

# LABRADOR – ISLAND TRANSMISSION LINK ENVIRONMENTAL ASSESSMENT

**Marine Environment:  
Fish and Fish Habitat, Water Resources  
Component Study**

*Volume 1 of 2: Strait of Belle Isle*

June 2011



**LABRADOR – ISLAND TRANSMISSION LINK ENVIRONMENTAL ASSESSMENT**  
***Environmental Component Studies: Introduction and Overview***

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

The Project was registered under the Newfoundland and Labrador *Environmental Protection Act (NLEPA)* and the *Canadian Environmental Assessment Act (CEAA)* in January 2009 (with subsequent amendments and updates), in order to initiate the provincial and federal environmental assessment (EA) processes. Following public and governmental review of that submission, an Environmental Impact Statement (EIS) was required for the Project. The EIS is being developed by Nalcor Energy, in accordance with the requirements of both *NLEPA* and *CEAA* and the *EIS Guidelines and Scoping Document* issued by the provincial and federal governments.

In support of the Project's EIS, Nalcor Energy has undertaken a series of environmental studies to collect and/or compile information on the existing biophysical and socioeconomic environments and to identify and assess potential Project-environment interactions. This environmental study program has included field surveys, associated mapping and analysis, environmental modeling, and the compilation and analysis of existing and available information and datasets on key environmental components. This report comprises one of these supporting environmental studies.

A general guide to these Environmental Component Studies, some of which are comprised of multiple associated reports, is provided on the opposite page.

The information reported herein will be incorporated into the Project's EIS, along with any additional available information, to describe the existing (baseline) environmental conditions and/or for use in the assessment and evaluation of the Project's potential environmental effects and in the identification and development of mitigation.

This study focuses on the relevant aspects of the proposed Project – including the proposed and alternative HVdc transmission corridors, marine cable crossings, and/or other Project components and activities – as known and defined at the time that the EA process was initiated and/or when the study commenced. Project planning and design are ongoing, and as is the case for any proposed development, the Project description has and will continue to evolve as engineering and EA work continue. The EIS itself will describe and assess the specific Project components and activities for which EA approval is being sought, and will also identify and evaluate other, alternative means of carrying out the Project that are technically and economically feasible as is required by EA legislation.

The EIS and these Component Studies will be subject to review by governments, Aboriginal and stakeholder groups and the public as part of the EA process.

<b>LABRADOR-ISLAND TRANSMISSION LINK: ENVIRONMENTAL COMPONENT STUDIES (CSs)</b>		
1) Vegetation CS	Report 1a Ecological Land Classification	Report 1b Wetlands Inventory & Classification
	Report 1c Regionally Uncommon Plants Model	Report 1d Timber Resources
	Report 1e Vegetation Supplementary Report	
2) Avifauna CS		
3) Caribou & Other Large Mammals CS	Report 3a Caribou & Their Predators	Report 3b Moose & Black Bear
4) Furbearers & Small Mammals CS		
5) Marine Environment: Fish & Fish Habitat, Water Resources CS	Report 5a Marine Fish: Information Review	Report 5b Marine Flora, Fauna & Habitat Survey
	Report 5c Marine Habitats (Geophysical) Survey	Report 5d Water, Sediment & Benthic Surveys
	Report 5e Marine Surveys: Electrode Sites	Report 5f Marine Surveys: Supplementary
6) Freshwater Environment: Fish & Fish Habitat, Water Resources CS		
7) Marine Environment: Marine Mammals, Sea Turtles & Seabirds CS	Report 7a Marine Mammals, Sea Turtles & Seabirds: Information Review	Report 7b Marine Mammal & Seabird Surveys
	Report 7c Ambient Noise & Marine Mammal Surveys	
8) Species of Special Conservation Concern CS		
9) Marine Environment & Effects Modelling CS	Report 9a Strait of Belle Isle: Oceanographic Environment & Sediment Modelling	Report 9b Strait of Belle Isle: Marine Sound Modelling - Cable Construction
	Report 9c Electrodes: Environmental Modelling	
10) Historic & Heritage Resources CS		
11) Socioeconomic Environment: Communities, Land & Resource Use, Tourism & Recreation CS	Report 11a Communities, Land & Resource Use, Tourism & Recreation	Report 11b Current Levels of Accessibility Along the Transmission Corridor
12) Socioeconomic Environment: Aboriginal Communities & Land Use CS		
13) Socioeconomic Environment: Marine Fisheries in the Strait of Belle Isle CS		
14) Viewscapes CS		
<b>Environmental Component Study Required Under the EIS Guidelines: Comprising Reports (Shaded cells above)</b>		
Avifauna: 2, 7a, 7b	Furbearers: 4	
Caribou (and Predators): 3a	Timber Resources: 1d	
Water (Quality and Quantity): 5a, 5d, 5e, 5f, 6	Marine and Freshwater Fish and Fish Habitat: 5, 6, 7, 13	
Species at Risk: 8	Historic Resources: 10	
Viewscapes: 14	Socioeconomics: 11, 12, 13	
<b>Environmental study reports submitted as additional background information: 1a, 1b, 1c, 1e, 3b, 9</b>		



# Labrador – Island Transmission Link

## Marine Environment: Fish and Fish Habitat, Water Resources Component Study

### Preface

This Component Study has been prepared and submitted as part of the Environmental Assessment (EA) of the proposed **Labrador-Island Transmission Link**.

This submission (June 2011) is comprised of five (5) associated study reports:

**1) Marine Fish and Fish Habitat in the Strait of Belle Isle: Information Review and Compilation** (November 2010): A summary of existing and available information on fish and fish habitat in the Strait of Belle Isle, intended to supplement the data collected through the marine surveys outlined below.

**2) Marine Flora, Fauna, and Habitat Survey - Strait of Belle Isle Submarine Cable Crossing Corridors: 2008 and 2009** (February 2010): Marine video surveys in 2008 and 2009 along two identified cable corridors to gather information on marine flora, fauna, and associated depth and substrate distributions, as well as a shoreline survey of four potential cable landing points.

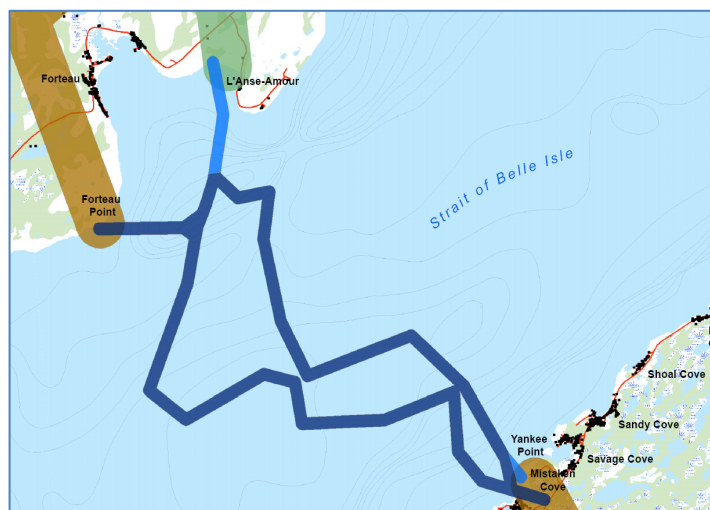
**3) Marine Habitats in the Strait of Belle Isle: Interpretation of 2007 Geophysical (Sonar) Survey Information for the Submarine Cable Crossing Corridors** (January 2010): Analysis of sidescan sonar imagery acquired in 2007 to identify and classify the seafloor marine habitats (substrate types and water depths) within the two submarine cable corridors across the Strait of Belle Isle.

**4) Strait of Belle Isle Submarine Cable Crossing Corridors: Marine Water, Sediment and Benthic Surveys** (March 2011): A 2010 marine survey to collect information on existing water and sediment quality and benthic invertebrates along the two submarine cable corridors.

**5) Marine Water, Sediment, Benthos and Nearshore Habitat Surveys: Potential Electrode Sites** (March 2011): A 2010 marine survey to collect information on water and sediment quality, benthic invertebrates, bathymetry, substrate, macroflora and macrofauna distribution and backshore characteristics at two proposed shore electrode sites for the Project.

The original Project concept for the proposed Strait of Belle Isle cables saw the preliminary identification of potential cable landing sites at Forteau Point, Labrador and Mistaken Cove, Newfoundland (with alternatives at L'Anse Amour and Yankee Point in Labrador and on the Island, respectively).

From there, multiple cables would be placed in two marine corridors across the Strait, as illustrated in the map provided.



These potential corridors and landing sites were the focus of the marine surveys that are listed and described above, and which are included in this Component Study submission (specifically, Reports 2 to 4).

Since that time, Nalcor Energy has continued with its Project planning and engineering work, and in doing so, has proceeded to evaluate other possible design options and alternatives. The Proponent is continuing to focus on Forteau Point as the likely Labrador cable landing site. On the Newfoundland side of the Strait of Belle Isle, Shoal Cove has also been identified as a possible site.

If these cable landing site options were to be finalized, on-land horizontal directional drilling technology may be used to install the cables from these locations, out to and under the Strait for up to several kilometers. From there, the cables would be placed on the seabed and protected with rock berms.

With this option, the cables would be placed within one marine corridor (rather than two) across the Strait. This corridor option is essentially an amalgamation of the two marine cable corridors described above - utilizing portions of each corridor along with a new short segment in to Shoal Cove, as illustrated in the map.



Much of the information provided in the above described studies therefore remains equally applicable to the Forteau Point – Shoal Cove marine corridor option as well, either because it is still within this marine corridor option, or as additional and relevant information on the marine environment in the general Project area.

Nalcor Energy is undertaking a marine survey program in the Strait of Belle Isle in 2011 to collect similar water and sediment quality, benthic invertebrate and marine flora, fauna and habitat information for the new marine corridor segment to Shoal Cove – specifically, the less than 10 km long corridor segment that extends from the original corridors and in to the Shoal Cove area. That information will be provided as a Supplementary Report to this Component Study later in 2011.

In the meantime, however, the above listed study reports are being submitted to commence and facilitate the review of this material under the EA process.

The environmental information presented in the *Marine Environment: Fish and Fish Habitat, Water Resources Component Study* will be incorporated and used in the Project's eventual Environmental Impact Statement (EIS), which will provide a summary description of the existing environment and an environmental effects assessment for the proposed Project.