



**Eastern Newfoundland
Strategic Environmental Assessment**

Scoping Document

Prepared by:

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Table of Contents

1.0	Introduction.....	1
2.0	Background.....	3
3.0	Objectives	4
4.0	Past and Present Oil and Gas Activity	5
5.0	Scope of SEA.....	6
5.1	Spatial and Temporal Boundaries.....	6
5.2	Factors and Issues to be Considered.....	7
5.2.1	Physical Environment.....	9
5.2.2	Biological Environment	9
5.2.3	Human Activities.....	11
5.2.4	Project-Environment Interactions.....	12
5.2.5	Environment-Project Interactions.....	14
5.3	Conclusions and Recommendations	14
5.4	Consultations.....	15

1.0 Introduction

This document describes the scope of a strategic environmental assessment (SEA) for offshore petroleum exploration and production related activities in the marine area east of the island of Newfoundland. It outlines the factors to be considered in the SEA, the scope of those factors and guidelines for the preparation of the SEA report.

The Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) has the responsibility pursuant to the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act* and the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act* (herein referred to as the *Accord Acts*) to ensure that offshore oil and gas activities proceed in an environmentally responsible manner. In 2002, the C-NLOPB made the decision to conduct SEAs in those areas of the Newfoundland and Labrador Offshore Area that may have the potential for offshore petroleum exploration activity but that were not subject to recent SEA nor to recent and substantial project-specific environmental assessments and to review SEAs every five years, or when an issue of major importance arises, to determine whether an update is required.

Figure 1 depicts the proposed Eastern Newfoundland SEA Study Area. The Study Area includes the area covered in the Orphan Basin SEA (LGL 2003) and in keeping with the C-NLOPBs commitment to regularly update SEAs, updating that information as necessary, along with areas generally to the south of that area that have not been subject to an SEA. The report may include consideration, if applicable, of potential effects on Valued Ecosystem Components (VECs) in adjacent areas. The boundaries may vary with each VEC and the factors considered.

The Scoping Document was drafted by C-NLOPB staff with the assistance of a Working Group with representation from federal and provincial government agencies, local Economic Regional Development Board, the fishing industry, and non-governmental organizations.

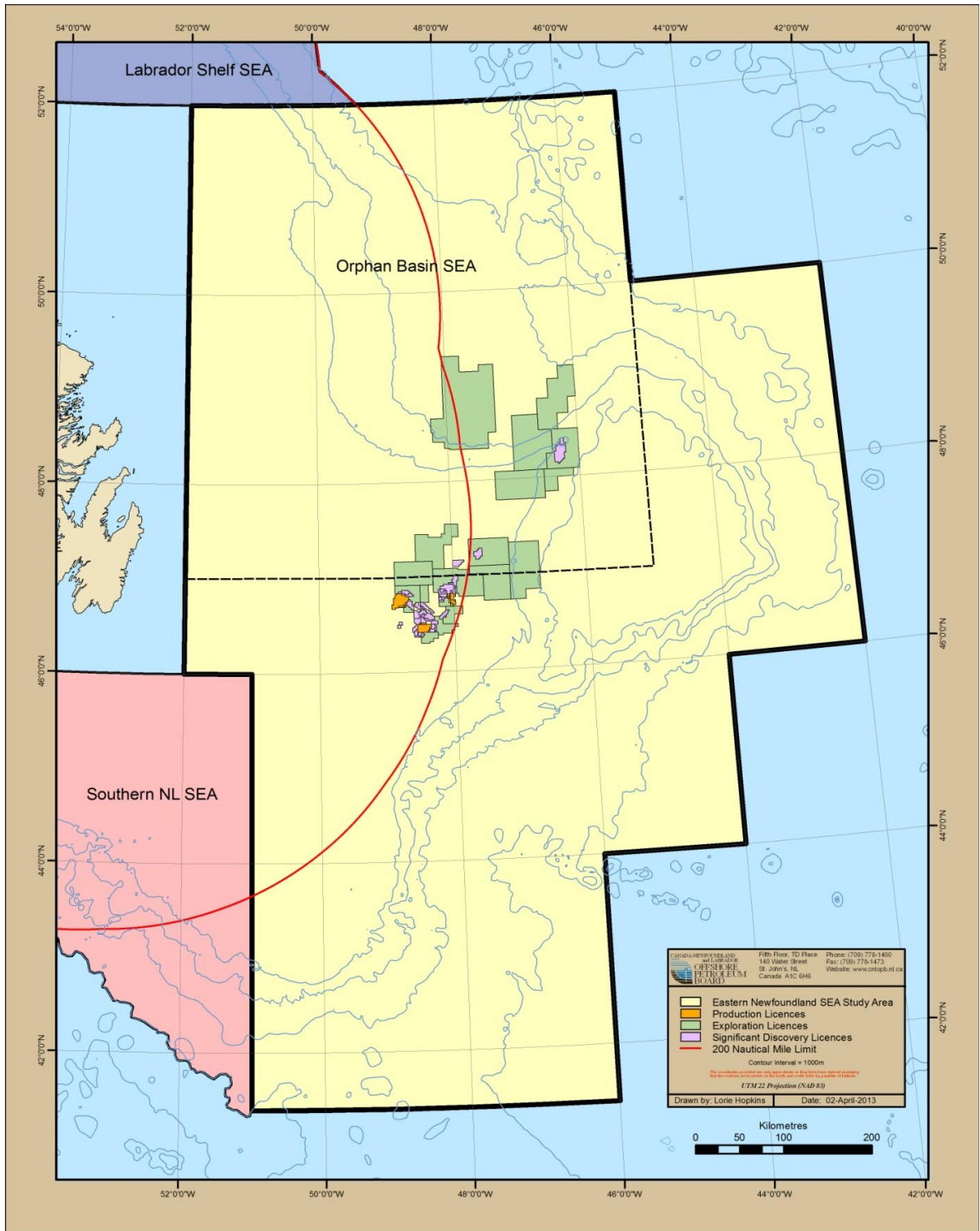


Figure 1 – Eastern Newfoundland SEA Study Area

2.0 Background

Strategic environmental assessment is defined as “the systematic and comprehensive process of evaluating the environmental effects of a policy plan or program, and its alternatives”

(Government of Canada Cabinet Directive, 2010). SEA incorporates a broad-based approach to environmental assessment (EA) that examines the environmental effects which may be associated with a plan, program or policy proposal and that allows for the incorporation of environmental considerations at the earliest stages of program planning. SEA typically involves a broader-scale environmental assessment (EA) that considers the larger ecological setting, rather than a project-specific EA that focuses on site-specific issues with defined boundaries.

Additional information regarding SEA may be found on the Canadian Environmental Assessment Agency web site at <http://www.ceaa-acee.gc.ca>.

In this particular case, the strategic decision to be informed by the SEA is the potential future issuance by the C-NLOPB of one or more exploration licences pursuant to the *Accord Acts*, in the SEA Study Area, and consequent petroleum-related activities that may occur offshore. An exploration licence confers:

1. The right to explore for, and the exclusive right to drill and test for petroleum;
2. The exclusive right to develop those portions of the offshore area in order to produce petroleum; and
3. The exclusive right, subject to compliance with the other provisions of the Accord Act, to apply for a production licence.

Activities associated with exploration licences may include: conduct of seismic surveys and other geophysical surveys, drilling of wells (either exploration or delineation); and well abandonment. If one or more exploratory drilling programs successfully identify petroleum deposits with commercial potential, production activities may follow. Production activities may involve: drilling of wells (delineation, development/production, and injection wells); installation and operation of subsea equipment; installation and operation of production facilities; and production abandonment activities. However, the nature and scale of potential production activities is usually very difficult to predict in any but the most general of terms.

Each of these activities requires the specific approval of the Board, including a project-specific assessment of its associated environmental effects, either in accordance with the *Canadian Environmental Assessment Act* 2012 (CEA Act), or the *Accord Acts*. The SEA will not replace this requirement for a project-specific EA. The SEA will provide an overview of the existing environment, discuss in broader terms the potential environmental effects associated with offshore oil and gas activities in the SEA Study Area, identify knowledge and data gaps, highlight issues of concern, and make recommendations for mitigation and planning, and where applicable, future EAs. Information from the SEA will assist the Board in determining whether exploration rights should be offered in whole or in part within the area and may identify general restrictive or mitigative measures that should be considered for application to exploration activities.

3.0 Objectives

For the Eastern Newfoundland Offshore Area, the SEA will:

- Provide an overview of the existing environment in the SEA Study Area;
- Generally describe typical offshore oil and gas exploration activities;
- Generally describe typical offshore oil and gas production activities (Potential production scenarios will be considered at a generic level, to the degree possible);
- Generally describe, to the degree deemed appropriate, established production activities of the Jeanne d'Arc Basin;
- Describe and evaluate potential environmental effects associated with offshore oil¹ and gas exploration and production activities;
- Consider the potential cumulative effects on the marine environment of typical offshore oil and gas activities with other potential activities;
- Identify knowledge and data gaps;
- Highlight issues that may be of concern;

¹ The terms 'offshore' or 'offshore area' refer to the jurisdictional area of the C-NLOPB, as defined in the *Canada-Newfoundland Atlantic Accord Implementation Act* to mean "those submarine areas lying seaward of the low water mark of the Province and extending, at any location as far as (a) any prescribed line, or (b) where no line is prescribed at that location, the outer edge of the continental margin or a distance of two hundred nautical miles from the baselines from which the breadth of the territorial sea of Canada is measured, whichever is greater."

- Map and identify known areas of interest (AOI), VECs and sensitive/special areas, including Ecologically and Biologically Significant Areas (EBSAs), Vulnerable Marine Ecosystems (VMEs) (e.g. VME elements and species) and Important Bird Areas (IBAs);
- Identify opportunities to add to the knowledge base of the region;
- Make recommendations for general mitigative measures that should be employed during offshore petroleum related activities;
- Identify general restrictive or monitoring, measures, as appropriate, that may be required for future offshore petroleum activities;
- Assist the Board in determining whether exploration rights should be issued in whole or in part in the SEA Study Area; and
- Assist in the scoping and focus of subsequent project-specific environmental assessments.

4.0 Past and Present Oil and Gas Activity

Past exploration activity in the Eastern Newfoundland SEA Study Area consisted of the collection of approximately 380,000 line km of 2D and 1,645,000 common mid point (CMP) km of 3D data from 1964 to 2012. The most recent work in the area was completed in 2012 by two different companies with 7958 line km of 2D data and 230945 CMP km of 3D data being acquired. Exploration drilling commenced in 1966, with a total of 315 wells drilled between 1966 and 2013.

Within the Eastern Newfoundland SEA Study Area there are four oil producing fields: Hibernia, White Rose, Terra Nova, and North Amethyst. As of February 28, 2013, the four producing fields have produced a total of 1.3 billion barrels (218,386,941 m³) of crude oil since the start of production at Hibernia in November 1997. There are 18 Exploration Licences, 11 Production Licences, and 47 Significant Discovery Licences in the SEA Study Area (see Figure 1).

5.0 Scope of SEA

The SEA will examine the project-environment interactions associated with petroleum exploration and production activities that may occur within the SEA Study Area. The report may include, if applicable, consideration of potential project interactions with VECs in adjacent areas. Exploration activities to be considered in the SEA include: wellsite preparation; exploratory and delineation drilling; seismic survey activities (2D, 3D, vertical seismic profiling, geohazard surveys); geotechnical surveys; and wellsite abandonment. The focus of the SEA will be on activity and interactions of those activities in the offshore area under the jurisdiction of the C-NLOPB.

The extent of exploration activity will be estimated based on historical activity in the area and the potential for future exploration activity, to the degree that can be foreseen. Generic types of production facilities, with the exception of the established production areas of the Jeanne d'Arc Basin, that can be employed in the SEA Study Area will be identified and their potential project-environment interactions discussed. To the extent possible, released Environmental Effects Monitoring (EEM) data should be used to describe specific project-environment interactions in established production areas.

5.1 Spatial and Temporal Boundaries

The spatial boundary for petroleum related activities to be considered in the SEA Study Area is shown in Figure 1. The SEA Study Area incorporates the area recently covered in the Orphan Basin SEA along with portions of the Carson Basin and Flemish Pass offshore areas that have not been subject to an SEA. The boundaries for the Study Area were chosen based on historical exploration activity in the area as well as a consideration of administrative boundaries.

The SEA will include the offshore petroleum exploration activities and, to the extent possible, production activities, as described in the preceding section, which may occur in the SEA Study Area within the next ten years. The SEA will be reviewed in at least five years to determine whether an update is required.

5.2 Factors and Issues to be Considered

A “VEC” approach to focus the SEA will be used. A definition of each VEC (including components or subsets thereof) will be identified and the rationale for its selection provided. VECs will be determined based on consultations with interested stakeholders, the public and regulatory agencies. At a minimum, VECs will include: fish and fish habitat (including benthic habitat, deep-water corals, shallow water plant communities); commercial fisheries, marine mammals and sea turtles; marine birds; species at risk; species that are key to sustaining the structure and function of that particular ecosystem; and sensitive areas (important or special areas), including EBSAs, VMEs and IBAs. Within each of these general categories, species of importance to the SEA Area (e.g., species-specific commercial fisheries, species of ecological importance, seasonality) will be emphasized. Where applicable, information may be summarized from the 2003 Orphan Basin SEA and from existing environmental assessment reports. Where information is summarized, the reports should be properly referenced, including reference to the section of the report. Where new information is available, the new information should be provided.

The SEA Report will include the following:

- Historical overview of offshore petroleum exploration activity in the Eastern Newfoundland SEA Study Area and a discussion of regional offshore oil and gas activities in the Eastern Newfoundland offshore area;
- Overview of typical offshore petroleum exploration activities (well site surveys, wellsite preparation, vertical seismic profiling, 2D/3D seismic, geotechnical programs, exploration drilling, well abandonment) including methods to carry out these activities with brief description of various types of rigs and vessels and their associated discharges and requirements related to treatment and disposal;
- Brief discussion of production alternatives that could be employed in the Eastern Newfoundland SEA Study Area;
- Description of the physical and biological environments based on existing information and data and identification of relevant data gaps;

- Description of other marine activities in the Eastern Newfoundland SEA Study Area (e.g. commercial fisheries (including pre 1990 historical data), recreational fisheries, aquaculture, marine transportation, marine-based tourism);
- Project-environment interactions of the VECs will be identified and qualitatively assessed;
- Identification of general mitigative measures and monitoring measures that might be considered for offshore activities. Specific or ‘non-typical’ mitigations that may be required to address specific concerns will be highlighted
- Identification of areas requiring enhanced, or ‘non-typical’ mitigation measures;
- General discussion of types and probabilities of accidental events, effects and mitigation of potential accidental events, as well as malfunctions associated with offshore oil and gas exploration activity;
- General discussion of potential cumulative effects on the marine environment associated with multiple activities in the Eastern Newfoundland SEA Study Area based on an estimate of potential exploration activity derived from historical offshore petroleum activities in the area and future trends; and
- For each factor identified below, discuss potential planning implications/considerations which may have to be considered in site-specific EAs (i.e., need for additional data, special mitigations).

Detailed ‘effects assessment analyses’, including determination of significance pursuant to CEAA 2012, will be determined at the project-specific environmental assessment phase and will not be undertaken in the Eastern Newfoundland SEA.

The Eastern Newfoundland SEA will consider the following environmental factors and issues, as a minimum, with emphasis upon factors unique to the SEA Study Area. Sufficient supporting information will be provided, or referenced and summarized if it already exists in publicly available publications, and substantive uncertainties or information gaps identified. For the existing Orphan Basin SEA Area, the following information is to be updated, where new or updated information is available.

5.2.1 Physical Environment

A general description of physical environmental factors in the Eastern Newfoundland SEA Study Area will be presented, with emphasis upon the following:

- Climate change;
- Unexploded ordinances (historical overview, location);
- Meteorology and climatology (extreme events, means and seasonal variations);
- Geology, including a discussion of the potential for seismicity/geohazard events, and their impacts on slope stability;
- Oceanography (e.g. surface, mid-ocean, deep water current regime, wind, waves, extreme events); and
- Sea ice, ice islands, and iceberg conditions (historical overview, seasonal variability and current trends).

A description of data sources, whether modelled or measured, in-situ or satellite should be provided. Information regarding the data such as reference height and measurement heights for wind speed should also be included.

5.2.2 Biological Environment

An overview of the biological environment in the Eastern Newfoundland SEA Study Area will be presented, with emphasis upon identified VECs. This description will include but not be limited to fish and fish habitat, marine mammals and sea turtles, seabirds, species at risk, and sensitive/special areas. Data gaps will be identified. The following list provides more detailed information that will be captured within the Eastern Newfoundland SEA Study Area.

- Plankton
- Benthos
 - Description of deep water corals.
- Benthic Invertebrates (including commercial shellfish species)
- Finfish and Marine Invertebrates:
 - The identification of important spawning, feeding, migratory and essential habitats;

- Description of shallow water plant communities;
- Summaries of finfish and marine invertebrate habitat, particularly those supporting fisheries;
- Summaries of each species, including critical life stages.
- Seabirds
 - Overview of species present in the Eastern Newfoundland SEA Study Area and both their seasonal and geographical distribution.
 - Description of critical life stages, lifestyles, life histories.
- Marine Mammals and Sea Turtles
 - General description of marine mammals and sea turtles that may be present.
 - Distribution of species, including lifestyles, life histories and important areas and migration patterns.
- Species at Risk
 - Description of Species at Risk, and critical habitat, as described in the *Species at Risk Act*, and those under consideration by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), that have been identified or are believed likely to be present in the Eastern Newfoundland SEA Study Area.
 - Monitoring and mitigation, consistent with recovery strategies/action plans (endangered/threatened) and management plans (special concern) for species.
 - A description of critical habitat (as defined under SARA), if applicable to the Eastern Newfoundland SEA Study Area.
- Sensitive/Special Areas

For the purposes of the Eastern Newfoundland SEA Study Area, the term **sensitive/special area** is defined as:

- An area that is afforded some level of protection under federal or provincial legislation (i.e., National Parks, ecological reserves, Oceans Act Marine Protected Areas (MPAs), National Marine Conservation Areas (NMCAs), National Historic Sites, fishery management areas, Marine Wildlife Areas

(MWA));

- An area that may be under consideration for such legislative protection (i.e. potential or proposed coastal or marine protected areas); and
- An area that is known to have particular ecological or cultural importance and is not captured under federal or provincial regulatory frameworks (e.g., corals; spawning, nursery, rearing, or migratory areas; areas of high productivity, rare or unique habitats, IBAs, EBSAs, VMEs, areas of traditional harvesting activities).

The description of an area as a **sensitive/special area** within the Eastern Newfoundland SEA Study Area, in itself, does not automatically imply that this area will require the application of non-typical mitigations or restriction on activities. The timing, spatial extent, and nature of proposed oil and gas activities, in addition to mitigation measures to avoid or minimize risks to the marine environment (including marine biodiversity and its components) prescribed by legislation, policy instruments and generally agreed standards, will determine the level of restriction or mitigation that will be required.

5.2.3 Human Activities

The Eastern Newfoundland SEA Report will provide a description, where applicable, of the following:

- Commercial, Recreational and Aboriginal Fisheries:
 - Overview of historical (including pre 1990 data), present, and potential future commercial fisheries, including species under moratoria;
 - Description of commercial, recreational and aboriginal fisheries. This description should include a summary of historical fisheries;
 - General description of fishery activity including species, location, vessel size, gear type, timing; and
 - Aquaculture activities, if present, should be described.
- General overview of marine recreational and tourism activities in the Eastern Newfoundland SEA Study Area
- Submarine/Underwater cables

- Overview of marine commercial traffic activity within and through the Eastern Newfoundland SEA Study Area
- Potential for Canadian Naval exercises.

5.2.4 Project-Environment Interactions

For each of the identified VECs, a description of the interactions of petroleum exploration and production activities with the environment will be presented. Proposed activities include:

- Seismic data collection
- Exploratory/delineation drilling (e.g., mobile offshore drilling unit (semi-submersible or jack-up rig), and ancillary activities
- Production activities
- Vessel traffic (e.g., supply vessels, seismic vessels, helicopters, shuttle tankers (for production activities))
- Well abandonment operations

Typical project-environment interactions associated with generic petroleum production activities will be briefly discussed for completeness. Potential project interactions include, but are not limited to the following:

- Noise/disturbance (e.g., seismic survey activities, noise from drilling installations) issues on marine mammals, sea turtles, seabirds, commercial fish/shellfish, and sensitive life stages
- Benthic habitat disturbance
- Coastal and offshore interactions (including fish/bird habitats, sensitive areas)
- Air quality issues (may include a discussion of typical greenhouse gas emissions associated with typical drilling and production operations)
- Operational discharges and the effects on water and sediment quality
- Accidental events – including offshore and coastal interactions, sensitive areas, mitigations
- Conflict with commercial, recreational, and aboriginal fisheries use of area and loss of

access

- Conflict with human use and marine commercial traffic of area
- Icing of ships and rig superstructure during winter storms
- Attraction of seabirds to lights/flares on structures or vessels
- Consideration of potential conflict with project activities (including light and noise generated) with tourism operations and the aesthetic and cultural landscape.

Cumulative effects will be examined in consideration of the estimate of potential exploration activity in the Eastern Newfoundland SEA Study Area and mitigation measures identified. Past, ongoing, and planned and reasonably foreseeable exploration and production activities will be included in the cumulative effects and will also consider other non-petroleum activities ongoing in the Eastern Newfoundland SEA Study Area (such as commercial fishing, hunting, marine traffic, tourism operations, and fisheries research surveys).

Mitigation measures currently in practice to reduce or eliminate potential effects will be described for those activities that may affect the environment and VECs. Specific or 'nontypical' mitigations and/or project alternatives that may be required to address specific concerns will be highlighted, in particular, specific mitigations proposed for any sensitive areas identified within the Eastern Newfoundland SEA Study Area. Monitoring and mitigation, specifically related to Species at Risk and consistent with recovery strategies/actions plans (endangered/threatened) and management plans (special concern) will be described. Effects, particularly related to population level, should also be discussed. Residual effects remaining after the application of routine mitigations also will be described.

Data gaps potentially affecting these descriptions that are identified will be described. Where applicable, summary statements stemming from the effects analysis regarding the focus of future EAs should be included.

The effects assessment will not determine likelihood of significance. Significance of effects will be determined during the project-specific environmental assessment process.

5.2.5 Environment-Project Interactions

For exploration and production activities identified, the Eastern Newfoundland SEA Report will include a discussion of the effects of the environment on project activities. These environmental factors may include:

- The occurrence of sea ice, ice islands, and icebergs;
- Temperature, precipitation, currents, storm events; and
- Severe winds and waves (extreme events).

The discussion may include the following:

- Occurrence of extended period of reduced visibility due to fog or snow;
- Extended period of freezing precipitation or freezing spray;
- Extreme water levels due to combined tide, storm surge, and (near shore) wave set-up and run-up;
- Local effects (e.g. down slope wind storm events);
- Future changes in climatic conditions (e.g. storm frequency and intensity, rising surface water temperatures, icebergs); and
- Implication of seismic events (i.e. earthquakes, submarine landslides).

5.3 Conclusions and Recommendations

Based on the information presented in the physical, biological, and human activities environment overview, the description of project-environment interactions and the application of mitigation measures, conclusions will be presented regarding recommended planning approaches for the C-NLOPB to consider in the issuance of exploration licences in the StudyArea. Data gaps with potential to affect the validity of these conclusions will be identified. Sensitive/special areas and other VECs identified during the Eastern Newfoundland SEA process will also be highlighted.

5.4 Consultations

Throughout the development of the Eastern Newfoundland SEA, the C-NLOPB and its contractor(s), with assistance by the Working Group, will consult with the provincial and federal government departments, east coast communities, the fishing industry and local non-governmental organizations. Public open house consultation sessions will be held in St. John's, Marystown, Placentia, Clarenville, and Gander. However, other locations may be identified during the development of the Consultation Plan. Stakeholder meetings will be held in Trepassey, Old Perlican, Bonavista, New-Wes-Valley, Fogo Island, Twillingate, and other surrounding communities that may be identified during the development of the Consultation Plan. These consultation sessions will be concurrent with the preparation of the SEA Report. Information on the SEA process and the 2003 Orphan Basin SEA Report, will be provided and people will be encouraged to discuss issues and concerns that are relevant to the Eastern Newfoundland SEA Study Area and SEA objectives. A separate report providing the results of consultation will be included in the SEA Report. Issues and concerns within the scope of the report will be taken under consideration and incorporated into the Eastern Newfoundland SEA Report. The draft Eastern Newfoundland SEA Report, including the Consultation Report, will be made available to the public on the C-NLOPB website for comment.