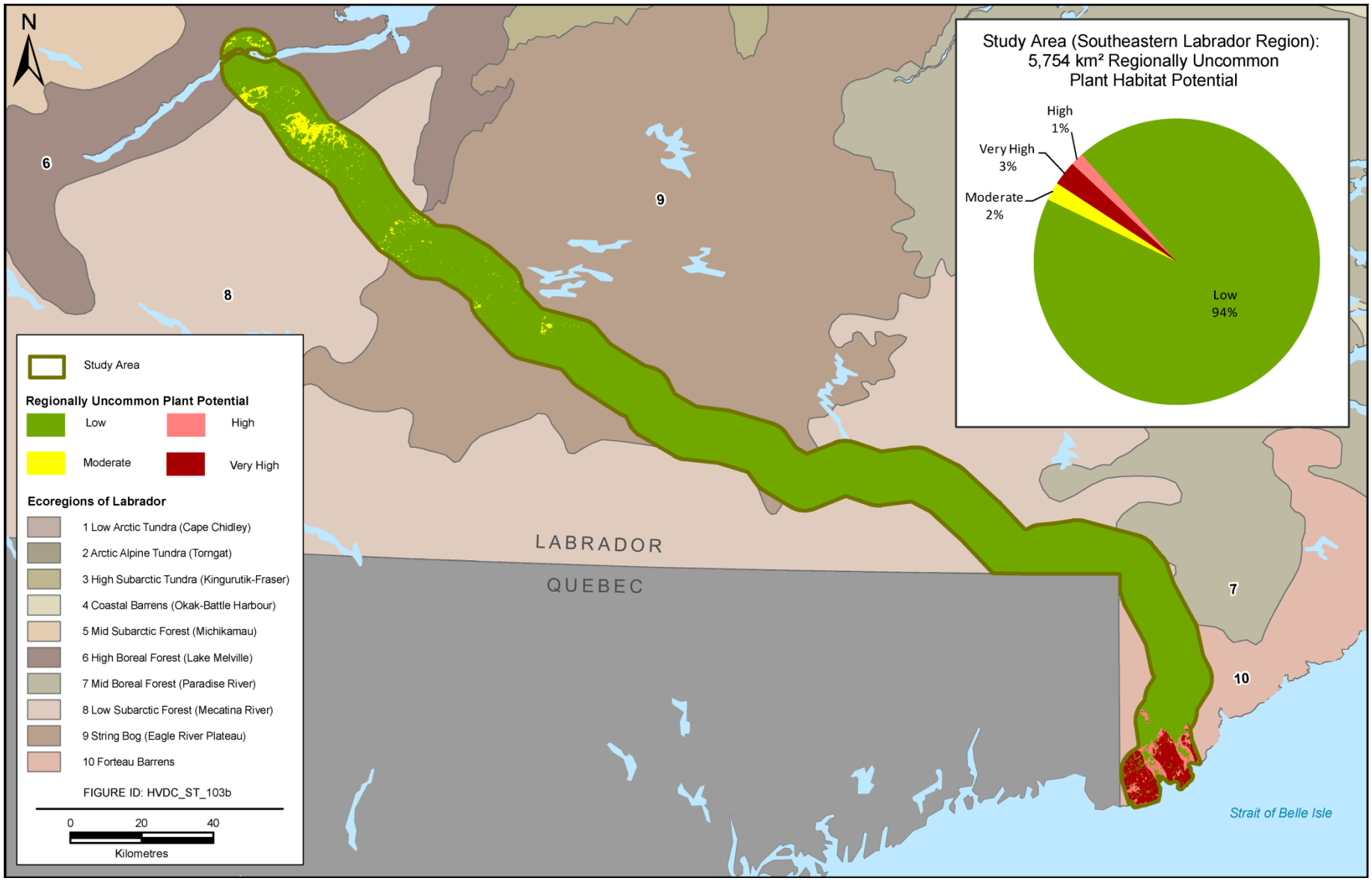


Figure 4.2 Regionally Uncommon Plant Potential Habitat Summary (Transmission Corridor)

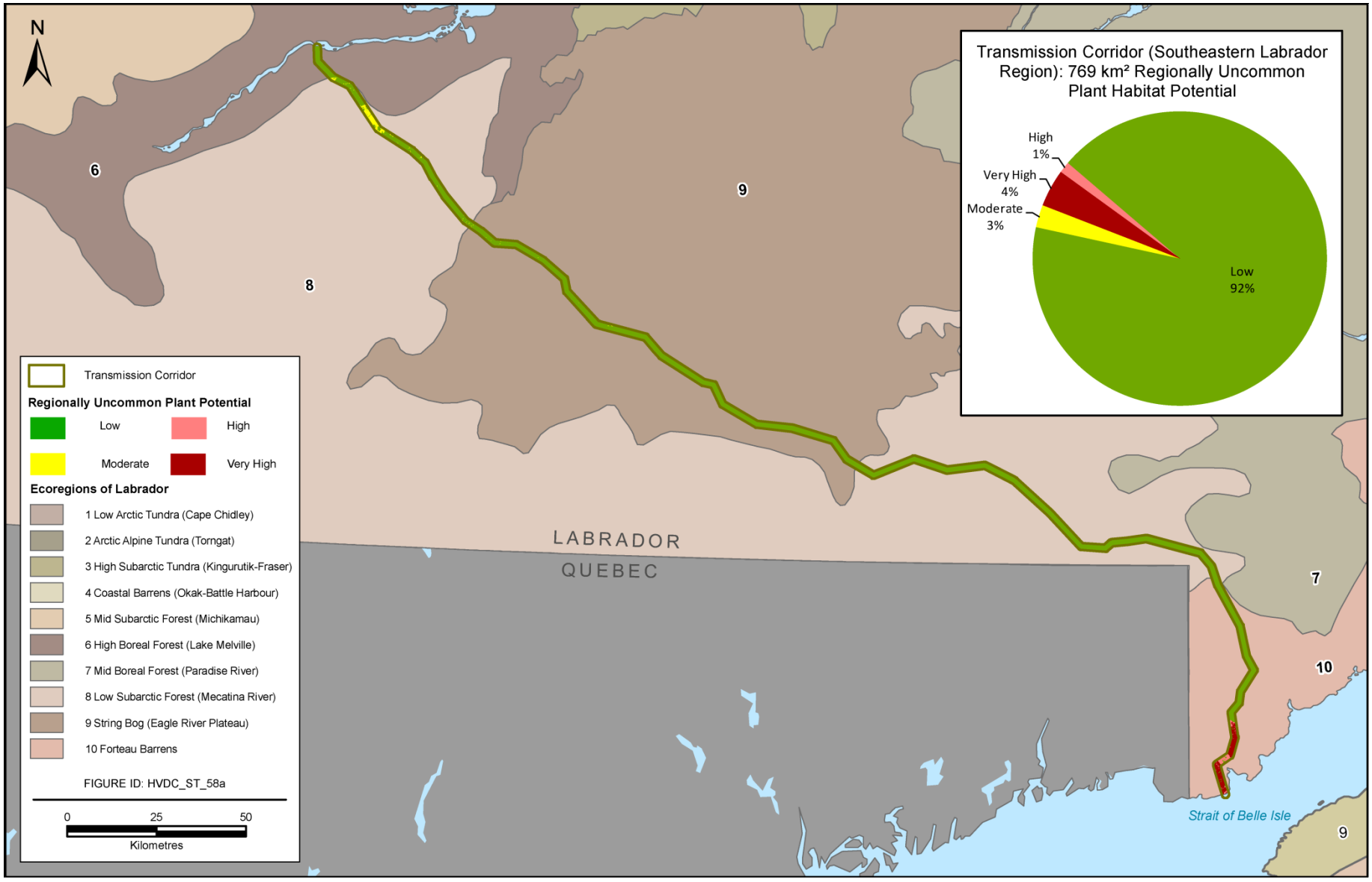


Table 4.2 Regionally Uncommon Plant Potential Habitat (Percent Area) – ELC Study Area and Transmission Corridor

Regionally Uncommon Plant Potential Habitat	Southeastern Labrador	
	ELC Study Area	Transmission Corridor
Low	94%	92%
Moderate	2%	3%
High	1%	1%
Very High	3%	4%
Total	**100%**	**100%**

Habitat Types and/or their sub-units predicted through modelling to have High and Very High potential for regionally uncommon plant species occupy approximately 4 percent of the ELC Study Area. Similarly, High or Very High habitat potential within the 2 km transmission corridor comprises 5 percent of the area.

4.2.3 Summary

Information on regionally uncommon plants and plant potential within the Study Area has been obtained through both a review of existing reports and an update of the ELC-based habitat model. The information sources reviewed include those presented in Stantec (2010c), the TLH-3 (Cartwright Junction to Happy Valley-Goose Bay) EIS and associated reports and other sources.

Regionally uncommon and/or listed plants are known within the Study Area, with the majority of documented occurrences (ACCDC 2010) appearing in transient and transitional habitats, microhabitats and/or areas of atypical landscape features (e.g., exposed, frost-heaved, limestone-derived soils) within the extreme northwestern and southeastern portions of the Study Area. Modelling included a total of 20 identified plant species to estimate the extent and distribution of potential regionally uncommon plant habitat within the Study Area.

Regionally Uncommon Plant Potential Model

Results of the regionally uncommon plant potential model, as completed for the Study Area, are reflective of changes in scarcity rankings for those species identified within the previously-assessed corridor option. Based on the results of the updated ELC model, regionally uncommon plant potential mapping was completed for the Study Area. Maps were colour-coded to reflect habitat potential and indicate the percentage of identified Low, Moderate, High and Very High habitat available within the ELC Habitat Types that comprise the Study Area.

The only High potential Habitat Types identified through modelling were calcareous Exposed Bedrock, calcareous Lichen Heathland and calcareous Hardwood Forest (along with riparian sub-units found within other Habitat Types). These Habitat Types are generally limited in extent and comprise only a small portion of the ELC Study Area (1.1 percent) and the 2 km wide transmission corridor (1.3 percent).

When combined with the areas known to have regionally uncommon plants, the area rated as having High and Very High potential increases to approximately 4 percent and 5 percent for the ELC Study Area and transmission corridor, respectively.

Combining the information in Table 4.1 with that of known regionally uncommon plant occurrence records produces the final potential ratings for ELC Habitat Type polygons (see Appendix C). Two broad classes, Low and Moderate potential, dominate the Study Area. High and Very High potential habitats, which are of minor occurrence, are generally restricted to opposite ends of the Study Area. The lack of distinction between Low and Moderate classes in Labrador is likely due in part to the low number of regionally uncommon plants recorded in this area, which necessitated a narrow range between classes.

Protected "Listed" Species

Listed plant species are described in detail in Section 4.2 of Stantec (2010c). A listed plant, in this context, refers to those species designated as protected under *SARA* and/or *NLESA*.

A single "listed" plant species, Fernald's Milk-vetch, protected under *SARA* (Special Concern) and *NLESA* (Vulnerable), has been identified within the Study Area. Recorded occurrences of Fernald's Milk-vetch are known primarily from the SOBI region, in the areas of Battery Trail and Red Cliffs, east of L'Anse-au-Loup; at Pointe Amour near L'Anse Amour; and in proximity to Forteau Bay on the southeast coast of Labrador and at Blanc Sablon, Quebec (ACCDC 2010).

Further information on listed plant species that may potentially interact with the Project are addressed in other relevant baseline studies prepared for the Project's EA.

5.0 TIMBER RESOURCES

The purpose of this section is to analyze and describe the existing timber resources within the transmission corridor, as well as to estimate the likely quantities of timber resources that will be required to be removed or otherwise affected as a result of clearing along the eventual right-of-way.

5.1 Approach and Methods

Methodologically, the approach used in the original Component Study (Stantec 2011) for the analysis of timber resources within the previously-identified transmission corridor and 60 m wide hypothetical cleared right-of-way was also applied to this supplementary report.

5.2 Results and Analysis

The following sections present the results of the timber resources inventory, as completed for the transmission corridor (Muskrat Falls to SOBI). The study's results are provided through a series of tables, summary text and figures. Information is provided on the available forest landbase and calculated gross merchantable timber volumes for the Southeastern Labrador geographic region and the various Ecoregions that comprise that portion of the Study Area, as well as by Forest Management District (FMD) and for the Project as a whole.

The Muskrat Falls transmission corridor traverses four Ecoregions; however, as previously noted and explained (Section 2.2 of Stantec 2011), forestry inventory data, and therefore merchantable timber occurring in Southeastern Labrador, is only available for FMD 19A and exclusively within the High Boreal Forest (Lake Melville) and the Low Subarctic Forest (Mecatina River) Ecoregions. The landbase summary for this region covers the northwestern portion of the transmission corridor, with the remainder of the area unavailable for landbase classification. The gross merchantable volume (GMV) calculations for Southeastern Labrador are for softwoods only, the majority of which occurs within the Low Subarctic Forest Ecoregion (Figure 5.1).

The total GMV within the transmission corridor for Southeastern Labrador is estimated at 706,207.0 m^3 (Table 5.1). The volume that would be harvested or otherwise altered as a result of the clearing of a hypothetical 60 m right-of-way down the centreline of the corridor is estimated at 21,659.3 m^3, or approximately 3 percent of the 706,207.0 m^3 of available merchantable timber within the corridor (Table 5.1).

Figure 5.1 Available Forest Landbase Summary (Transmission Corridor)

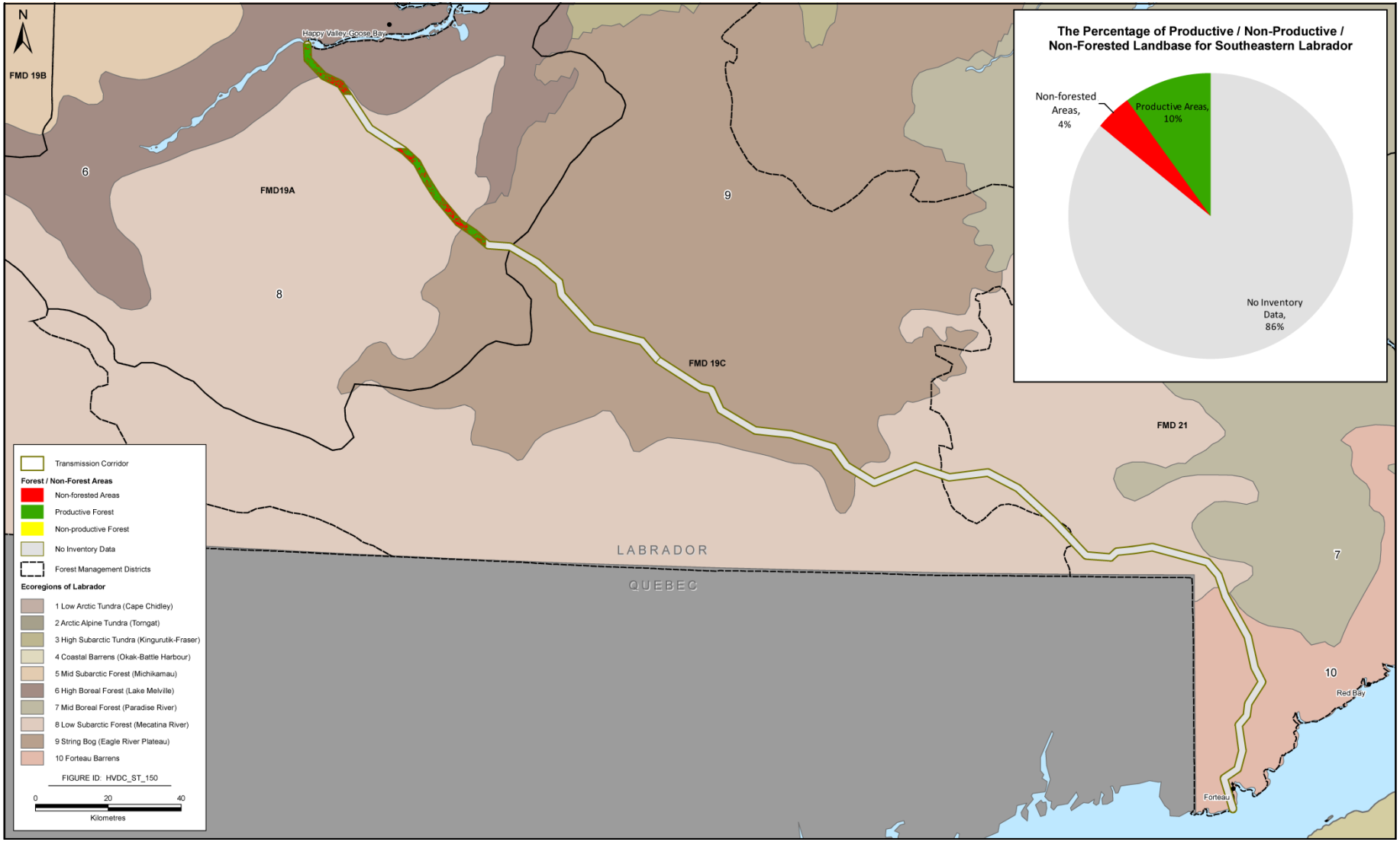


Table 5.1 Gross Merchantable Timber Volume Summary

Ecoregion	Gross Merchantable Volume - Softwood [1]
Transmission Corridor (2 km wide)	
Forteau Barrens	ND
High Boreal Forest (Lake Melville)	281,946.8
Low Subarctic Forest (Mecatina River)	424,260.2
String Bog (Eagle River Plateau)	ND
Total	**706,207.0**
Right-Of-Way (60 m wide, Hypothetical)	
Forteau Barrens	ND
High Boreal Forest (Lake Melville)	8,582.2
Low Subarctic Forest (Mecatina River)	13,077.1
String Bog (Eagle River Plateau)	ND
Total	**21,659.3**

[1] The GMV calculations for Labrador are for softwoods only and were calculated using NLDNR yield-based methodology, as stand and stock table data are not presently available for use in this analysis. The landbase deductions for Labrador were consistent with those applied in Newfoundland. Volume of Softwood = Volume of Merchantable Timber (in m^3). Provincial Forest Inventory data, and therefore estimates of timber volume, are presently unavailable for FMD 21, which encompasses the Forteau Barrens Ecoregion of Labrador. Similarly, inventory data for the String Bog (Eagle River Plateau) Ecoregion of Labrador, as contained within FMD 19C, are also unavailable (See Stantec (2011) Section 2.0 Approach and Methods for further information on application of GMV calculation procedures)
Note: Rounding errors less than 1 percent may occur in final totals

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