

**Strategic Environmental Assessment
Labrador Shelf
Newfoundland and Labrador Offshore Area**

**Scoping Document
DRAFT FOR PUBLIC COMMENT**

**Canada-Newfoundland and Labrador
Offshore Petroleum Board**

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1.0 Introduction

This document describes a scope for a Strategic Environmental Assessment (SEA) of petroleum exploration activities in the Labrador Shelf area of the Newfoundland and Labrador Offshore Area. It outlines the factors to be considered in the SEA, the scope of those factors, and guidelines for preparing 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* (Accord Acts) to ensure that offshore oil and gas activities proceed in an environmentally responsible manner. The C-NLOPB decided in 2002 to conduct a SEA of portions of the Newfoundland and Labrador Offshore Area that may have the potential for offshore oil and gas exploration activity but that were not subject to recent SEA nor to recent and substantial site-specific assessments.

The C-NLOPB has decided to undertake a SEA for the Labrador Shelf portion of the Newfoundland and Labrador Offshore 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, 1999). SEA incorporates a broad-based approach to environmental assessment 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. The Cabinet Directive was updated in 2004 to strengthen the role of SEA at a strategic decision-making level, by clarifying obligations of department and agencies and linking environmental assessment to the Implementation of Sustainable Development Strategies.

SEA typically involves a broader-scale environmental assessment (EA) that considers the larger ecological setting, rather than a project-specific environmental assessment 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, information from the SEA will assist the Board in determining whether exploration rights should be offered in whole or in part within the Labrador Shelf area and may identify general restrictive or mitigative measures that should be

considered for application to exploration activities. The strategic decision of the SEA is used by the Board in the potential future issuance of one or more exploration licences pursuant to the Accord Acts, in the Labrador Shelf 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, other geophysical surveys, geotechnical 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 in the early stages of exploration in an area.

Each of these activities requires the specific approval of the Board, including a project-specific assessment of its associated environmental effects in accordance with the *Canadian Environmental Assessment Act* (CEA Act). The SEA does not replace this requirement for a project-specific EA. However, 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 Labrador Shelf SEA Area; identify knowledge and data gaps; highlight issues of concern; and make recommendations for mitigation and planning.

3.0 Area of Focus

Within Labrador Shelf offshore area, the Nunatsiavut Government has certain duties and powers, as defined by the *Labrador Inuit Land Claims Agreement* (the Agreement), in The Zone and in the Area Adjacent to the Zone¹. The chosen area of focus, the Labrador Shelf SEA Area, as identified in Figure 1, will include all marine waters east of the low water mark out to the 200 nMi Exclusive Economic Zone under the jurisdiction of the C-NLOPB. Those areas of the Zone and the Area Adjacent to the Zone that fall

¹ The Zone and Area Adjacent to the Zone are defined in the Agreement.

within this area are captured in the Labrador Shelf SEA Area. For clarity, the area commonly referred to as the Lake Melville Area will only include those marine waters that are eastward of the low water mark.

The terms 'offshore' or 'offshore area' refer to the jurisdictional area of the C-NLOPB. The Accord Acts define 'offshore area' as: *“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.”*

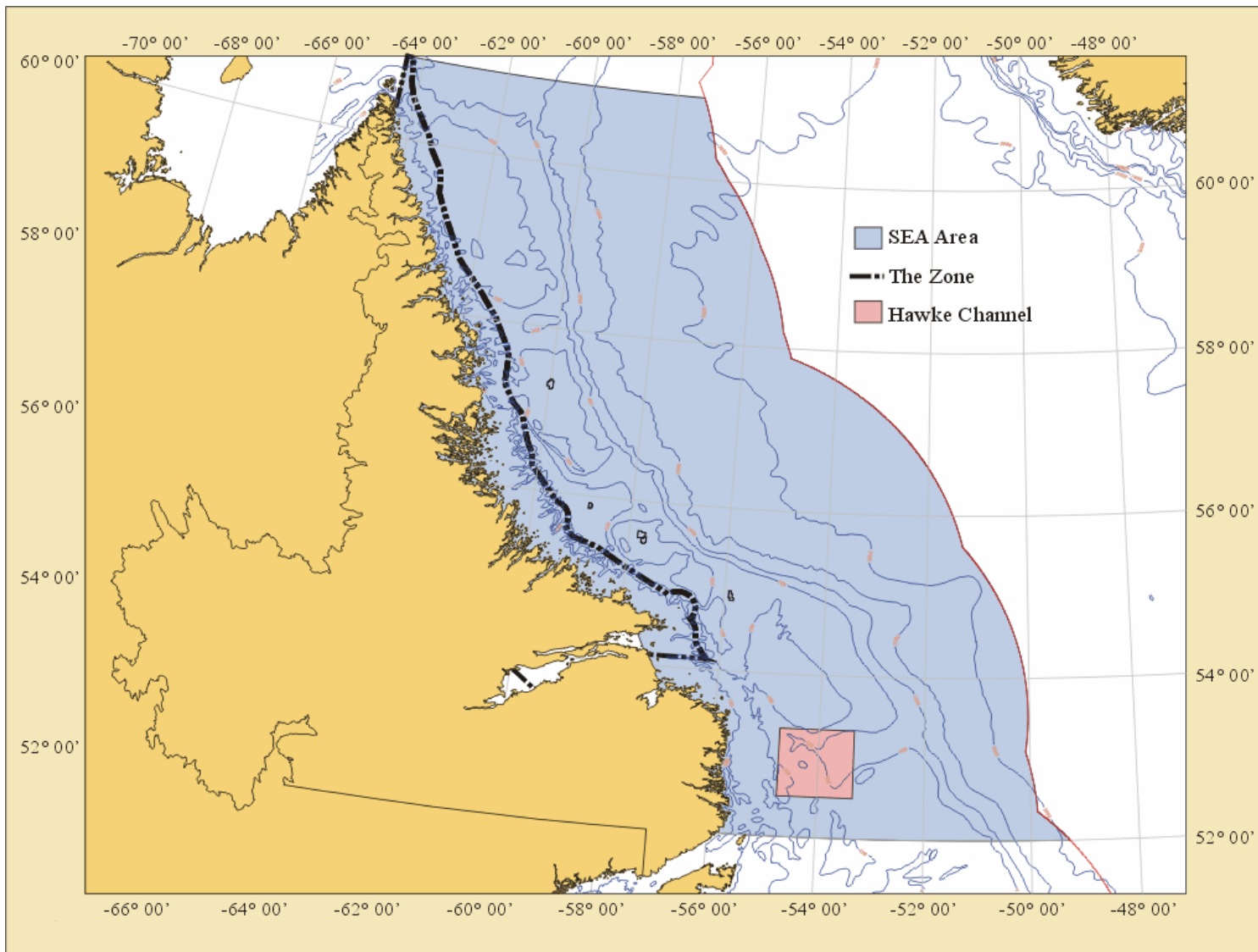


Figure 1 – Labrador Shelf SEA Area

4.0 Working Group

This draft scoping document was drafted by C-NLOPB staff with the assistance of a Working Group. The Working Group is co-chaired by the C-NLOPB and the Nunatsiavut Government and consists of members of the Nunatsiavut Government, federal and provincial government agencies, local Regional Economic Development Boards, the fishing industry, and non-governmental organizations. The purpose of the Working Group is to assist the C-NLOPB in the development of the SEA through the provision of technical advice regarding scope and content of the SEA, and public consultations.

5.0 Objectives

Within the Labrador Shelf SEA Area, the SEA will:

- Provide an overview of the existing environment;
- Generally describe typical offshore oil and gas exploration activities
- Generally describe typical offshore oil and gas production activities
- Describe and evaluate potential environmental effects associated with offshore oil and gas exploration activities;
- Identify knowledge and data gaps;
- Highlight issues that may be of concern;
- Identify areas of interest or sensitive areas;
- Make recommendations for general mitigative measures that should be employed during offshore petroleum activities;
- Identify, where appropriate, areas requiring enhanced levels of mitigation; identify, if feasible, the level of enhanced mitigation required
- Identify general restrictive, or monitoring, measures, as appropriate, that may be required for future offshore petroleum activities; and
- Assist the Board in determining whether exploration rights should be issued in whole or in part in the Labrador Shelf SEA Area.

6.0 Past and Present Oil and Gas Activities

Past exploration activity in the Labrador Shelf SEA Area has consisted of the collection of approximately 149,233 line km of 2D seismic data from 1968 to 2005. The most recent seismic program undertaken in the area was in 2006, whereby approximately 10 844 km of seismic data was acquired. Exploration drilling commenced in the 1970's. Between 1971 and 1985, 26 exploration wells and 2 delineation wells were drilled on

the Labrador Shelf. With the discovery of natural gas at a number of these exploration wells, five significant discoveries licences (SDLs) were granted by the Board. The five SDLs represent a total of 4.244 trillion cubic feet (TCF) of natural gas reserves. There are no Exploration Licences (ELs) or production licences within the Labrador Shelf SEA Area (see Figure 1).

The Board has not held a call for bids in the Labrador Shelf SEA Area in the history of the Call for Bids cycles.

7.0 Scope of SEA

The SEA will describe all foreseeable offshore oil and gas exploration activities in the Labrador Shelf SEA Area. It will examine the project-environment interactions associated with these petroleum exploration activities. Exploration activities to be considered in the SEA include 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 Newfoundland and Labrador offshore area. However, where information exists, the coastal environment will be described and the project-environment interactions identified and discussed.

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 this can be foreseen. Generic types of production facilities that could be employed in the Labrador Shelf SEA Area will be identified and their potential project-environment interactions briefly discussed.

Predictions concerning types and quantity of likely production facilities will be undertaken in general terms. The discussion will focus on existing Significant Discover Licences in the area, and known and feasible production scenarios.

7.1 Spatial and Temporal Boundaries

The spatial boundary for petroleum related activities to be considered in the SEA is shown in Figure 1. The Labrador Shelf SEA Area is bounded in the south by the Orphan Basin SEA area. The eastern extent is bounded by the 200 nmi Exclusive Economic Zone and the western boundary ceases at the coast of Labrador to the low water mark.

The SEA will include the offshore petroleum exploration activities, as described in the preceding section, which may occur in the Labrador Shelf SEA Area within the next ten

years. The SEA will be reviewed in at least five years to determine whether an update is required.

7.2 Factors and Issues to be Considered

The focus of the SEA will be a “Valued Ecosystem Component” (VEC) approach. 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); commercial fisheries, traditional Aboriginal fisheries, marine mammals and sea turtles; waterbirds (including seabirds, waterfowl, shorebirds); species at risk; and sensitive/special areas. Traditional Knowledge will be incorporated, where appropriate. Within each of these general categories, species of importance to the Labrador Shelf SEA Area (e.g., species-specific commercial/aboriginal fisheries, species of ecological importance) will be emphasized.

The SEA report will include the following:

- Historical overview of offshore petroleum exploration activity in the Labrador Shelf SEA Area and a discussion of regional offshore oil and gas activities in the NL offshore area.
- Overview of typical offshore petroleum exploration activities (well site surveys, vertical seismic profiling, 2D/3D seismic, geotechnical programs, exploration drilling (including onshore to offshore drilling), well abandonment) and methods to carry out these activities;
- Brief discussion of production alternatives that could be employed in the Labrador Shelf SEA Area;
- Description of the physical and biological environments in the Labrador Shelf SEA Area based on existing information and data, and Traditional Knowledge. Data gaps will be highlighted. Factors to be included are outlined in the Sections 5.2.1 and 5.2.2;
- Description of other marine activities in the Labrador Shelf SEA Area (e.g. fisheries, aquaculture, marine transportation);
- Project-environment interactions of the VECs in the Labrador Shelf SEA Area 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 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 associated with multiple offshore oil and gas activities in the Labrador Shelf SEA Area based on an estimate of potential exploration activity derived from historical offshore petroleum activities in the area, and in consideration of offshore oil and gas activities within the NL offshore area; 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 the *CEA Act*, will not be undertaken in the SEA. A determination of significance can only be undertaken at the project specific stage where detailed information respecting project activities and scheduling are known.

Mitigation measures currently in practice to reduce or eliminate potential effects will be described for activities that may affect the physical and biological environments and VECs. Specific or 'non-typical' mitigations that may be required to address specific concerns will be highlighted, in particular, specific mitigations proposed for any special/sensitive areas identified within the Labrador Shelf SEA Area. Residual effects remaining after the application of routine mitigations will also be described.

The SEA will consider the following environmental factors and issues, as a minimum, with emphasis upon factors unique to the Labrador Shelf SEA Area. Sufficient supporting information will be provided, or referenced and summarized if it already exists in publicly available publications. Substantive uncertainties or information gaps will be identified.

7.2.1 Physical Environment

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

- Meteorology and climatology (extreme events, average temperatures, seasonal variations);

- Geology, including a discussion of the potential for seismicity/geohazard events and their impacts on slope stability in the Labrador Shelf SEA Area;
- Oceanography(wind, waves, extreme events); and
- Sea ice and iceberg conditions (historical overview, seasonal variability and current trends).

7.2.2 Biological Environment

An overview of the biological environment in the Labrador Shelf SEA Area will be presented, with emphasis upon identified VECs. For each of the following, the biological descriptions should be consistent with the level of detail presented for each species. Overviews of species (distributions, critical life stages, and important areas) should be presented in the context of their relevance to the Labrador Shelf SEA Area and of the potential for interaction with offshore oil and gas activities. This description will be based on available information and will include, but not be limited to:

- Finfish and Invertebrate species – for those species identified in Labrador Shelf SEA Area; focus on commercially important and emerging fisheries
- Fish habitat (including benthic habitat) for those species identified in LSSA
- Commercial fish species;
- Traditional Aboriginal fisheries
- Marine mammals and sea turtles;
- Waterbirds (including seabirds, waterfowl, and shorebirds);
- “Species at Risk”; and
- Sensitive/Special areas.

The following provides a detailed listing of information that will be captured within the SEA.

- Coastal/Shoreline Environment
 - An overview of the coastal/shoreline environment in the Labrador Shelf SEA Area with specific emphasis on special or unique habitats or places (e.g., parks, protected areas, fish spawning habitat, important bird areas, shoreline sensitivity information).
- Plankton
- Benthic Invertebrates (including commercial shellfish species)

- Finfish and Marine Invertebrates:
 - Overview of finfish and marine invertebrates in Labrador Shelf SEA Area, with focus on commercially important and emerging fisheries; information will include a summary of critical life stages; and locations of habitat supporting these life stages, if applicable to the Labrador Shelf SEA Area
 - The identification of known spawning, feeding, migratory and essential habitats, including coastal areas (where information exists) within the Labrador Shelf SEA Area, for the species described above ;
 - Summaries of finfish and marine invertebrate habitat in the LSSA particularly those supporting fisheries;

- Commercial, Recreational and Aboriginal Fisheries
 - Overview of Historical, present and potential future commercial fisheries within the Labrador Shelf SEA Area, including species under moratoria;
 - Description of commercial, recreational and aboriginal fisheries in Labrador Shelf SEA Area. This description should include a summary of historical fisheries.
 - General description of fishery activity including species, location, vessel size, gear type, timing
 - Aquaculture activities, if present, should be described

- Waterbirds
 - Overview of species present in the Labrador Shelf SEA Area and their distribution, including seabirds, waterfowl, and shorebirds. This discussion will include a description of critical life stages, lifestyles and life histories relevant to the SEA.

- Marine Mammals and Sea Turtles
 - General description of marine mammals and sea turtles that may be present in the Labrador Shelf SEA Area
 - Distribution of species, including lifestyles, life histories and important areas within the Labrador Shelf SEA Area

- Species at Risk
 - Description of Species at Risk, and critical habitat, as described in the *Species at Risk Act*, COSEWIC, and by the Government of

Newfoundland and Labrador that have been identified, or are believed likely to be present, in the Labrador Shelf SEA Area.

- Sensitive/Special Areas
 - Description of sensitive or special areas in the Labrador Shelf SEA Area. These can include, but are not limited to: rare or unique habitats; important bird areas; fish spawning habitat/migration routes; marine mammal migration routes; rare or unique plant species; areas of high productivity; Torngat Mountains National Park Study Area, National Parks, and Marine Protected Area designations; two Areas of interest under the National Marine Conservation Area (Nain Bight and Hamilton Inlet).

- Human Use
 - Description of traditional and cultural activities in the Labrador Shelf SEA Area. These include but are not limited to: travel routes, hunting, gathering and other domestic harvesting activities.
 - General overview of marine recreational and tourism activities in Labrador Shelf SEA Area

- Marine Commercial Traffic
 - Overview of commercial traffic activity within, and through the Labrador Shelf SEA Area

7.2.3 Project-Environment Interactions

For each of the identified VECs, a description of the interactions of petroleum exploration activity 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), onshore to offshore drilling), and ancillary activities;
- Vessel traffic (e.g., supply vessels, seismic vessels, helicopters); and
- 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 and sensitive life stages of commercial fish/shellfish species ;
- Benthic habitat disturbance;
- Coastal interactions (including fish/bird habitats, sensitive areas);
- Air quality issues;
- Operational discharges and the effects on water and sediment quality ;
- Accidental events – including offshore and coastal interactions, sensitive/special places, mitigations;
- Conflict with commercial fisheries, aboriginal fisheries, commercial traffic (e.g. ferry service), and recreational/tourism use of area and loss of access;
- Attraction of seabirds to lights/flares on structures or vessels; and
- Consideration of potential conflict with project activities (including light and noise generated) with tourism operations and the aesthetic and cultural landscape.

7.2.4 Cumulative Project-Environment Interactions

Cumulative effects will be examined in consideration of the estimate of potential exploration activity in the Labrador Shelf SEA Area and mitigation measures identified. Planned and reasonably foreseeable exploration activities will be included in the cumulative effects and will also consider other non-petroleum activities ongoing in the Labrador Shelf SEA Area such as commercial fishing, Aboriginal fishing activities, hunting, marine traffic, tourism operations, and fisheries research surveys. Consideration of marine activities in adjacent areas will be included.

7.2.5 Environment-Project Interactions

For exploration activities identified, the SEA will include a discussion of the effects of the environment on project activities within the Labrador Shelf SEA Area. These environmental factors may include:

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

8.0 Conclusions and Recommendations

Based on the information presented in the physical and biological environment overview, the description of project-environment interactions and the application of mitigation measures, conclusions will be presented and planning approaches

recommended for the Board to consider in the issuance of exploration licences in the Labrador Shelf SEA Area. Data gaps with potential to affect the validity of these conclusions will be highlighted. Sensitive areas or areas of concern identified during the SEA process will also be highlighted.

9.0 Consultations

Throughout the development of the SEA, the C-NLOPB and its contractor(s), with assistance by the Working Group, will consult with the Nunatsiavut, provincial, and federal government departments, Aboriginal Groups, and Labrador communities, the fishing industry and local non-governmental organizations. Information on the SEA process will be provided and people will be encouraged to discuss issues and concerns that are relevant to the Labrador SEA Shelf Area and SEA objectives.