



# **EXXONMOBIL CANADA LTD. SOUTHEASTERN NEWFOUNDLAND OFFSHORE EXPLORATION DRILLING PROJECT, 2020-2029**

## **Project Description Summary**

Pursuant to the Requirements of the *Canadian Environmental Assessment Act* (2012)

### **FINAL REPORT**

Submitted by:

**ExxonMobil Canada Ltd.**  
100 New Gower Street, Suite 1000  
St. John's, Newfoundland and Labrador  
Canada A1C 6K3

Prepared by:

**Wood Environment & Infrastructure Solutions**  
A Division of Wood Canada Limited  
133 Crosbie Road, PO Box 13216  
St. John's, Newfoundland and Labrador  
Canada A1B 4A5

*Wood. TF 1775225*

**September 2018**



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# 1 INTRODUCTION

## **Project Name: ExxonMobil Canada Ltd. Southeastern Newfoundland Offshore Exploration Drilling Project, 2020-2029**

ExxonMobil Canada Ltd. (ExxonMobil) and its co-venturers are planning to conduct a program of petroleum exploration drilling and associated activities in the southeastern portion of the Canada-Newfoundland and Labrador (NL) Offshore Area over the period 2020 to 2029 (hereinafter referred to as the Project). The Project requires review pursuant to the requirements of the *Canadian Environmental Assessment Act, 2012 (CEAA 2012)*.

This document is a *Project Description Summary* under CEAA 2012. It has been prepared and submitted by ExxonMobil (as Proponent) for review by the Canadian Environmental Assessment Agency (CEAA) and other relevant departments, agencies, organizations and the public to help inform a governmental decision regarding whether a federal environmental assessment (EA) review of the Project is required. Further detail is provided in the accompanying Project Description document.

### **1.1 Project Overview and Background**

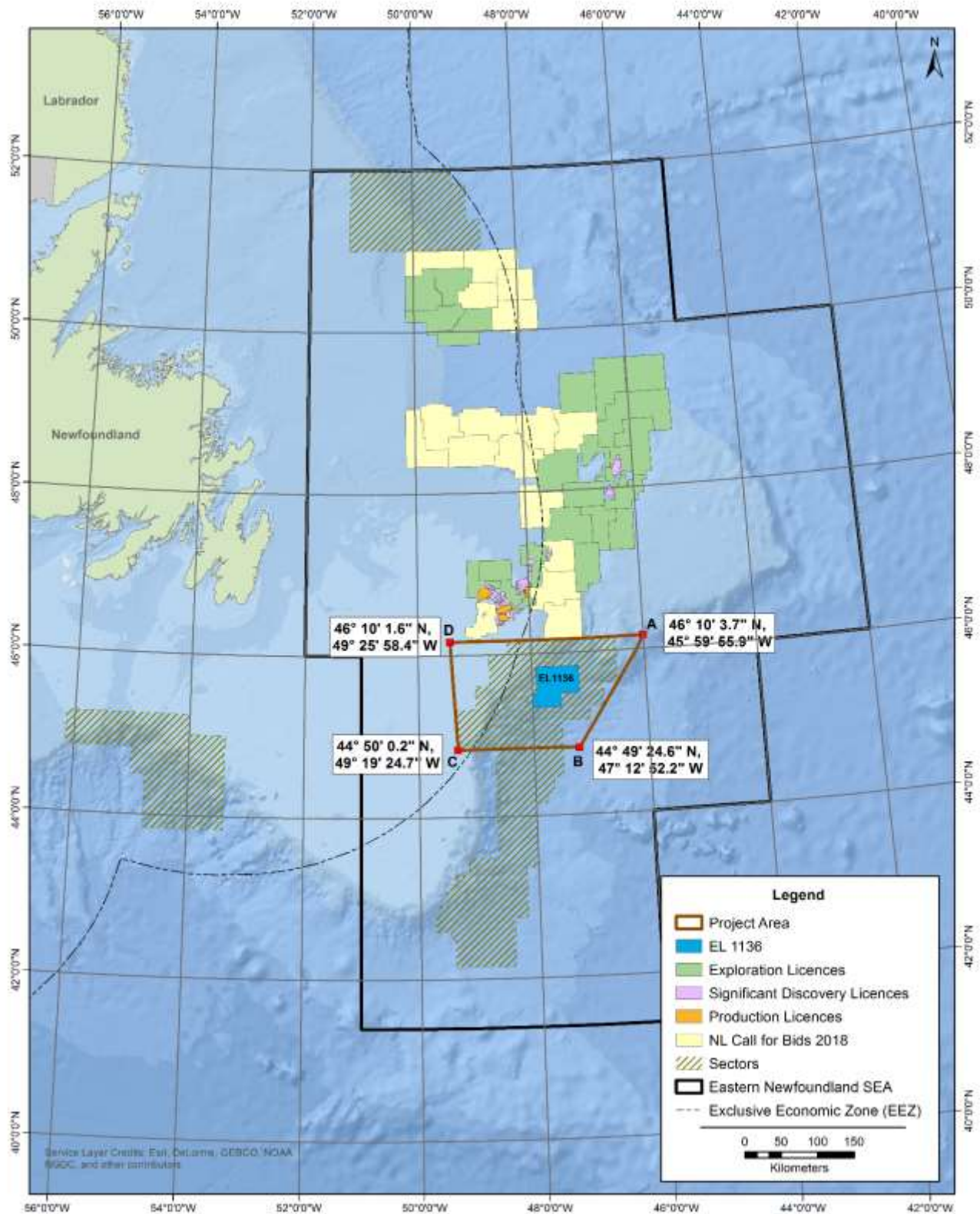
ExxonMobil Corporation (which includes ExxonMobil Canada Ltd. (ExxonMobil) and ExxonMobil Canada Properties) is actively evaluating potential oil and gas resources off the east coast of the island of Newfoundland on its existing and possible future land holdings in this region.

The Project Area (Figure 1-1) encompasses ExxonMobil's EL 1136 in the Carson Basin area, which has not been subject to exploration drilling activity to date, as well as the surrounding Sector NL01-SEN, anticipated to be the subject of a C-NLOPB Call for Bids in 2019. The Project Area has been defined so as to allow for the potential future inclusion of any ELs that ExxonMobil may acquire through the C-NLOPB's future Call for Bids process, or other licences within the Project Area that ExxonMobil acquires operatorship of.

The purpose of this Project is to drill prospective oil and gas targets identified from the interpretation of existing well logs and 2D and 3D seismic survey data to help determine the potential presence of hydrocarbons at these locations. Project plans involve drilling between one and five wells on EL 1136 (and similar numbers of wells on any future ELs within the Project Area). Planned Project activities include vertical seismic profiling (VSP) surveys, well testing, eventual abandonment or suspension procedures, and associated supply and service activities.

If a suitable prospect within EL 1136 is identified through the available seismic data and existing well information, exploration drilling operations could begin as early as 2020.

**Figure 1-1: ExxonMobil Canada Ltd. Southeastern Newfoundland Offshore Exploration Drilling Project, 2020-2029. Project Area, Exploration Licence and Sector.**



## 1.2 Proponent Information

ExxonMobil Canada Ltd. and its Canadian affiliates, which include ExxonMobil Canada Properties, are actively involved in on-going operations and petroleum exploration on Canada's east coast, with interests that include Production Licenses (PLs), Significant Discovery Licenses (SDLs) and Exploration Licenses (ELs) in the Jeanne d'Arc, Flemish Pass and Carson / Salar basins offshore eastern Newfoundland. ExxonMobil Canada Properties is a leading developer and operator of oil and gas in the region, including lead owner of Hibernia Management and Development Company Ltd. (HMDC), the operator of the Hibernia Project, the operator of the Hebron Project as well as a co-venturer in the Terra Nova Project. ExxonMobil Canada Properties intends to be the Operator of the proposed Eastern Newfoundland Offshore Exploration Drilling Project presently under review under CEAA 2012.

ExxonMobil conducts its business in a responsible and ethical manner that protects the safety and health of employees, others involved in its operations, its customers and the public. It is committed to conducting business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates. This commitment requires compliance with all applicable laws and regulations, facilities that are designed and operated to a high standard, and the systematic identification and management of safety, security, health and environmental risks (SSHE). These commitments are documented in ExxonMobil's safety, health, environmental, product safety and security policies and systems.

ExxonMobil has environmental policies, plans and procedures in place that pertain to its activities, including environmental management systems and other processes to ensure effective and efficient implementation and monitoring of their activities. This includes general policies, principles and corporate systems that relate to its overall operations worldwide and/or which relate to its activities in a particular jurisdiction or operating environment or on a project-specific basis.

The principal ExxonMobil contacts concerning this Project and its EA review are:

**Andrew McNeill, P.Geo**

Geoscience Supervisor, East Coast Operations  
ExxonMobil Canada Ltd.  
Suite 1000, 100 New Gower Street  
St. John's, NL Canada A1L 6K3  
Tel (709) 273-1462  
Email: andrew.f.mcneill@esso.ca

**Stephen Edwards, P.Eng.**

Safety, Security, Health and Environment Manager  
ExxonMobil Canada Ltd.  
Suite 1000, 100 New Gower Street  
St. John's, NL Canada A1C 6K3  
Tel (709) 273-1810  
Email: stephen.c.edwards@exxonmobil.com

### 1.3 Regulatory Context

This Project requires review pursuant to the requirements of CEAA 2012, as it constitutes a “designated project” under its *Regulations Designating Physical Activities*. These regulations specify the types of oil and gas activities that may be subject to a federal EA, including (Section 10):

*The drilling, testing and abandonment of offshore exploratory wells in the first drilling program in an area set out in one or more exploration licences issued in accordance with the Canada–Newfoundland and Labrador Atlantic Accord Implementation Act or the Canada–Nova Scotia Offshore Petroleum Resources Accord Implementation Act.*

The Project also involves environmental components, issues and requirements that fall within areas of federal jurisdiction. For example, Project activities are planned to take place within the offshore marine environment, which are federal waters and considered “federal lands” under CEAA 2012. The Project has the potential to affect environmental components such as fish and fish habitat, marine and migratory birds, and marine mammals and sea turtles that fall under federal jurisdiction. A number of relevant permits, authorizations and/or compliance may be required. No federal funding has been or will be requested or received by ExxonMobil from any federal authority to support this Project.

The Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) is responsible, on behalf of the Governments of Canada and Newfoundland and Labrador, for petroleum resource management in the Canada-NL Offshore Area. The *Canada-Newfoundland Atlantic Accord Implementation Act* and the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act* (the *Accord Acts*), administered by the C-NLOPB, provide for joint management of the Canada-NL Offshore Area and govern all oil and gas activities in the region. The Board's responsibilities under the *Accord Acts* include the issuance and administration of petroleum and exploration and development rights; administration of statutory requirements regulating offshore exploration, development and production; and approval of Canada-NL benefits and development plans. The C-NLOPB's regulatory responsibilities also include the issuing of several authorizations and approvals pertaining to offshore oil and gas exploration and development projects and activities in this area.

In addition to EA requirements under CEAA 2012, the C-NLOPB requires that project-specific EAs be completed in relation to certain types of petroleum activities in the Canada-NL Offshore Area. It is anticipated that any required EA review for this Project under CEAA 2012 will involve C-NLOPB participation, and that any Environmental Impact Statement (EIS) completed under CEAA 2012 will also address the C-NLOPB's EA requirements.

Other federal and provincial government departments and agencies may have regulatory responsibilities, information, advice and/or other interests regarding the Project and its environmental setting and potential effects, pursuant to their associated legislation and mandates. Other legislation and associated regulations that are or may be relevant to the Project and its EA therefore include the:

- *Accord Acts* and associated *Regulations*;
- *Canadian Environmental Assessment Act*;
- *Fisheries Act*;
- *Canadian Environmental Protection Act*;
- *Oceans Act*;

- *Navigation Protection Act*;
- *Canada Shipping Act*;
- *Migratory Birds Convention Act*; and the
- *Species at Risk Act* (Canada) and *Endangered Species Act* (NL).

ExxonMobil will comply with these and all relevant provincial and federal legislation, regulations and guidelines, as well as applicable international conventions and standards.

Given the nature, scope and location of the Project, which will take place in the marine environment offshore eastern Newfoundland it will not involve the development and use of any new on-land or near shore infrastructure. Therefore it is not anticipated that provincial environmental regulatory interests will be triggered. This will be confirmed through discussions with relevant provincial government departments and agencies as Project planning and regulatory reviews progress.



## 2 PROJECT DESCRIPTION

This Project description includes an overview of its planned location, equipment, activities and schedule, as well as various associated environmental planning and management considerations.

### 2.1 Project Area and Its Location

The Project will take place in a marine area offshore eastern Newfoundland and Labrador. The Project Area (Figures 1-1 and 2-1, Table 2-1) covers approximately 24,335 km<sup>2</sup>, with its western edge located nearly 300 km east of St. John's, NL. It encompasses EL 1136 and possible future ELs in the region where ExxonMobil may conduct exploration drilling activities between 2020 and 2029 (Figure 2-1, Table 2-2).

Although the overall Project Area has been defined as a single polygon encompassing EL 1136 and the Sector identified above, all drilling operations carried out as part of the scope of this Project will be conducted within the defined boundaries of an EL. Current Project plans involve drilling between one and possibly up to five wells on EL 1136 (exploration or delineation), with similar numbers of wells possible for any future ELs that may be issued to ExxonMobil and eventually become part of the Project. Specific wellsite numbers, types and locations will be determined and refined as Project planning activities continue based on existing and new seismic survey data and information from previously drilled wells. The Project Area also includes a buffer area to accommodate the location and extent of ancillary activities that are often carried out in support of drilling activities, such as wellsite surveys or the temporary presence and movement of drill rigs or support.

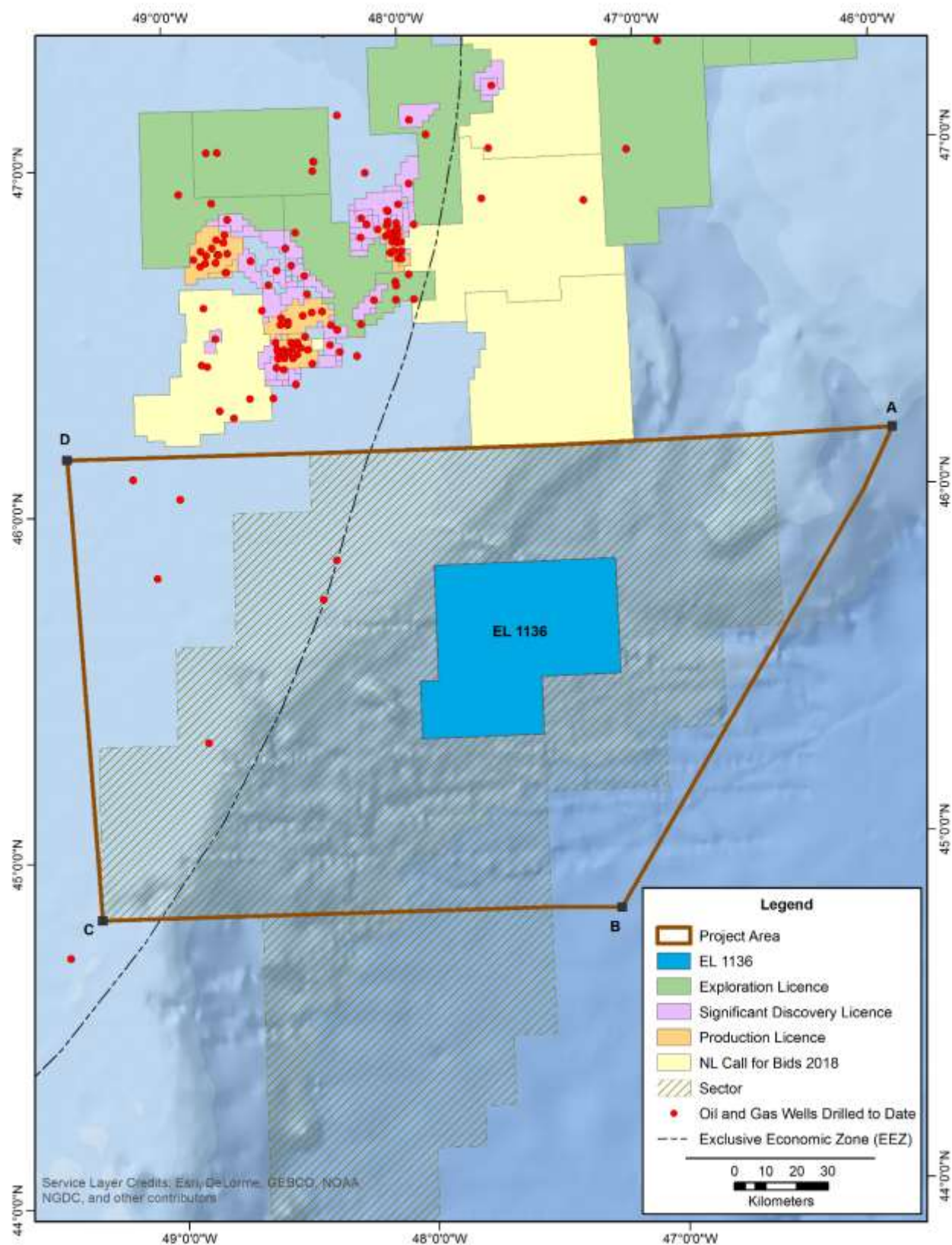
The location and spatial extent of a Study Area for any required EIS for the Project will be determined as part of the planning and design phase of that document, including any associated direction provided in the EIS Guidelines.

**Table 2-1: Project Area Corner Coordinates**

Point	Easting	Northing	Latitude	Longitude
A	886057	5124848	46° 10' 3.7" N	45° 59' 55.9" W
B	799272	4970317	44° 49' 24.6" N	47° 12' 52.2" W
C	632515	4965809	44° 50' 0.2" N	49° 19' 24.7" W
D	620980	5113810	46° 10' 1.6" N	49° 25' 58.4" W
Note: Project Area Coordinates in NAD83 UTM Zone 22				

**Table 2-2: Overview of Exploration Licence 1136**

Exploration Licence	Approximate Distance from St. John's NL (km)	Licence Area (km <sup>2</sup> )	Water Depth (m)		
			Max	Min	Range
EL 1136	415	2,888.00	2,730	395	2,335

**Figure 2-1: Exploration Licence 1136 location**

## 2.2 Project Timing and Schedule

The proposed temporal scope of this Project, a 10-year period from 2020 to 2029, has been defined to address the term of EL 1136 (within which EA and other associated regulatory approvals must be obtained and drilling planned and commenced). It also allows for exploration drilling on this and any additional ELs that ExxonMobil may acquire through Calls for Bids by the C-NLOPB over that period, as well as any possible approved extensions to these ELs, and the associated stages of well drilling, testing and abandonment or suspension.

Detailed logistical planning and drilling unit and services procurement processes for the Project may commence in 2018 and continue throughout the life of the Project. If a prospective wellsite is identified and pending the receipt of applicable regulatory and corporate approvals, exploration drilling could commence in EL 1136 in 2020 with an initial well. Upon evaluation of the first well and the analysis of its results, a potential second well location site will be determined. It is currently anticipated that up to five wells (exploration and possibly delineation) may be drilled over the term of that EL. The Project may also involve drilling from one, and potentially up to five, wells (exploration and possibly delineation) on any future ELs that become part of the Project.

Each well will require approximately 60-75 days for drilling and possible testing, followed by well abandonment or suspension. At times drilling units may be working in different areas simultaneously for reasons of efficiency and if synergistic opportunities arise through, for example, the presence and availability of suitable equipment working in the region. The Project's planned exploration activities will occur at various times of the year for each and all years of the proposed drilling program.

## 2.3 Project Components and Activities

The primary components and activities associated with this Project are:

- Drilling
- VSP
- Well testing
- Well abandonment or suspension
- Supply and servicing

### 2.3.1 Drilling

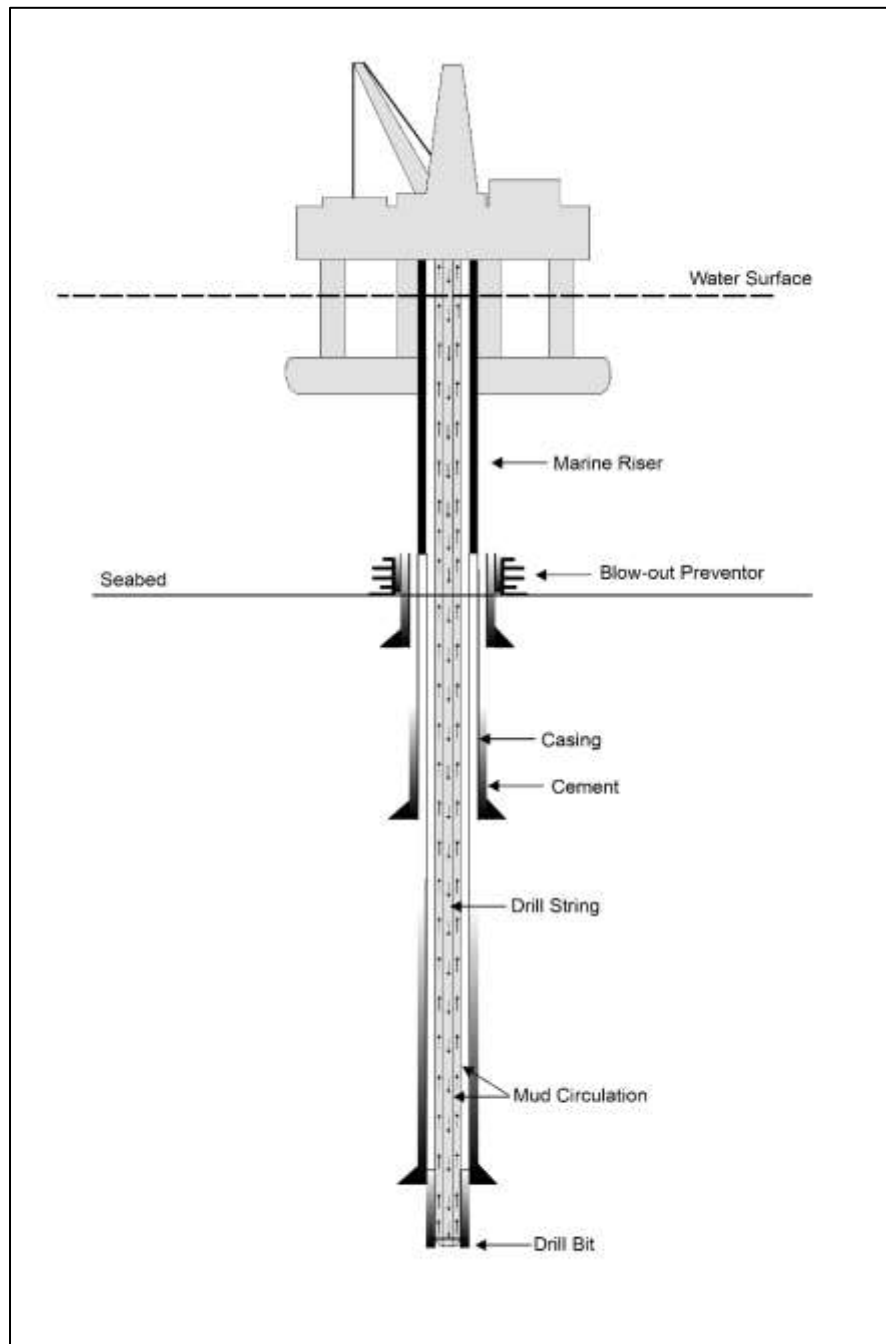
ExxonMobil anticipates drilling as soon as 2020. Drilling would initially take place on EL 1136, and depending on the results of the initial well, potentially up to four additional wells may be drilled at other (as yet undefined) locations over the term of this EL. Wellsite locations will be selected as Project planning and design move forward, based on existing and new seismic survey data and information derived from previously drilled wells in the region.

Well planning involves close coordination between the geoscience and drilling teams. Each depth interval is evaluated and re-evaluated to design the wellbore, drilling fluid density, casing to be run and cement to be used. A multi-disciplinary team also completes a detailed risk analysis. In preparation for the drilling unit arrival at the drilling location, positioning transponders will be placed on the seabed and metocean equipment deployed.

Wells will be drilled using a semi-submersible drilling unit. These units are generally used in relatively deep waters or in areas where increased mobility is required due to ice or other factors and operational risks. On site, the unit is moored to the bottom with a series of large anchors (up to 1,000 m water depth). In deeper waters (over 1,000 m), these units use a dynamic positioning system in which thrusters position the vessel and keep it steady.

Figure 2-2 provides a generalized schematic of an offshore well and summarizes the typical drilling sequence for the upper section of a well and associated well head, blow-out preventer (BOP), casing and riser installation for wells such as those being proposed as part of this Project.

No excavated drill centers and no underwater construction activities will be required during the planned exploration drilling activities of this Project. The installation of seabed or near-seabed components would be restricted to the wellhead, BOP and riser. Wellheads typically protrude a maximum of five metres above the seabed. All drilling units must be evaluated and granted an Operations Authorization by the C-NLOPB before operating off Newfoundland and Labrador.

**Figure 2-2: Schematic of a Typical Offshore Well and Associated Drilling Sequence**

1	Drill riserless large diameter hole using water-based muds and return cuttings to seafloor
2	Run wellhead and cement casing, taking returns back to the seafloor
3	Install BOP and riser
4	With installation of riser and BOP complete, continue drilling through casing with either water or synthetic based muds, cuttings and mud returned to rig deck for processing and disposal

**NOTE: For general illustration only. Drilling unit and well components not to scale**

### **2.3.2 Vertical Seismic Profiling**

In obtaining and interpreting the results of oil and gas exploration drilling activities, the correlation of time-based depth information from seismic data to the actual drilling depth is critical. VSP enables the acquisition of time, depth, and velocity information for the formations in which drilling has been completed. In the marine environment, receivers are typically placed in the borehole and a sound source deployed into the water column at a predetermined depth. Other times, a sound source may be placed on a vessel which then moves away while firing the seismic source at pre-determined distances from the borehole receiver.

VSP acquisition surveys are typically short-term activities of several days duration, with seismic source firing often limited to just a few hours.

### **2.3.3 Well Testing**

During offshore exploration drilling programs, ongoing well formation logging is used to identify the rock types encountered and to identify any possible zones where hydrocarbons are present. Mud logging and the evaluation of drill cuttings and mud gases are the primary well formation zone logging methods. Additional evaluation is accomplished by logging/testing while drilling (LWD) / wireline well logging techniques which provide detailed rock formation and rock properties information.

If sufficient indication of hydrocarbon presence is found, well flow testing may be undertaken to sample and identify formation fluids and to measure flow rates. During this procedure, potential zones are isolated, and samples are acquired. If gas is present flaring is required. Any flaring activities will be kept to a minimum and will only be carried out if a drill stem test is required. The likely duration of flaring during a drill stem test is approximately one to two days. The duration of well testing is dependent upon the complexity of the subsurface rock formations and the hydrocarbons encountered.

### **2.3.4 Well Abandonment or Suspension**

Upon completion of drilling and well testing, exploration wells will be decommissioned and suspended or abandoned to protect the marine environment. These activities will be carried out as per ExxonMobil's standard internal procedures and applicable industry practice, and will comply with relevant regulatory requirements.

Well abandonment involves the isolation of the well bore by placing cement plugs, potentially in combination with mechanical devices, at various depths, with the casing then being cut and removed just below the surface of the seafloor. All equipment on the seafloor will be removed. An ROV or other equipment will confirm casing details and to inspect the seabed for debris. In the event that planned, conventional well abandonment techniques are ineffective for a particular well, alternative approaches will be investigated and implemented in consultation with relevant regulatory authorities and in compliance with applicable authorizations. Wells will be inspected in accordance with applicable regulatory requirements at the time of abandonment.

In some circumstances, the well may not be abandoned, but suspended for future re-entry. In these cases, the same cement plugging program would be implemented, ensuring isolation of all hydrocarbon-bearing intervals, but the casing / wellhead may be left in place for future use.

### 2.3.5 Supply and Servicing

Offshore supply vessels (OSVs) and helicopter services for the Project will be based in St. John's NL through existing third-party service suppliers that service the oil and gas sector. Up to four vessels could be required to support the drilling program of a single drilling unit, including two to three Anchor Handling Tug Supply (AHTS) vessels or Platform Supply Vessels (PSVs) and one standby vessel, as well as two helicopters. An additional seabed survey vessel may be used occasionally to complete short duration ROV inspections, environmental and/or geohazard surveys. During the ice management season, the number of vessels required could increase.

Two to three trips to and from the drilling units by the supply vessels per week are anticipated during the course of the Project. In the case that two drilling units are operating at the same time, the number of offshore supply vessels would increase to four or five and the number of weekly trips to the onshore marine base would increase up to four or five trips.

All drilling units and vessels will be in compliance with applicable legislation and regulations and will be inspected by Transport Canada and approved for operation by the C-NLOPB before beginning work. They will have appropriate oil spill / pollution prevention and emergency response plans in place, and each will be International Convention for the Prevention of Pollution from Ships (MARPOL) compliant.

## 2.4 Potential Environmental Emissions, Discharges and Associated Waste Management

The primary potential environmental emissions and discharges associated with offshore exploration drilling programs include:

1. Atmospheric emissions, including noise, light and exhaust from the drill rig(s), support vessels and associated equipment, as well as from the storage and flaring of hydrocarbons associated with well testing (if and as required). The primary air emissions, including greenhouse gases (GHGs), that would result from these Project activities include: drill rig, vessel and aircraft exhausts (carbon monoxide (CO), nitrogen oxides (NOX), total suspended particulates (TSP), volatile organic compounds (VOCs), GHGs); and power generation (CO, NOX, TSP, VOCs, sulphur dioxide, GHGs). Formation flow well testing could require short periods of flaring and associated emissions of associated gases (CO, NOX, VOCs, TSP, GHGs). Assuming that it takes 60-75 days to drill a well, CO<sub>2</sub> equivalent emissions associated with operational drilling (including any associated well evaluation and testing activities) and associated vessel traffic could be in the range of 5,000 to 15,000 tonnes CO<sub>2</sub> per well. These are preliminary estimates only, and an estimate of, and analysis regarding, potential Project-related GHG emissions will be calculated and discussed as relevant and required in the EIS.
2. Underwater noise includes the noise generated by the drilling unit and supply and standby vessels as well as the sound energy from the source array for any associated VSP data collection.
3. Drilling wastes are primarily drilling muds, fluids that lubricate and cool the drill bit and hole, circulate cuttings and carry them back to the surface when the riser is in place, and help to maintain appropriate subsurface pressure in the well. These can be a water-based muds (WBMs) or synthetic-based muds (SBMs). The primary component of WBMs is seawater, with other additives (primarily bentonite (clay), barite and potassium chloride) and approved

chemicals also added as required to control and achieve the required mud properties. The initial “riserless” sections of the well bore are generally drilled using WBM in which case the mud and cuttings are returned to the seabed as permitted by, and in accordance with, the *Offshore Waste Treatment Guidelines*. The riser system serves as a conduit to bring mud and cuttings back to the drilling unit in a closed loop system. These deeper sections of the well bore are typically drilled using SBMs, which are returned to the drilling unit’s deck via the riser and then separated and treated before disposal. The SBM itself is reused, and treated SBM cuttings are discharged to the marine environment as specified in the *Offshore Waste Treatment Guidelines*.

4. Liquid wastes include storage displacement, bilge, ballast, cooling, gray, black and fire control systems test water, as well as treatment fluids, desalination brines and other liquid materials. Allowable chemical properties for offshore disposal to the marine environment and associated reporting requirements are specified in the *Offshore Waste Treatment Guidelines*.
5. Solid wastes. Domestic waste materials will be generated primarily by Project-related personnel housed at accommodations on-board the drilling unit and support vessels. Project-generated hazardous waste materials include spent and waste chemicals, chemical containers, spent absorbents and oily rags, batteries, and biomedical waste.

The key regulatory guidance pertaining to emissions and offshore discharges, disposal and treatment for offshore activities is contained in the *Offshore Waste Treatment Guidelines*. Offshore waste discharges for this Project will be managed in strict compliance with these guidelines, as well as MARPOL. ExxonMobil will comply with applicable sections of these and other relevant regulations and guidelines as adopted in the Environmental Protection Plan (EPP) approved by the Chief Conservation Officer (CCO). A comprehensive Waste Management Plan similar to those used by the other Operators will be developed and implemented for the Project.

ExxonMobil is committed to establishing safe and environmentally responsible procedures for the generation, storage, handling, transportation, treatment and disposal of all waste materials generated throughout the course of this Project. The Company will attempt to reduce, reuse and recycle liquid and solid waste and reduce liquid and atmospheric emissions. All onshore and offshore waste discharges will be managed and disposed of as per the Project’s Environmental Management Plan, Offshore Chemical Management Plan and the Waste Management Plan. Waste products offloaded at the on-shore supply base(s) will be disposed of by licenced third-party waste disposal companies in accordance with provincial and municipal regulations. Waste types and volumes will be documented as per regulatory requirements.

An ExxonMobil Environmental Compliance Monitoring Plan (ECMP) will be prepared once the drilling unit(s) and OSVs have been selected. This is a key component of the Company’s environmental management system and will focus solely on the proposed exploration drilling program. It is intended to satisfy the requirements specified in subsections 9(i)(j) of the *Newfoundland Offshore Petroleum Drilling and Production Regulations*. The requirements outlined in the ECMP are generally aligned with the *Offshore Waste Treatment Guidelines*.

## 2.5 Potential Accidental Events and Their Prevention and Response

During an offshore oil and gas exploration program, an accidental event or malfunction is an unlikely occurrence, for which there are multiple barriers and safety systems in place. Environmental incidents



which may be associated with offshore drilling programs include potential blowouts (subsea and surface), as well as other possible spills of hydrocarbons or other substances from the drilling unit and/or associated vessel activities, which may vary considerably in terms of their nature, scale, duration and potential environmental consequences.

Oil spill prevention is a key focus of ExxonMobil's plans and activities. Oil spill prevention, response and overall preparedness approaches for the Project will be further developed and defined through the review and approval processes. The Operator will develop and implement a Project and site-specific Oil Spill Reference and Oil Spill Response Plan (OSRP), which will be submitted to the C-NLOPB as part of the OA application process. ExxonMobil's Emergency Response Bridging Document clarifies the emergency response interface between ExxonMobil and drilling platform emergency response systems. All incidents will be managed in accordance with the C-NLOPB *Incident Reporting and Investigation Guidelines*. The ExxonMobil Incident Notification, Investigation and Reporting procedure will be followed for incident management on the drilling platform and support vessels. The Operator's SSHE Advisor will be responsible for initial incident notification submission to the C-NLOPB. Environmental incident requirements and triggers are also outlined in the ExxonMobil EMCP.

The fate and behaviour of accidental spills are dependent upon Project and site-specific characteristics, such as hydrocarbon volumes, types and properties, oceanographic conditions, as well as the size, location and timing of the spill. EA reviews for individual proposed drilling programs may therefore include project-specific analysis of oil spill probabilities, as well as modelling studies of the likely fate and behavior of possible oil spills. Any eventual EIS for this Project will describe and assess any such potential accidental events and malfunctions. It will include the results of any spill modelling conducted for the Project (if and as required) as part of the associated environmental effects analysis and the identification of appropriate mitigation. The EIS would also describe relevant accident prevention and emergency response plans and procedures.

Ice management is part of normal operations during the ice season offshore eastern Newfoundland (normally March to June). ExxonMobil conducts dedicated ice monitoring activities (including overflights and mapping) in relation to its activities off eastern Newfoundland, which commence early in the season and continue throughout that period. Should ice pose a threat to the drilling platform and/or other Project equipment, personnel or the environment, an emergency situation may be initiated and the established ice management process, as documented in ExxonMobil's Ice Management Plans, implemented. Established procedures include iceberg towing and deflection and, if required, procedures for the safe disconnect and movement of the drilling unit while leaving the well in a safe condition.

### 3 ENVIRONMENTAL SETTING

The following sections summarize the existing biophysical and socioeconomic environments that overlap and may interact with the Project.

#### 3.1 Previous Environmental Assessments and Studies

Portions of the Canada-NL Offshore Area, including the Project Area, have been subject to previous environmental studies that would be relevant to this Project and any required EIS. Offshore oil and gas exploration and development activities have been occurring off Newfoundland and Labrador for several decades. The environmental studies and analyses completed in relation to these projects and activities are valuable sources of information on the existing environmental setting in the region, as well as the potential environmental issues and interactions that may be associated with these activities.

Of particular relevance to this Project and any EA requirement is a Strategic Environmental Assessment (SEA) for the Eastern Newfoundland Offshore Area completed in 2014 by the C-NLOPB (Amec 2014)<sup>1</sup>, which involved identifying, reviewing and presenting regional environmental baseline information (physical, biological and socioeconomic), and completing a review and analysis of likely environmental issues and mitigation and planning approaches as input to future exploration licencing decisions by the C-NLOPB. This SEA provides a key source of regional environmental information for subsequent, project-specific EAs of proposed oil and gas exploration and development projects and will serve as such for any required EIS for this Project.

A number of project-specific EAs have also been completed or are in progress for proposed projects and activities off eastern Newfoundland, including parts of the Project Area and adjacent regions. In addition, other environmental studies and surveys have been completed on components of the existing biophysical and socioeconomic environments within and adjacent to the Project Area, which provide a useful and informative description and understanding of the existing environmental setting of the region.

The existing and available information that is provided through these past EAs and other environmental studies is considered to provide adequate and appropriate environmental baseline information for the Project Area for EA purposes, and no additional dedicated environmental field work will be required or planned in relation to this Project and any EIS that may eventually be required for it.

#### 3.2 Physical Environment

The geology of the marine area off eastern Newfoundland is complex and varied, and the bedrock and surficial characteristics of the Project Area and surrounding regions have been shaped by various natural factors and processes over time.

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1 Amec Environment and Infrastructure. (2014). Eastern Newfoundland Strategic Environmental Assessment (SEA). Prepared for the Canada-Newfoundland and Labrador Offshore Petroleum Board (August 2014).

Note: Also applies to all subsequent references to Amec 2014 in this document.

The bathymetry of the Project Area (see Figure 2-1) is also varied. It includes the eastern Grand Banks, with depths as shallow as 50 m. Farther east, over the central portion of the Project Area, the Grand Banks quickly slope down to 1,000 m and into the Flemish Pass with depths of 1,300 m and greater. To the southeast, numerous canyons run down from the Grand Banks and continental slope into the Newfoundland Basin and deep ocean where depths exceed 2,000 m. The northeastern corner of the Project Area lies over the southern tip of the Flemish Cap at depths of about 600 m. Depths over EL 1136 range from about 395 m in the northwest to 2,730 m in the southeast.

Available climatological information for sites near the Project Area indicate that prevailing winds are from the west to northwest in winter and from the southwest and south in summer. Mean hourly wind speeds are on the order of 11 m/s in winter and 6 m/s in summer for the Project Area; maximum hourly wind speeds might be expected to range from about 20 m/s in summer to 30 m/s or greater in winter. The Project Area is subject to tropical systems (gale force winds of 17-24 m/s or stronger) from June to November, with the highest frequency in September. Air temperatures are generally coolest in January or February, averaging about 2 to 3°C and warmest from July through September, averaging about 15°C. Rain or drizzle can occur at any time of year and is most likely to occur with southerly or southwesterly winds. Snow and freezing rain are possible from October through May, and snow can accompany winds of any direction. Visibility is the most favourable in fall and winter and most frequently restricted in summer and spring (Amec 2014).

Mean significant wave heights over the Project Area are on the order of 2 m in summer and 4 m in winter, with maximum significant wave heights of 8 to 10 m in summer and 13 m or greater possible in winter. The largest waves are from the southwest through northwest in winter and southwest through west in summer.

Water circulation in the region is dominated by the generally weak, southward flow of the cold Labrador Current, which flows over the upper Continental Slope and through the Flemish Pass. The flow is generally to the southwest at all depths, but over the portion of the Project Area on the Grand Banks to the northwest, with water depths less than 100 m, the mean currents are generally weak and flow southward. Mean sea surface temperatures range from about 0°C in winter to 15°C or greater in summer. Near-bottom mean sea temperatures generally range from -1 to 0°C on the Grand Banks to 4°C in deeper waters year-round (Amec 2014). The Project Area is subject to seasonal intrusions of sea ice and icebergs, as well as vessel icing during particular meteorological conditions. Sea ice and iceberg conditions will vary each year and by location. For the Project Area most icebergs are likely encountered between March and June (Amec 2014).

### **3.3 Biological Environment**

Marine ecosystems are comprised of interacting biological and physical elements that form complex and variable patterns across a seascape. The Project Area and surrounding marine environments are inhabited by a variety of marine biota, within which the presence, abundance and distribution of specific species varies considerably across this marine environment.

The Eastern Newfoundland SEA (Amec 2014) provides a detailed overview of marine fish and fish habitat that are known or considered likely to occur within the overall Project Area and surrounding area. This includes information on habitats, plankton, benthos, deep-water corals, and fish, based on existing information and datasets. Deep-sea corals and sponges are of particular environmental interest due to the habitat forming and nursery capacity aspects of these benthic invertebrates and their relative

sensitivity to anthropogenic stressors. Existing and available information on corals and sponges in this region indicates that portions of the Project Area overlap with several areas where such species are present (Figure 3-1). In addition, several associated fisheries closure zones are located within and adjacent to the Project Area (Figure 3-2).

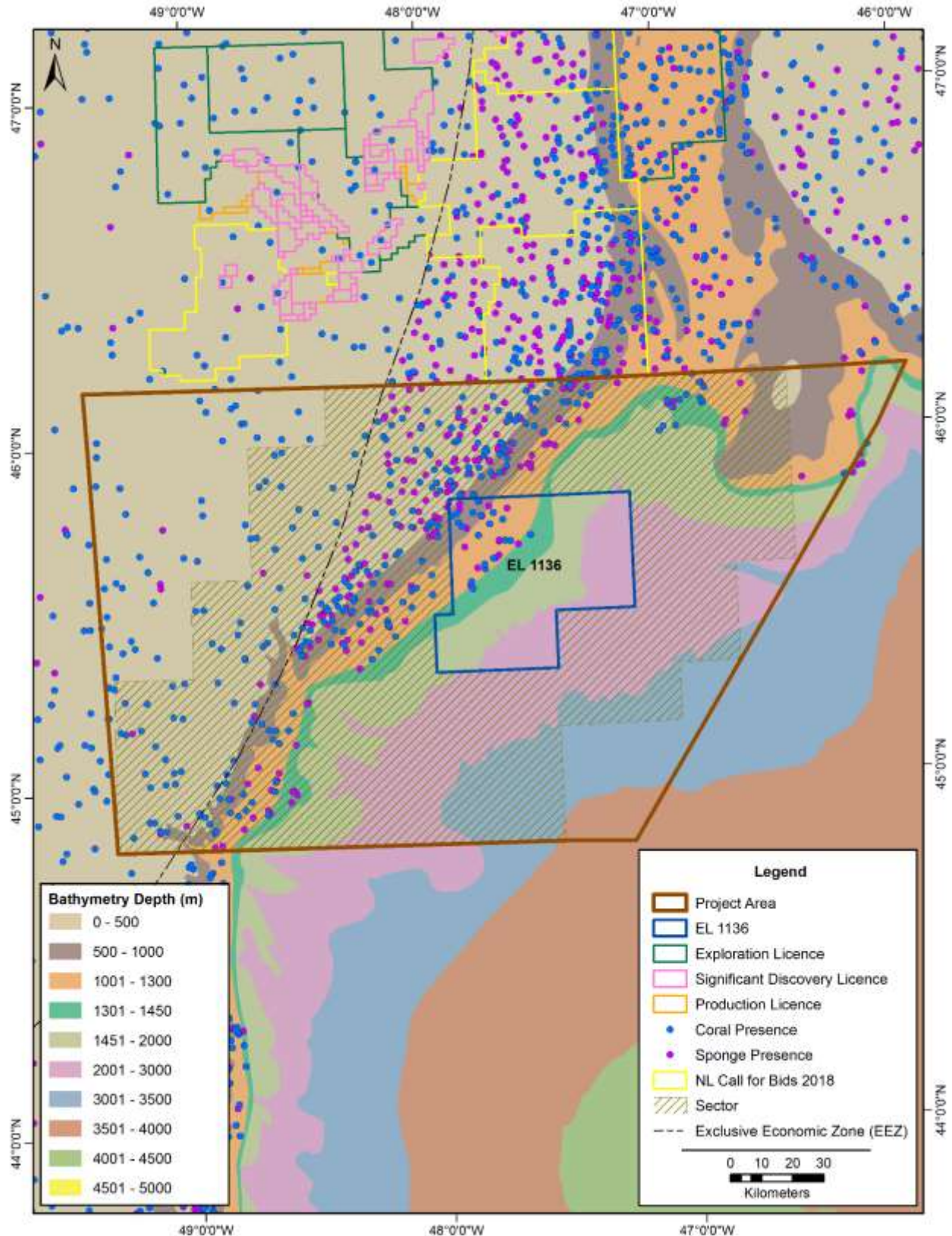
A variety of existing and available sources provide relevant information related to marine fish and fish habitat in and around the Project Area and other portions of the marine environment off eastern Newfoundland.

A variety of bird species occur within the Project Area and in adjacent marine and coastal regions, including seabirds and other avifauna that inhabit the offshore region at particular or extended periods for breeding, feeding, migration and other activities. Important habitats for birds have also been identified at locations along the coastline of eastern Newfoundland, well outside of the Project Area. Existing information sources are available related to the characteristics, presence and distribution of marine and migratory birds within and around the Project Area. The Eastern Newfoundland SEA (Amec 2014), for example, includes a detailed overview of the presence, life histories, and spatial and temporal distributions of marine avifauna within and around the region. The current Eastern Canadian Seabirds at Sea (ECSAS) dataset, as well as other available literature and datasets, and marine bird sightings data collected by ExxonMobil and other operators working in the area, provide additional information and insights on key species, times and locations for use in any required EIS.

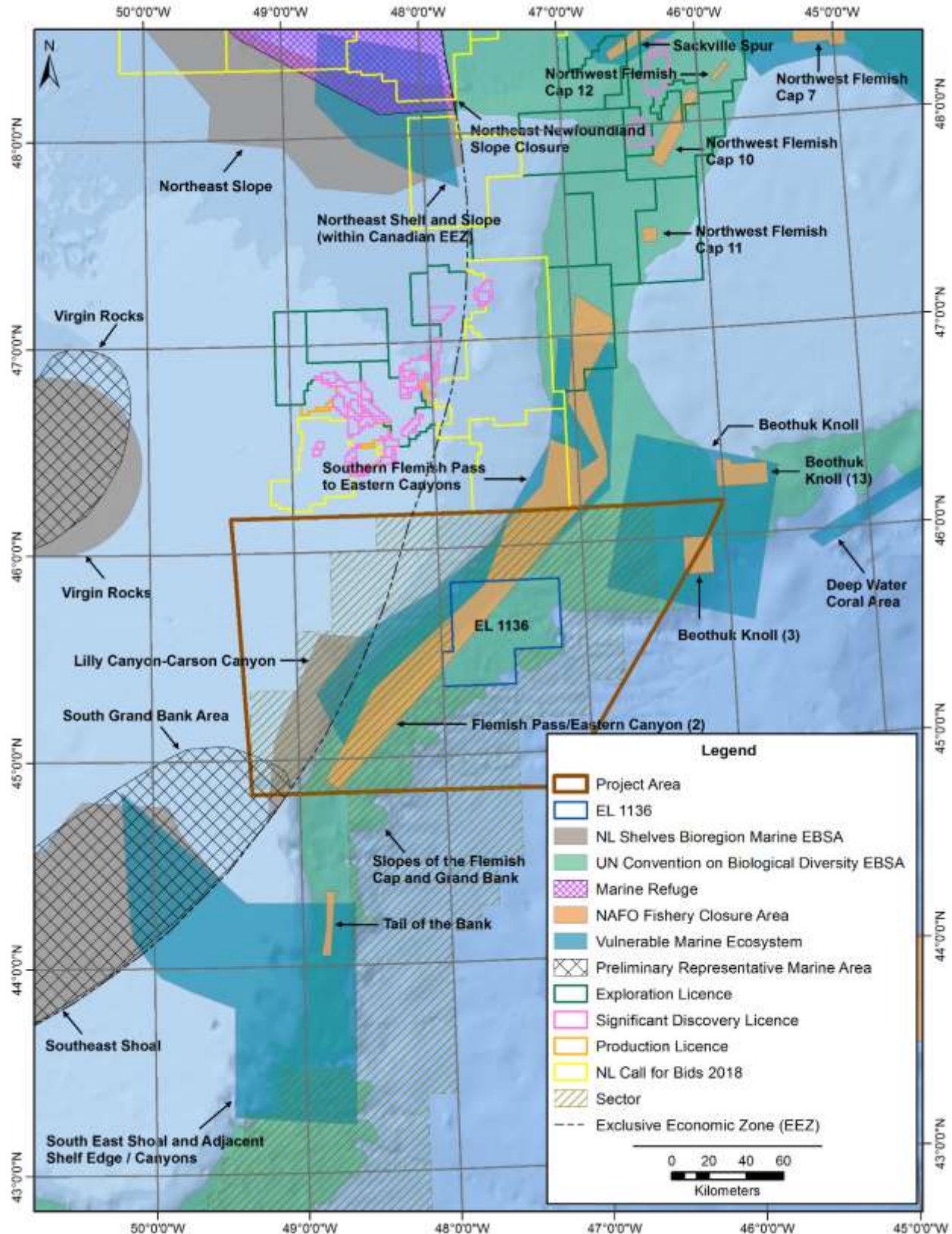
The waters off eastern Newfoundland support a diverse assemblage of marine fauna that includes more than 20 marine mammals and as many as five sea turtle species, many of which are considered to be at risk or otherwise of special conservation concern. The Eastern Newfoundland SEA (Amec 2014) summarizes the distribution and abundance of marine mammals and sea turtles in the region and describes these species' relevant life history characteristics. Marine mammals known or considered likely to occur within the area include baleen and toothed whales, dolphins and porpoises, and seals. Marine mammal and sea turtle species vary considerably in their likelihood of presence, and in the locations and habitat types that they use and the times at which they occur in or pass through the region. Key feeding grounds such as the Grand Banks are of particular importance to marine mammals and turtles, and several Ecologically and Biologically Significant Areas (EBSAs) have been identified due in part to their importance to a number of marine mammal species.

A number of on land, marine and coastal areas within and off eastern Newfoundland have been designated as protected under provincial, federal and/or other legislation and processes, or have been formally identified as being otherwise special or sensitive due to their ecological, historical and/or socio-cultural characteristics and importance. This Project will not occur within, or otherwise interact directly with, any of the existing provincial or federal parks, Ecological Reserves, Wildlife Reserves, Marine Protected Areas or Areas of Interest, Migratory Birds Sanctuaries, Important Bird Areas, heritage sites (provincial, national or UNESCO), or other areas that have been designated as protected or identified for their special features on or around the island of Newfoundland. The overall Project Area does, however, overlap with a number of identified special areas in the offshore environment (Figure 3-2), for which there are no known prohibitions of marine activities such as that being proposed as part of this Project.

**Figure 3-1: Primary Water Depth Zones of the Project Area and Surrounding Marine Environments and Corals / Sponge Distributions Based on Existing Datasets**





**Figure 3-2: Special Areas off Eastern Newfoundland in Proximity to the Project Area**

### 3.4 Socioeconomic Environment

Fisheries are an important component of the socioeconomic environment of Newfoundland and Labrador and other parts of Canada, including the communities and regions along the coastline of eastern Newfoundland. Commercial fisheries in this region are extensive and diverse (Figure 3-3), with the Project Area overlapping a number of NAFO Divisions and Unit Areas. Multiple regulatory jurisdictions pertain to marine fish and fisheries within and around the Project Area: the Government of Canada has jurisdiction over fish stocks and fishing activities within the 200 nautical mile limit (Exclusive Economic Zone, EEZ) and for benthic invertebrates (such as crab) across the entire continental shelf; and NAFO manages groundfish activities and other resources beyond that 200-mile limit.

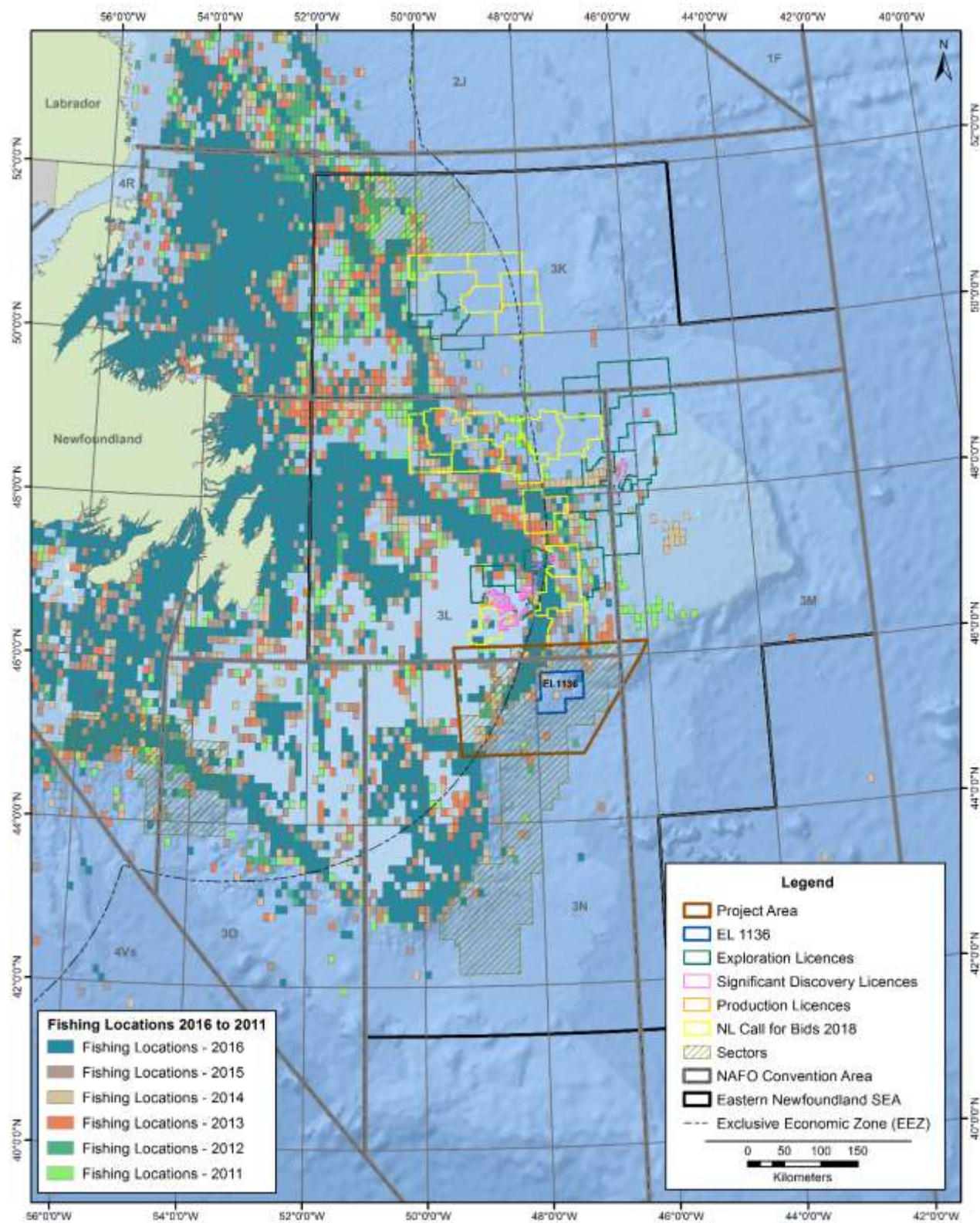
Several Indigenous groups hold commercial fishing licences for NAFO Divisions off eastern Newfoundland. This includes licences that permit access to species and locations within NAFO Divisions 3KLMN. Several First Nations communities and councils in the DFO Maritimes and Gulf Regions hold communal licences which permit access to, for example, NAFO Subarea 3 fisheries. The closest Reserve to the Project is Conne River, located on the south coast of Newfoundland several hundred kilometers west of the Project Area.

Several fisheries survey programs are also undertaken by government and/or industry, including DFO Multispecies RV Trawl Surveys (annual standardized bottom-trawl surveys to collect information for managing and monitoring fish resources in the Newfoundland and Labrador Region). An annual Industry-DFO Collaborative Post-season Trap Survey for snow crab is conducted in NAFO Divisions 2J3KLOPS4R using commercial and modified snow crab traps at established trap stations starting in late August or early September after the commercial snow crab season has ended.

Other human activities take place in parts of the Project Area on a year-round or seasonal basis. General shipping traffic within and through the region includes marine tanker traffic and supply vessels associated with the existing offshore oil development and activities, as well as cargo ships, fishing vessel transits, and other vessel traffic. Naval training exercises also occur in the general area, which involve surface vessels and submarines. Unexploded ordnance sites, which include shipwrecks and submarines as well as munitions dump sites (Amec 2014), are known in the Atlantic Ocean but not within the Project Area. A number of existing marine cable networks cross through the region.

The area off eastern Newfoundland is subject to considerable oil and gas exploration activity, including geophysical surveys and drilling programs, with many thousands of kilometers of seismic survey data collected and several hundred wells having been drilled to date. Offshore oil production activities have also been occurring since the 1990s, including several producing oilfields (Hibernia, Terra Nova, White Rose and (pending) Hebron). These offshore oil and gas exploration and development activities include a variety of ancillary and supporting activities.



**Figure 3-3: Commercial Fisheries Locations, All Species (2011-2016)**



## 4 ENGAGEMENT

Engagement is a cornerstone of the EA process, and is a key component of ExxonMobil's approach to planning and implementing its exploration programs and other business activities. A number of initiatives have been undertaken, are in progress, or are being planned in relation to the Project, including discussions with relevant government departments and agencies, Indigenous groups, stakeholder organizations and members of the public.

### 4.1 Regulatory Engagement

Various provincial and federal government departments and agencies have regulatory responsibilities or other mandates and interests related to the Project and its potential environmental effects. To date, ExxonMobil has met with a number of regulatory organizations (Canadian Environmental Assessment Agency, C-NLOPB) and plans to meet with or otherwise provide Project information to others, including:

- Fisheries and Oceans Canada (DFO);
- Environment and Climate Change Canada;
- Transport Canada;
- Department of National Defence;
- Natural Resources Canada (NRCan)
- NL Department of Municipal Affairs and Environment;
- NL Department of Fisheries and Land Resources; and the
- NL Department of Natural Resources.

ExxonMobil will continue to consult directly with relevant government departments and agencies as part of the planning and completion of any required EIS for the Project, as well as in any post-EA environmental permitting and overall environmental management initiatives during its eventual implementation.

### 4.2 Indigenous Engagement

ExxonMobil is committed to ensuring that Indigenous groups are appropriately informed and engaged regarding the company's on-going and planned activities, particularly when these groups are known to reside and/or undertake activities in areas where the company is planning to carry out its operations.

A number of Indigenous groups reside in Newfoundland and Labrador and elsewhere in Eastern Canada. ExxonMobil is aware that fishing enterprises associated with several of these organizations do or may undertake commercial fishing activity within NAFO Divisions that overlap parts of the Project Area. This includes fishing activity by: Labrador Inuit (Nunatsiavut Government); Labrador Innu (Innu Nation); NunatuKavut Community Council; Conne River Mi'kmaw (Miawpukek First Nation); and the Qalipu Mi'kmaq First Nation Band. ExxonMobil is not aware, however, that these or any other Indigenous groups hold, claim or otherwise assert Aboriginal or Treaty rights within or near the Project Area, pursuant to Section 35 of the *Canadian Constitution Act*, 1982. It is ExxonMobil's understanding that these organizations undertake fishing activity off eastern Newfoundland through commercial licences issued by the federal government under the *Fisheries Act* and its associated *Aboriginal*

*Communal Fisheries Licencing Regulation*, as well as other government policies and strategies that are designed to involve Indigenous people and communities in commercial fisheries in Canada.

As part of its engagement with relevant commercial fishing interests in and near the Project Area during the EA process, ExxonMobil will engage with Indigenous organizations that are known to be involved in the commercial fishery in the area. The Company has to date contacted the following Indigenous groups to provide information about the Project and to seek any initial input:

### **Newfoundland and Labrador**

- Labrador Inuit (Nunatsiavut Government)
- Labrador Innu (Innu Nation)
- NunatuKavut Community Council
- Qalipu Mi'kmaq First Nation Band
- Miawpukek First Nation
- Mi'kmaq Alsumk Mowimsikik Kaqoey Association (MAMKA)

### **Nova Scotia**

- 11 Mi'kmaq First Nation groups represented by Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO):
  - Acadia First Nation
  - Annapolis Valley First Nation
  - Bear River First Nation
  - Eskasoni First Nation
  - Glooscap First Nation
  - Membertou First Nation
  - Paqtnkek Mi'kmaw Nation
  - Pictou Landing First Nation
  - Potlotek First Nation
  - Wagmatcook First Nation
  - Waycobah First Nation
- Millbrook First Nation
- Sipekne'katik First Nation

### **New Brunswick**

- Eight Mi'gmaq First Nations groups represented by Mi'gmawe'l Tplu'taqnn Inc. (MTI, correspondence directed through MTI):
  - Fort Folly First Nation
  - Eel Ground First Nation
  - Pabineau First Nation
  - Esgenoôpetitj First Nation
  - Buctouche First Nation
  - Indian Island First Nation
  - Eel River Bar First Nation
  - Metepnagiag Mi'kmaq First Nation
- Elsipogtog First Nation
- Five Maliseet First Nation groups represented by Wolastoqey Nation of New Brunswick (WNNB):
  - Kingsclear First Nation
  - Madawaska Maliseet First Nation

- Oromocto First Nation
- Saint Mary's First Nation
- Tobique First Nation
- Woodstock First Nation
- Peskotomuhkati Nation at Skutik (Passamaquoddy)

### **Prince Edward Island**

- Mi'kmaq Confederacy of PEI
- Abegweit First Nation
- Lennox Island First Nation

### **Quebec**

- Three Mi'gmaq First Nation groups represented by Mi'gmawei Mawiomí Secretariat (MMS, correspondence directed through MMS)
  - Micmas of Gesgapegiag
  - La Nation Micmac de Gespeg
  - Listuguj Mi'gmaq Government
- Les Innus de Ekuanitshit
- Innu First Nation of Nutashkuan

This included writing to each Indigenous group in January 2018 to notify them of the Project, and to provide an initial opportunity for them to forward any questions or comments regarding the Project and its potential environmental effects for consideration in the EA. They were also invited to share further information and engage as the EA review progresses. Several groups have responded to ExxonMobil confirming receipt of the original correspondence. As of the time of finalization and submission of this Project Description, ExxonMobil has not yet received any specific questions or concerns related to the Project and its potential effects.

## **4.3 Stakeholder and Community Engagement**

ExxonMobil regularly consults with applicable stakeholders through existing forums (such as the One Ocean initiative) and conducts specific engagements with interested persons and groups if and as new activities, issues and requirements arise. During the preparation of this Project Description, ExxonMobil has met with and/or otherwise contacted the following stakeholder groups:

- Fish, Food and Allied Workers Union (FFAW-Unifor);
- One Ocean;
- Association of Seafood Producers;
- Ocean Choice International (OCI); and
- Nature NL.

Several organizations have responded to indicate their overall familiarity with offshore oil and gas exploration programs and with the relevant EA processes, as well as their intention to participate in and respond through the EA review for the Project. No additional or specific environmental issues or concerns were raised by any of the stakeholder groups contacted to date.

As part of its Project planning, ExxonMobil will continue to meet or otherwise communicate as appropriate with these and other key stakeholders, including other fishing industry representatives, communities, environmental organizations, and others to provide Project details and to identify and discuss any information, questions or concerns that these stakeholders may have.

Should an EIS be required for the Project under CEAA 2012, ExxonMobil will design and implement an engagement program that will provide various mechanisms and opportunities for persons and groups to receive and review information, as well as to provide information and perspectives related to the Project and its potential effects. The results of this engagement program will be used to identify key issues and questions to be considered in the EIS, and thus, to appropriately focus the analysis. Identified questions and issues will be recorded and considered in Project planning and assessment, and for appropriate follow-up.

## 5 POTENTIAL PROJECT-RELATED ENVIRONMENTAL INTERACTIONS

The implementation and conduct of the offshore oil and gas exploration activities that comprise this Project have the potential to interact with, and result in associated changes to, a number of environmental components, some of which are outlined here.

### 5.1.1 Planned Project Components and Activities

Some of the key components and activities that may be associated with the Project and which would be relevant to any environmental effects analysis include:

- a) The presence and movement of the drilling unit(s), supporting vessels / aircraft and equipment;
- b) Drilling activities and the associated discharge and deposition of drill cuttings / fluids;
- c) Project-related noise into the atmospheric and marine environment;
- d) Air emissions (exhausts, well testing / flaring) and lighting on Project vessels and equipment;
- e) The generation of solid and liquid waste materials; and
- f) Eventual well abandonment and rehabilitation activities.

Based on these elements, some potential environmental issues and interactions that may be associated with the Project are identified in Table 5.1.

Any potential environmental issues and interactions that may be associated with the Project can be avoided or reduced through good planning and sound operational practices and procedures, supported by standard and well-established mitigations. A summary of some of the standard mitigation measures that are often implemented off Newfoundland and Labrador is also provided in Table 5-1, for initial review and illustrative purposes. These and/or other planning and management measures, in combination with ExxonMobil's own policies, principles and environmental management plans and procedures, will help to ensure this Project is planned and completed in a manner that avoids or reduces potential environmental effects.

**Table 5-1: Potential Environmental Interactions and Associated Mitigation**

Potential Environmental Changes	Potential Mitigation Measures (For Illustration)
<ul style="list-style-type: none"> <li>Possible effects on water quality and the contamination, smothering or other alteration of marine habitats and benthic organisms due to physical disturbance of the substrate (and associated sedimentation), the discharge and deposition of drill cuttings and/or fluids, and other potential environmental emissions during planned activities.</li> <li>Possible temporary avoidance of areas by marine fish, birds, mammals and sea turtles due to</li> </ul>	<ul style="list-style-type: none"> <li>Avoidance of known important and sensitive species and areas / times where possible in the planning and conduct of oil and gas activities.</li> <li>Minimizing the amount of associated vessel and aircraft traffic, the use of existing and common travel routes where possible and the avoidance of low-level aircraft operations wherever possible.</li> <li>Minimizing environmental discharges and emissions from planned operations and activities, including compliance with relevant regulations and standards.</li> <li>Pre-drilling surveys of the sea bed to assess the potential presence of sensitive benthic micro-habitats (such as corals).</li> <li>Selection of non-toxic drilling fluids, including the use of WBMs wherever possible and technically feasible.</li> <li>Treatment of operational discharges (such as sewage, deck drainage) prior to release in compliance with the <i>Offshore Waste</i></li> </ul>

Potential Environmental Changes	Potential Mitigation Measures (For Illustration)
<p>underwater noise or other disturbances, which may alter their presence and abundance as well as disturbing movements / migration, feeding or other activities.</p> <ul style="list-style-type: none"> <li>• Possible attraction of marine fish, birds, mammals and sea turtles to drill rigs and vessels, with increased potential for injury, mortality, contamination or other interactions (e.g., collisions).</li> <li>• Potential effects on fisheries (landings and values) and other marine activities due to possible biophysical effects (including resource abundance, distribution or quality).</li> <li>• Interference with and possible reduced access to (safety zones) preferred fishing or other marine areas during Project activities in certain locations, with possible decreases in activity success, efficiency, value or enjoyment.</li> <li>• Potential damage to fishing gear, vessels of other equipment and infrastructure as a result of direct interactions with Project equipment, activities or environmental discharges.</li> <li>• Potential direct or indirect interactions with protected and sensitive areas in the marine environment, and associated impacts on their ecological integrity (ecological, aesthetic) and/or human use and value.</li> </ul>	<p><i>Treatment Guidelines</i> and other applicable regulations and standards.</p> <ul style="list-style-type: none"> <li>• Installation and use of oil water separators to treat contained deck drainage, with collected oil stored and disposed of properly.</li> <li>• Minimizing the use of artificial lighting, where possible with due regard to safety and associated operational requirements.</li> <li>• Programs and protocols for the collection and release of marine birds that become stranded on offshore installations, including associated regulatory guidance and permit requirements.</li> <li>• Inspections of ship hulls, drilling units and equipment for alien invasive species and associated follow-up maintenance. Maximizing use of local vessels, drilling unit and equipment where possible.</li> <li>• Avoiding or minimizing flaring, and the use of high efficiency burners where flaring is required.</li> <li>• Appropriate handling, storage, transportation and on-shore disposal of solid and hazardous wastes.</li> <li>• Water contaminated with hydrocarbons generated during flow testing (within certain tolerances), can be atomized in the flare (using high efficiency burners) or shipped on-shore for disposal</li> <li>• Selection and screening of chemicals under the <i>Offshore Chemical Selection Guidelines for Drilling and Production Activities on Frontier Lands</i>.</li> <li>• Spill prevention plans and procedures, with associated and effective spill preparedness and response plans in place.</li> <li>• On-going information gathering and analysis regarding fishing areas and times and continued monitoring of fishing activity.</li> <li>• Establishment and communication of safety / no-fishing zones.</li> <li>• Active and continuous communications and coordination procedures.</li> <li>• Issuance of Notices to Mariners and other notifications / direct industry communications.</li> <li>• Educational and training initiatives for Project personnel.</li> <li>• Establishment, communication and implementation of a Fishing Gear Damage or Loss Compensation Program (as per the associated Guidelines).</li> </ul>

Table 5-2 links each of the potential environmental interactions that may be associated with Project components and activities to the environmental components and issues specified under *CEAA 2012*.

**Table 5-2 Environmental Components/Issues and Potential Environmental Interactions Relevant to CEAA 2012 – Planned Project Components and Activities**

Environmental Component / Issue	Relevant Section(s) of CEAA 2012	Potential Environmental Interactions / Changes (See Also Associated Mitigations Described Earlier)
Fish, Fish Habitat, and Aquatic Species	5(1)(a)(i) 5(1)(a)(ii)	<ul style="list-style-type: none"> <li>Disturbances (noise, lights, others) associated with the drill rig and vessel movements, resulting in possible avoidance or attraction by marine biota (fish, mammals, turtles).</li> <li>Associated direct (injury or mortality) or indirect (alterations of key life history activities and requirements, such as migration, reproduction, communication, availability and quality of food sources) effects on marine biota</li> <li>Possible effects on water quality and the contamination, smothering or other alteration of marine habitats and benthic organisms due to physical disturbance of the substrate, the discharge and deposition of drill cuttings and/or fluids, or other solid and liquid wastes.</li> </ul>
Migratory Birds	5(1)(a)(iii)	<ul style="list-style-type: none"> <li>Attraction and disturbance / disorientation, potential injury or mortality</li> <li>Possible health effects due to contamination of individuals and/or their habitats</li> <li>Potential effects on prey species / food sources</li> </ul>
Project Activities Occurring on Federal Lands	5(1)(b)(i)	<ul style="list-style-type: none"> <li>The overall Project Area includes marine areas (lands) that are located both within and beyond Canada's EEZ on the outer continental shelf.</li> <li>Where planned Project components and activities occur on or near such federal lands, any resulting environmental effect described in this Project Description may affect existing environmental conditions on these lands.</li> </ul>
Transboundary Issues	5(1)(b)(ii) 5(1)(b)(iii)	<ul style="list-style-type: none"> <li>Most planned and routine Project activities that take place within the area of Canada's jurisdiction are not anticipated to result in environmental emissions or other direct interactions that will extend to the environment outside Newfoundland and Labrador or outside the marine waters under the jurisdiction of Canada.</li> <li>Air emissions (including GHGs) may extend to other jurisdictions.</li> <li>Although the direct environmental zone of influence of any Project components and activities that occur within the area of Canada's jurisdiction are not expected to extend to other jurisdictions, the Project may, however, affect environmental components (such as migratory</li> </ul>

Environmental Component / Issue	Relevant Section(s) of CEEA 2012	Potential Environmental Interactions / Changes (See Also Associated Mitigations Described Earlier)
		fish, aquatic species, or birds and air and water quality) that extend to and/or move both within and outside the areas under the jurisdiction of Canada.
Health and Socio-Economic Conditions for Aboriginal and Non-Aboriginal People	5(1)(c)(i) 5(2)(b)(i)	<ul style="list-style-type: none"> <li>• Potential effects on fisheries (landings and values) and other marine activities due to biophysical changes (resource availability, distributions, quality), access / interference, damage to equipment or other direct or indirect interactions.</li> <li>• Potential interactions with protected or special marine areas and possible associated effects on their human use and value.</li> <li>• Planned Project activities are not expected to result in any changes to the environment that would affect human health conditions.</li> </ul>
Physical and Cultural Heritage, or Resources of Historical, Archaeological, Paleontological, or Architectural Significance	5(1)(c)(ii) 5(1)(c)(iv) 5(2)(b)(ii) 5(2)(b)(iii)	<ul style="list-style-type: none"> <li>• No interactions or adverse effects are anticipated as a result of planned Project activities in this marine environment, which is located nearly 300 km offshore. (To be confirmed through pre-drilling well site surveys and associated mitigations).</li> </ul>
Current Use of Lands and Resources for Traditional Purposes by Aboriginal Groups	5(1)(c)(iii)	<ul style="list-style-type: none"> <li>• A number of Indigenous groups are known to undertake commercial fishing activity off eastern Newfoundland.</li> <li>• ExxonMobil is not aware that these (or any other) Indigenous groups hold, claim or otherwise assert Aboriginal or Treaty rights within or near the Project Area, nor undertake any traditional activities within or near the Project Area.</li> <li>• There are no documented food, social, or ceremonial licences within the Project Area.</li> <li>• There are therefore no anticipated interactions with or adverse effects on the current use of lands and resources for traditional purposes by Aboriginal groups as a result of planned Project activities.</li> </ul>
Other Changes to the Environment Directly Related or Necessarily Incidental to a Federal Authority's Exercise of a Power or Performance of a Duty or Function in Support of the Project	5(2)(a)	<ul style="list-style-type: none"> <li>• None identified in addition to the potential environmental effects described above.</li> </ul>



### 5.1.2 Potential Unplanned Events

Environmental incidents that may be associated with offshore drilling programs include potential blowouts (subsea and surface), as well as other possible spills of hydrocarbons or other substances from the drilling unit and/or associated vessel activities, which may vary considerably in terms of their nature, scale, duration and potential environmental consequences.

Oil spill prevention is a key focus of ExxonMobil's plans and activities and an integral component of all aspects of the planning and implementation of its offshore petroleum exploration and development activities. This includes the incorporation of multiple preventative barriers in Project design and execution, such as in well and casing design, BOP design and associated activation and control procedures, well control and detection processes, the definition of severe environmental operating conditions and associated contingency (including disconnect) procedures, and other relevant measures. In the very unlikely event of a spill, ExxonMobil's project and site-specific OSRP will detail the equipment and procedures that will be implemented to effectively respond to such an incident.

Table 5-3 links the potential environmental interactions that may be associated with unplanned Project components and activities to environmental components and issues specified under CEAA 2012.

**Table 5-3: Environmental Components/Issues and Potential Environmental Interactions Relevant to CEAA 2012 – Unplanned Project Components and Activities**

Environmental component/issue	Relevant section(s) of CEAA 2012	Potential environmental interactions/changes (see also associated mitigations described earlier)
Fish, Fish Habitat, and Aquatic Species	5(1)(a)(i) 5(1)(a)(ii)	<ul style="list-style-type: none"> <li>Changes in the presence, abundance, distribution and/or health of marine fish / other aquatic species as a result of exposure to accidental spills (including injury or mortality through physical exposure, ingestion, or effects on prey and habitats / water quality).</li> </ul>
Migratory Birds	5(1)(a)(iii)	<ul style="list-style-type: none"> <li>Changes in the presence, abundance, distribution and/or health of marine birds as a result of exposure to accidental spills (including injury or mortality through physical exposure, ingestion, or effects on prey and important habitats).</li> </ul>
Project Activities Occurring on Federal Lands	5(1)(b)(i)	<ul style="list-style-type: none"> <li>The overall Project Area includes marine areas (lands) that are located both within and beyond Canada's EEZ on the outer continental shelf.</li> <li>Where Project components and activities and any associated unplanned events (such as an oil spill) occur on or near such federal lands, any associated environmental effects as described in this Project Description may affect existing environmental conditions on these lands.</li> </ul>
Transboundary Issues	5(1)(b)(ii) 5(1)(b)(iii)	<ul style="list-style-type: none"> <li>An accidental event could result in transboundary effects by extending outside an area of Canada's jurisdiction, as well as by affecting environmental</li> </ul>

Environmental component/issue	Relevant section(s) of CEEA 2012	Potential environmental interactions/changes (see also associated mitigations described earlier)
		<p>components (such as migratory fish, aquatic species, or birds and air and water quality) that extend and/or move both within and outside the areas under the jurisdiction of Canada. No land masses are anticipated to be affected.</p> <ul style="list-style-type: none"> <li>Oil spill modelling and analyses (previous and possible additional studies) assess the nature and geographic extent of any such accidental event and its potential effects.</li> <li>Any associated air emissions (including GHGs) may extend to other jurisdictions.</li> </ul>
Health and Socio-Economic Conditions for Aboriginal and Non-Aboriginal People	5(1)(c)(i) 5(2)(b)(i)	<ul style="list-style-type: none"> <li>Potential effects of offshore oil spills or other unauthorized discharges on other marine activities (including fishing) equipment and resources and the resulting implications for users and their livelihoods and communities (resulting from loss of resources, taint / quality, loss of markets, gear damage).</li> <li>Potential interactions with protected or special marine areas and associated effects on their human use and value.</li> </ul>
Physical and Cultural Heritage, or Resources of Historical, Archaeological, Paleontological, or Architectural Significance	5(1)(c)(ii) 5(1)(c)(iv) 5(2)(b)(ii) 5(2)(b)(iii)	<ul style="list-style-type: none"> <li>No interactions or adverse effects are anticipated as a result of unplanned Project activities in this marine environment, which is located nearly 300 km offshore.</li> <li>Oil spill modelling and analyses (previous and possible additional studies) assess the nature and geographic extent of any such accidental event and its potential effects.</li> </ul>
Current Use of Lands and Resources for Traditional Purposes by Aboriginal Groups	5(1)(c)(iii)	<ul style="list-style-type: none"> <li>A number of Indigenous groups are known to undertake commercial fishing activity off eastern Newfoundland.</li> <li>ExxonMobil is not aware that these (or any other) groups hold, claim or otherwise assert Aboriginal or Treaty rights within or near the Project Area, nor undertake any traditional activities within or near the Project Area.</li> <li>There are no documented food, social, or ceremonial licences within the Project Area.</li> <li>Oil spill modelling and analyses (previous and possible additional studies) assess the nature and geographic extent of any such accidental event and its potential effects, including the potential for these effects to extend to or otherwise affect lands and resources that are currently used by an Aboriginal group for traditional purposes.</li> </ul>

Environmental component/issue	Relevant section(s) of CEAA 2012	Potential environmental interactions/changes (see also associated mitigations described earlier)
Other Changes to the Environment Directly Related or Necessarily Incidental to a Federal Authority's Exercise of a Power or Performance of a Duty or Function in Support of the Project	5(2)(a)	<ul style="list-style-type: none"> <li>None identified in addition to the potential environmental effects described above.</li> </ul>

## 5.2 Environmental Assessment Scoping Considerations

The Project will involve each of the components and activities described in Chapter 2 of the Project Description, including those associated with the drilling of exploration and possible delineation wells, VSP surveys, well testing, eventual well abandonment or suspension, and relevant supply and service activities. Any Project-related onshore support activities will take place at an existing, established onshore supply facility that is operated by a third-party contractor, has been previously approved under applicable regulatory processes, and provides services to multiple offshore operators. It is therefore proposed that these onshore components and activities not be included as part of the scope of the Project for EA purposes. ExxonMobil recognizes that should an EA be required under CEAA 2012, the scope of the Project and its EA will be set by the Canadian Environmental Assessment Agency.

Based on the initial information and analysis, a preliminary list of potential Valued Components (VCs) upon which any eventual EIS will be focused is provided below:

- a) Marine fish and fish habitat (including Species at Risk);
- b) Marine and migratory birds (including Species at Risk);
- c) Marine mammals and sea turtles (including Species at Risk);
- d) Special areas;
- e) Indigenous peoples; and
- f) Fisheries and other ocean uses.

ExxonMobil recognizes that the scope and focus of any EIS that may be required under CEAA 2012, including the final selection of VCs upon which it will focus, will be informed by and based upon the results of the review processes described previously, including input from participating governmental interests, and will be set by the Canadian Environmental Assessment Agency.