APPENDIX H

Indigenous Knowledge Desktop Study for the
Bay Du Nord Development Project (Lewis et al. 2018)

FIRST NATIONS ENGINEERING SERVICES LIMITED

Indigenous Knowledge Desktop Study

for the

Bay du Nord Development Project

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1.1 SCOPE OF WORK

Equinor Canada Ltd. (Equinor), and its partner Husky Oil Operations Limited, have submitted the Bay du Nord (BdN) Development Project (see Figure 1.1) to the Canadian Environmental Assessment Agency (Agency) for environmental assessment (Canadian Environmental Assessment Registry (CEAR), 2018a). The proponent proposes to install and operate a floating offshore oil and gas production facility in the Flemish Pass, located approximately 450 kilometres east of St. John's Newfoundland (CEAR, 2018a), and outside of Canada's 200 nm Exclusive Economic Zone on the outer continental shelf (CEAR, 2018b). The Project includes offshore construction, installation, hook-up and commissioning, drilling, production operations, maintenance and decommissioning activities, as well as associated supporting surveys, field work, and supply and servicing activities and is proceeding under *Canadian Environmental Assessment Act,* 2012 (CEAR, 2018b). The project description identifies 2020 as the potential project start-up phase and 2045 as the start of the decommissioning phase of the project (2018a).

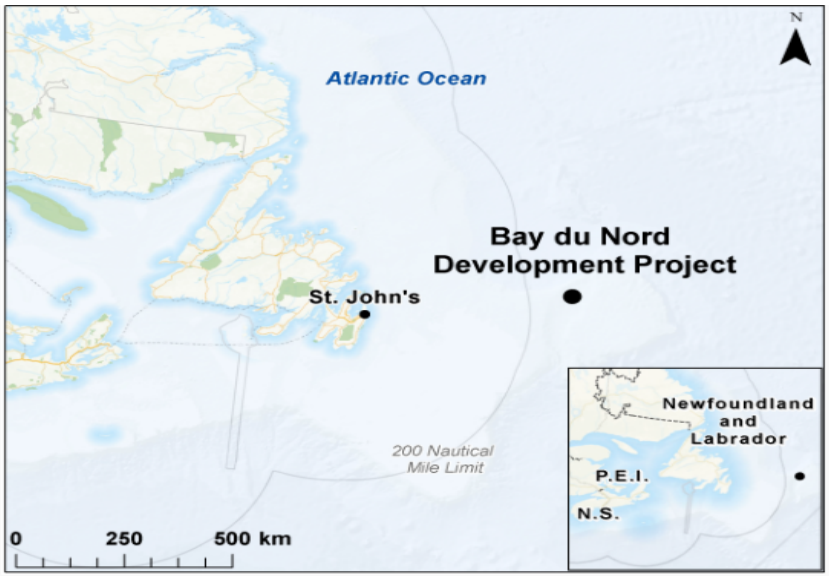

Figure 1.1 Bay du Nord Development Project (Source: CEAR, 2018a)

The project area is approximately 4,900km^2 in size with water depths, ranging from 340m-1,200m, however, the footprint of the project facilities on the seabed will only cover approximately 7km^2 (CEAR, 2018a). The Core Development of the BdN fields includes an area within the project area that is approximately 450km^2 in size and water depths here range

from depths of 1,000m-1,200m (CEAR, 2018a). The purposed project area includes Northwest Atlantic Fisheries Organization (NAFO) Divisions 3M and 3L (see Figure 1.2).

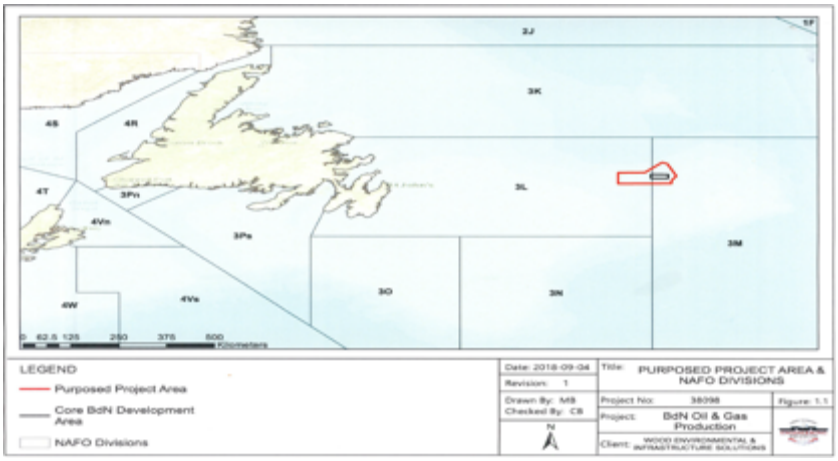

Figure 1.2 Proposed Project Area:
Northwest Atlantic Fisheries Organization (NAFO) Divisions

Equinor, as a values-based organization, is committed to creating lasting value for communities, and in its approach to sustainability is guided by the principle of preventing harm to local environments, respecting Indigenous[1] rights, and being open and transparent (Equinor, 2018).

While the project as scoped for purposes of environmental assessment does not include land-based activities, the Agency has directed Equinor to engage with a potentially affected Indigenous groups in Newfoundland and Labrador, Nova Scotia, New Brunswick, Prince Edward Island and Quebec (41 groups in total) to assist the Agency in fulfilling their statutory obligations under *Canadian Environmental Assessment Act,* 2012 to Aboriginal peoples and to assist the Agency in fulfilling the Crown's constitutional obligations for consultation when a project has the potential to impact asserted or established Aboriginal or treaty rights.

[1] Indigenous is the term used throughout this document. Indigenous is consistent with the terminology of the United Nations Declaration on the Rights of Indigenous Peoples. The use of Aboriginal, First Nations, Native, or Indians will be used is when the terminology is used in legal terminology (legislation/regulation), in the Canadian Environmental Assessment Agency EIS Guidelines, or is reflected in the name of an organization.

The proponent is expected to make reasonable efforts to integrate Indigenous Knowledge (IK) into the assessment of environmental effects on health and socio-economic conditions, physical and cultural heritage, current land and resource use for traditional purposes, or any structure site or thing of historical, archaeological, paleontological, or architectural significance, using spatial and temporal boundaries that may vary according to the group, including those related to the current use of lands and resources for traditional purposes (CEAR, 2018f). The Agency recognizes that confidentiality provisions for sharing the IK is at the discretion of individuals and communities, and if shared confidentially with a proponent, those provisions must be honoured.

The rationale of the Agency is that while the Project is located at least 630 km from the nearest Indigenous community (Miawpukek First Nation, NL), there is the potential for the Project to have impacts on fish and fish habitat, particularly migratory species of fish such as salmon and American eel which may be of cultural, social or economic importance to various Indigenous groups, or on migratory mammals and birds. Equinor plans to work with the various groups to understand IK and traditional land use (TLU) about fish and fish habitat, migratory mammals, and birds through community interviews or other means as worked out with the communities/groups. However, Equinor would like to supplement the interviews with a desktop review of publicly available information, including IK and TLU information provided in other projects, contained in land claims documentation, in legal decisions, and in any other source within the public domain containing information for the general documentation of TK and TLU.

The proponent has recognized that while information may be available on IK and TLU, less is understood about how IK can further their understanding of the health effects of a project, or the effects of a project on the socio-economic conditions of Indigenous groups, therefore, this report is intended to also provide Equinor with an understanding of how direct or indirect impacts to IK and TLU, including potential cumulative impacts, may be affecting Indigenous groups in the region.

1.2 METHODOLOGY

First Nations Engineering Services Limited (FNESL) is a 100% Indigenous owned consulting engineering company located in Ohsweken, Ontario, with offices in Alberta and British Columbia. FNESL focuses on infrastructure engineering, with a commitment to ethical and sustainable development.

Equinor has been directed by the Agency to assist them in fulfilling their statutory obligations under the *Canadian Environmental Assessment Act,* 2012 to Aboriginal peoples and to assist the Agency in fulfilling the Crown's constitutional obligations for consultation when a project has the potential to impact asserted or established Aboriginal or treaty rights. Therefore, FNESL presents an overview of the statutory and constitutional obligations of the Crown, and how meeting the obligations for adequate consultation on the rights of Indigenous groups are important considerations in the decision-making processes for environmental assessment.

Equinor has been further directed to integrate Indigenous Knowledge (IK) into the assessment of the environmental effects on health and socio-economic conditions as a result of impacts to traditional and current land and resource use. FNESL has been directed to conduct a focused regional desktop review of publicly available literature respecting IK or TLU on fish and fish habitat from the various groups throughout the Atlantic Region and along the Lower North Shore and Gaspé region of Québec, with specific focus upon migratory species of fish, marine mammals, and birds of cultural, social and economic importance to the groups, particularly salmon and American eel. FNESL will prepare a report documenting the results of the desktop review for submission to Equinor for use in the preparation of the BdN Environmental Impact Statement (EIS). The report will present the data on species of cultural, social, ceremonial, or economic importance, and then will present publicly available IK or TLU on fish and fish habitat according to the list provided by the Agency for Aboriginal peoples in the Atlantic Region that could potentially be impacted. The data is will be aggregated by land claim or self-government group, tribal affiliations, or individually.

In order to assist the proponent in broadening their understanding of the health impacts of resource development on Indigenous groups, FNESL has provided an overview of health from

an Indigenous perspective, and how important insights are gained from IK. In Canada, it is broadly recognized how important it is for research to reflect Indigenous worldviews and to draw on IK to improve understandings of complex environmental, health, or social systems (Advisory Panel for the Review of Federal Support for Fundamental Science, 2017). Indigenous groups are dismissive of environmental review studies because they do not see their concerns reflected in the findings. This report is intended to illuminate these complexities to help Equinor understand the deep and sacred connection that Indigenous peoples have to the air, land, and water around them, and how that connection is interrelated to overall health and well-being.

To adequately assess Indigenous health and well-being, it is necessary to acknowledge the importance of the relationship between land and environment and the vitality of IK, worldviews, spirituality, cultures, and languages (de Leeuw, Lindsay, & Greenwood, 2015). Mertens, Cram, and Chilisa (2013) argue that if Indigenous peoples have different ways of knowing about the world, then it is only reasonable that their knowledge should be reflected in studies about the issues that affect them. Moreover, Indigenous groups expect that their participation in environmental review processes will allow them to effectively meet their responsibilities to protect their lands, waters and resources, and respect their relationships within their traditional territories (Elsipogtog, 2017).

Proponents have historically employed IK and TLU studies in environmental assessments to map out locations of known resource use or areas of importance or concern: the tangible aspects. But very little attention is paid to the intangibles, that is, the context surrounding TLU that come from the mental, emotional, spiritual and cultural connections that are tied to that activity, activities which are vital to spirituality, and the continued use of a language, community cohesion, and way of life. Any use of land and resources has to support the intangibles that are essential to the cultural, spiritual, social, and economic survival of Indigenous people. Concerns about impacts related to project development are often misunderstood because there are different understandings and perceptions about what significance means from an Indigenous perspective. To that end, FNESL presents, beyond the

tangible impacts, to inform the proponent about how important those intangible impacts are to the groups in the region.

The Agency further states that the spatial and temporal boundaries may vary for a valued component (VC) of the environment, including those related to the current land and resource use for traditional purposes, and that the Proponent will need to take into account comments made by Indigenous groups about these boundaries and concerns (CEAR, 2018f). FNESL is including an overview of how other projects might cumulatively impact fish, particularly migratory species of fish such as salmon and American eel, or migratory mammals and birds throughout their life stages that are deemed important commercially, or for food, social, and ceremonial purposes, that may likely be of concern to Indigenous groups.

Finally, the Agency notes that the context of how a right is practiced or exercised, including gendered aspects, must be taken into consideration to highlight the differential experiences of sub-populations within Indigenous groups. As those aspects of the review are less understood by the proponent, the report will present data that is publicly available from an Indigenous perspective.

All federal environmental assessments within the provinces of Newfoundland and Labrador, Nova Scotia, New Brunswick, Prince Edward Island, and Quebec were reviewed (if language allowed), and the provincial registries were reviewed, where data is publicly available as far back as 2015, and where impacts might affect IK and TLU. Beyond the data that is publicly available in land claim documentation, legal decisions, or any other source within the public domain, including government documents and peer-reviewed literature available to the research team, FNESL has contacted several Indigenous First Nations and organizations for guidance in the preparation of this report.

1.3 RIGHTS, TITLE, AND RECONCILIATION

An Aboriginal right is an inherent right that flows from an Indigenous groups' continued use and occupation of an area since before European contact. A treaty right flows from an historical or modern day treaty. The Crown has a constitutional and legal obligation to consult and accommodate Aboriginal and treaty rights. This duty has evolved over the past few decades, and is enshrined in the *Constitution Act,* 1982, s. 35(1) which states that "the existing Aboriginal and treaty rights of Aboriginal peoples of Canada are hereby recognized and affirmed" (Canada, 2018a, para. 1). Aboriginal and treaty rights are those that exist or are acquired under modern day land claim processes (Canada, 2018a). These rights extend equally to males and females (Canada, 2018a). Indigenous communities have used s. 35(1) to successfully challenge decisions made by the Crown that impact Aboriginal and treaty rights. In the 1990 *R. v. Sparrow* decision, the Supreme Court of Canada (SCC) limited the exercise of the federal Crown powers by requiring the Crown to justify[2] any actions that might infringe a right, otherwise that infringement is unconstitutional (Morellato, 2008).

Aboriginal title refers to a collective inherent right that flows from an ancestral use and occupation of land and territory that predates European occupation. In *Delgamuukw v. British Columbia,*1997, the SCC determined that Aboriginal title exists if the group claiming it used and occupied the territory, that there is a continuity in occupation from the past to the present, and their occupation was exclusive. Furthermore, Aboriginal title includes the right to be involved in decisions about how the territory is used (Morelatto, 2008). The Crown was of the position that it was only required to consult in those decisions that could impact where title was already proven (Morelatto, 2008).

In *R. v. Marshall* (1999), the SCC ruled that the signatories to the Peace and Friendship Treaty of 1760/61 have an Aboriginal right to hunt, fish, and trade for the necessities of life, or to earn a moderate livelihood, and that this right can only be justified by a need for conservation, or other substantive or compelling grounds (Morellato, 2008). This landmark court case

[2] The *Sparrow* test requires that the Crown can infringe on an Aboriginal or treaty right only if there is a valid legislative objective, the infringement was minimal, fair compensation was provided, and that the group impacted was consulted or informed (Morellato, 2008).

resulted in the introduction of the Aboriginal commercial fishery program with First Nations across the country.

In the 2004 *Haida Nation v. British Columbia* and *Taku River Tlingit First Nation v. British Columbia* cases, the SCC ruled that Aboriginal title exists even if it has not been proven but is asserted, and furthermore, that unilateral action by the Crown to grant or permit approvals for resource development or extraction could be invalidated by the courts (Morelatto, 2008).

The *Tsilhqot'in Nation v. British Columbia* case of 2014, the SCC ruled that semi-nomadic people have Aboriginal title to their traditional territories which is a communal interest that extends to future generations, that is, land cannot be used in a way that deprives future generations of their right to the territory (McNeil, 2015). This was the first time that the SCC recognized Aboriginal title to traditional territory, and that these lands can only be developed for substantial and compelling purposes (Bains, 2014). The SCC also reaffirmed that consultation is the responsibility of the Crown, but that the procedural aspects of the consultation may be delegated to proponents (Nova Scotia Office of Aboriginal Affairs, 2011b). Furthermore, consent of the title-holding group is required, otherwise the Crown needs to demonstrate that it has discharged its duty to consult, the project is proceeding for substantial and compelling purposes, furthers the goal of reconciliation in regard to Indigenous interests and the broader public good, and that the Crown continues its fiduciary duty to the Indigenous group asserting title (Bains, 2014).

Recent court decisions demonstrate the need for adequate consultation. In June 2016, the federal Court of Appeal overturned the National Energy Board's (NEB) approval of the Enbridge Northern Gateway project, citing inadequate consultation with impacted Indigenous groups (Federal Court of Appeal, 2018; Proctor, 2016). On August 30, 2018, the Federal Court of Appeal overturned the NEB's decision to approve the Trans Mountain Pipeline expansion, citing the flawed review process and the federal government failure to engage in meaningful consultation with First Nations (Bryden, 2018; National Energy Board, 2018).

In August, 2016, then Minister of Indigenous and Northern Affairs Canada, Carolyn Bennett,

addressed the United Nations Permanent Forum on Indigenous Issues to formally announce the removal of Canada's objector status to the United Nation Declaration on the Rights of Indigenous Peoples (UNDRIP), and committed that Canada would endorse the Declaration without qualification (Fontaine, 2016). Although not legally binding, it represents a political commitment to implement UNDRIP. Since then, the Government of Canada has been working to reconcile Canadian laws to commitments made under the UNDRIP (Canada, 2018b). Bill C-262 has passed third reading in the House of Commons, and first reading in the Senate, and when passed will ensure the laws of Canada are in harmony with UNDRIP (Parliament of Canada, n.d.).

The following Articles are particularly relevant to Indigenous rights in Canada as it pertains to development in traditional territories (United Nations, 2008):

- Article 8: Indigenous peoples and individuals have the right not to be subjected to forced assimilation or destruction of their culture.
- Article 18: Indigenous peoples have the right to participate in decision-making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions.
- Article 19: States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.
- Article 20: 1. Indigenous peoples have the right to maintain and develop their political, economic and social systems or institutions, to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities (p. 8); and 2. Indigenous peoples deprived of their means of subsistence and development are entitled to just and fair redress.
- Article 25: Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied

and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.

- Article 29: 1. Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination; and 3. States shall also take effective measures to ensure, as needed, that programmes for monitoring, maintaining and restoring the health of indigenous peoples, as developed and implemented by the peoples affected by such materials, are duly implemented.
- Article 32: 1. Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources;

  2. States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other

  resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources; and 3. States shall provide effective mechanisms for just and fair redress for any such activities, and appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact (p. 12).

In December 2016, the Prime Minister of Canada committed to a process that would advance reconciliation with Indigenous peoples and would start to implement the Truth and Reconciliation Commission Calls to Action (Justin Trudeau, n.d.). Just over a year later, in December 2017, Canada announced the formation of an Interim Board of Directors for a National Council for Reconciliation (Government of Canada, 2018a).

The Government of Canada is guided by ten principles for reconciliation, to ensure that Indigenous peoples live in strong, healthy and thriving communities (Canada, 2018b). This will be achieved by ensuring: Indigenous people have a right to be self-determining; the

government must protect the honour of the Crown in all of its dealings with Indigenous peoples; treaties, agreements, or other arrangements must be respected; government engagement must ensure free, prior, and informed consent when actions may impacts Indigenous peoples rights including their lands, territories, and resources; and infringement on those rights must meet a high threshold of justification (Canada, 2018b).

1.4 SPECIES OF CULTURAL, SOCIAL, CEREMONIAL, OR ECONOMIC IMPORTANCE

Fishing has always been an integral part of the economy of Indigenous populations in the Maritime region, from pre-contact (Lewis, 2006; McMillan, 2012) to present. In fact, throughout Nova Scotia there are several Mi'kmaq place names that give insight into the resource or harvesting activity that took place at certain locations (Lewis, 2006). For example, *ooptomagogin* (Eel Brook) which translates to "place of eels" or *ponamagotty* (Salmon River) which translates to "place for frost fish" (Lewis, 2006, p. 31). Archaeological sites yield evidence of marine mammal use (walrus, gray, harbour, Greenland, and monk seal), use of cod, eel, flounder, herring, salmonid, sculpin, shad, smelt, striped bass, sturgeon, swordfish, and, soft-shelled clam and other shellfish such as whelk, mussel, sea urchin, and limpet (Barsh, 2002). In fact, Marc Lescarbot noted the Mi'kmaw practices of fishing for smelt (gaspereau), herring, pilchard, salmon, sturgeon, and dolphin, and the harvesting of mussels, scallops, oysters, cockles, sea urchin, crab, and lobster in his writings between 1604 and 1606 (Barsh, 2002). In 1616, abbé Pierre Biard noted the harvesting of seal, smelt, herring, salmon, and sturgeon, waterfowl, and their eggs (Barsh, 2002). Around Cape Breton in the 1670s, Nicolas Denys recorded that Mi'kmaq used seal and whale oil (use not specified), and harvested trout, salmon, smelt (Barsh, 2002).

Davis, Wagner, Prosper, & Paulette (2004) have noted that Mi'kmaq have shared stories of eeling locations throughout Nova Scotia, other Maritime provinces, and the state of Maine. Insight into resource abundance can be found in oral history that is passed down over generations; for example, a story from the mid-1800s recounts "up that lake can be found Kluskap's weir, and without first honouring Kluskap, no trout, gaspereau, salmon or fish of any kind could be caught" (Lewis, 2006, p. 36).

Salmon, eel, herring, bass, seal, and walrus were also present throughout the shores and waterways of Nova Scotia in the 17th and 18th centuries (Wicken, 1994). Archaeological evidence of the Miramichi Mi'kmaq demonstrates over 2500 years of fishing activity for species such as Atlantic salmon, striped bass, eel, gaspereau, smelt, shad, and sturgeon, and stories of abundance of salmon are evident in ethnographies of the memories of those living in the late 1800s (Adlam, 2002). During the 17th and18th centuries, marshlands of Nova Scotia attracted various migratory waterfowl including geese, duck, and teal (Wicken, 1994).

Some groups maintain place-name maps such as the Mi'kmaq Confederacy of Prince Edward Island (2018) that details traditional land use, such as *katewpijk*, or eel trap place, located on the northeastern shore of the island, or *toqjuapji'jmujue'kati*, or place where the duck are plentiful, on the northwestern shore of the island. The Confederacy of Mainland Mi'kmaq developed a similar online database for Nova Scotia working with Saint. Mary's University, but a web address is unavailable currently. Some names that have been shared by those who had worked on the project include *e'se'katik* (place of clams) for Clam Harbour, *nme'kaqnuk* (good fishing place) for Ketch Harbour, *kwimue'katik* (place of loons) for Popes Harbour or *nme'jukatik* (place of the fish) for Shad Bay (Lewis, 2018, personal communication).

The species that will be discussed below are species that have brought to the attention of Equinor as having significant meaning either culturally or traditionally, that may pass through the project region during feeding or spawning migrations (Equinor Canada, 2018). The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) provides advice on the status of wildlife species that could be at risk, and sends an assessment of the species, based on biological data and community or traditional knowledge, to the government who will determine whether the species should be added to Schedule 1 of the *Species at Risk Act* (SARA) (Government of Canada, 2011; 2018b). As the COSEWIC assessment may not mean that the species is added to the *SARA* list, the Species at Risk Public Registry provides both the COSEWIC and SARA status on all species (Government of Canada, 2018b). Both are listed below.

The Atlantic First Nations expressed concern about the effects of potential oil spills, especially from blowouts, on species of cultural, social, ceremonial, or economic importance, such as the Atlantic Salmon, American eel, tuna and swordfish, as well as mammals and migratory birds (CEAR, 2018i).

Atlantic Salmon

The Atlantic salmon migrates upstream in rivers from the Atlantic Ocean (see Figure 1.3) from April to November, with young adults and females arriving first and large, adult, male salmon arriving later in the season to fertilize and cover up the eggs (Fisheries and Oceans Canada, 2018). The Atlantic salmon can be present in all major riverways and represents one of the main food species for Indigenous groups, and continues to be an important species for food, social, and ceremonial purposes (CEAR, 2018h; Fisheries and Oceans Canada, 2018).

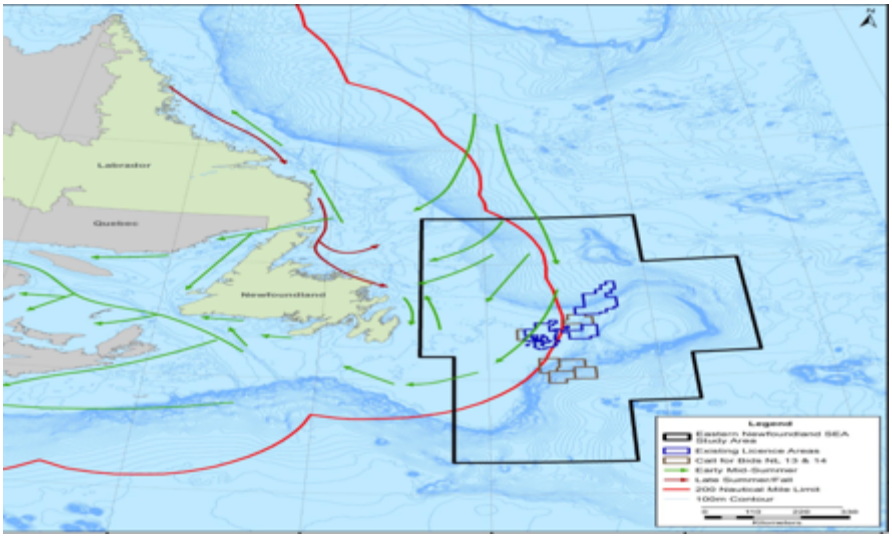

Figure 1.3 Migration Routes of Atlantic Salmon
(Source: Canada-Newfoundland & Labrador Offshore Petroleum Board, 2014).

In the sixteenth century, when Europeans first arrived, Indigenous peoples of New Brunswick, Nova Scotia, and the St. Lawrence River watershed had been using salmon[3] for thousands of years (Parenteau, 1998). In the second half of the nineteenth century however, the Department of Fisheries systematically excluded Indigenous peoples of New Brunswick, Nova Scotia, and

[3] The Mi'kmaw word for salmon is *plamu* (Denny, & Fanning, 2016).

Quebec from the Atlantic salmon fishery by banning their methods of harvesting and the use of administrative regulations, influenced by elite salmon anglers (Parenteau, B. (1998). In Mi'kma'ki, the traditional territory of the Mi'kmaw people in Atlantic Canada, including the Gaspé Peninsula, this tension continues, as the use of conservation and management objectives are still used as justification to infringe on Aboriginal and Treaty rights of the Mi'kmaw right to harvest salmon, especially the right to access and allocate salmon for food, social, and ceremonial needs (Denny & Fanning, 2016).

The Gespe'gewaq Mi'gmaq Resource Council note that Atlantic salmon has provided the peoples of Gespe'gewa'gi with sustenance for thousands of years, and was important as food, in ceremony, and in trade (Cornell, Jorgensen, & Tetreault, 2010). Because of their deep and sacred relationship to the salmon, the Listuguj Mi'gmaq have enacted the *Listuguj Mi'gmaq Nation Government Law on Fisheries and Fish for the Restigouche Watershed* to assert their governance over and protection of the salmon fishery within their own territory (Cornell, Jorgensen, & Tetreault, 2010; Denny & Fanning, 2016), reflecting the natural laws, sacred relationship, ethics, and responsibilities which had existed long before Europeans arrived on these shores (Denny, & Fanning, 2016). The Atlantic Salmon Federation awarded Listuguj for the best managed river in the province (Cornell, Jorgensen, & Tetreault, 2010; Denny & Fanning, 2016).

Atlantic salmon is listed on COSEWIC as anywhere from not at risk to endangered, or no status to endangered on the SARA registry, throughout the bodies of waters on the eastern coast of Canada, including the Gaspe and St. Lawrence regions (Government of Canada, 2018b).

Climate change poses a major threat to Atlantic salmon, as rising temperatures raise water levels, making spawning areas unreachable to the species (Fisheries and Oceans Canada, 2018). Further, large-scale logging efforts, causing flash flooding and siltation in the water, disturb significant Atlantic salmon habitats (Fisheries and Oceans Canada, 2018). Other significant threats to the salmon species includes natural and human-made structures restricting the species from key areas (spawning grounds) and over-fishing of significant prey

species such as shrimp and krill. Indigenous groups have raised concerns for potential oil spills or blow outs that could result in major environmental hazards for both the Atlantic salmon species and other species.

American Eel

The American eel is a snake-shaped fish that can grow up to 1 meter in length and are found from the Caribbean Sea north to Greenland and Iceland (Government of Canada, 2018b). The species has been found in all freshwater habits in the Atlantic Canada as the species spend most of their lives in freshwater, before returning to the ocean to spawn and die (Fisheries and Oceans Canada, 2018). American eel spawn in the Sargasso Sea (see Figure 1.4) (Government of Canada, 2018b), which is a large area located east of Bermuda. During the spawning season, a female American eel can release up to 20 million eggs that hatch and young eels drift in the currents of Gulf Stream for months until they reach coastal areas (Newfoundland and Labrador Canada, 2018a). Adult eels will typically migrate between salt and fresh water, inhabiting estuaries and bays in the summer, and then moving back up to freshwater rivers and lakes in the winter (Weiler, 2011). Eel are nocturnal and bury themselves into mud during the daytime in the summer, and hibernate in the winter (Fisheries and Oceans Canada, 2018).

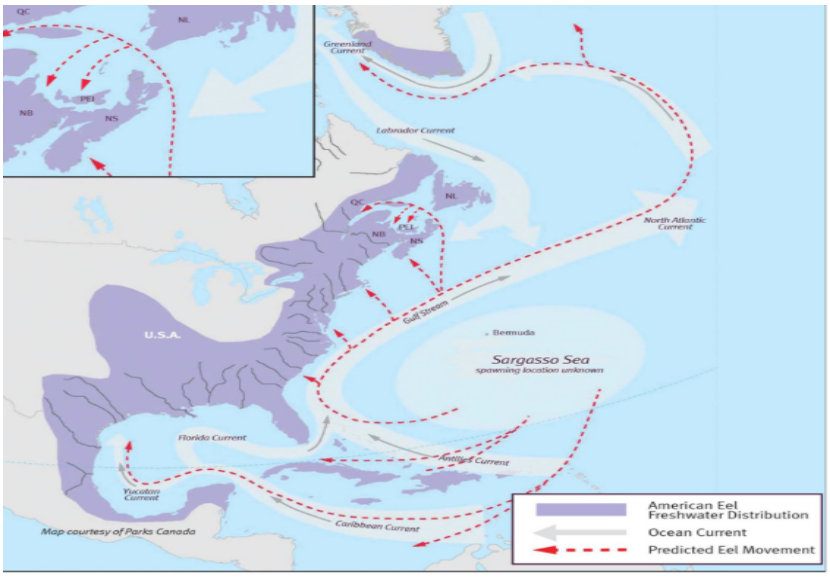

Figure 1.4. American Eel Migration Routes from Sargasso Sea (Source: Fisheries and Oceans Canada, 2018)

The American eel was, and is still is, an important food source for most Indigenous groups throughout eastern North America (CEAR, 2018h; Engler, et al., 2013; Gespe'gewaq

Mi'kmaq Resources Council, 2012). The American eel, known to the Mi'kmaq as *kataq,* has been significant for thousands of years, being used for medicinal, subsistence, health, social, ceremonial, and economic purposes (Davis, et al., 2004; Giles, Fanning, Denny, & Paul, 2016). The American eel has spiritual significance, and for the Mi'kmaq, its' use in ceremonial feasting is an important activity for community cohesion (Weiler, 2011). The harvesting of eel is an important time for older practitioners to transmit knowledge and instil social values and kinship obligations in younger harvesters (Davis et al., 2004; Giles, Fanning, Denny, & Paul, 2016). The relationship to *kataq* is reflected in legends, art, petroglyphs, the technologies used to harvest the species, and social events (Davis, et al., 2004; Giles, Fanning, Denny, & Paul, 2016). The Mi'kmaq Alsumk Mowimsikik Koqoey Association (MAMKA), representing Qalipu and Miawpukek First Nation, note that American eel was traditionally important in western Newfoundland because of its availability to be harvested year-round year-round, and is still available throughout Newfoundland (Newfoundland and Labrador, 2011). The northern limit to American eel is said to be Lake Melville, although it has been documented to be present further north on the English River (Newfoundland and Labrador, 2011).

The American eel's unique skin (the Mi'kmaw word for eel skin is *kasaagel*) has medical properties, mostly providing pain relief, and the skin has been used for braces, bandages, mixed with juniper berries makes a good poultice for sprains (Beaty, 2014; Davis, et al., 2004). Eel oil has been noted to be good for ear infections, chest colds, congestion, and flu (Davis, et al., 2004).

The American eel is designated as threated under COSEWIC, but is not listed under the *Species at Risk Act* (SARA) (the federal legislation prohibiting the killing, harming, harassing, possessing, buying, selling, trading, leasing or transporting of listed species (Government Canada, 2018b). The consideration of a designation under SARA would be detrimental to Mi'kmaq Aboriginal and treaty right to access the American eel as a food resource and for cultural purposes, and limit Mi'kmaq ability to discharge their obligations to protect the species (Giles, Fanning, Denny, & Paul, 2016). In Québec, the American Eel is under consideration to be listed under Quebec's Act Respecting Threatened or Vulnerable Species and in Newfoundland and Labrador, it has been listed under the provincial Endangered

Species Act as Vulnerable (Government Canada, 2018b). These actions have the same implications for other Indigenous groups as it does for the Mi'kmaq.

The major threats to American Eel include hydroelectric dams restricting the species from migrating to spawning areas, overfishing, habitat loss, contaminants and pollution, and invasive parasites (Davis, et al., 2004; Weiler, 2011). Contaminants from increased vessel traffic and accidental oil spills or blow outs can cause significant damage to the species as a whole and the Indigenous groups that rely on them (Weiler, 2011). Contamination could result in the species avoiding significant areas (spawning grounds), altering the abundance, distribution, presence, and/or health of the American eel (Weiler, 2011). Figure 1.5 shows the major river systems in Nova Scotia and New Brunswick where the American eel can be found.

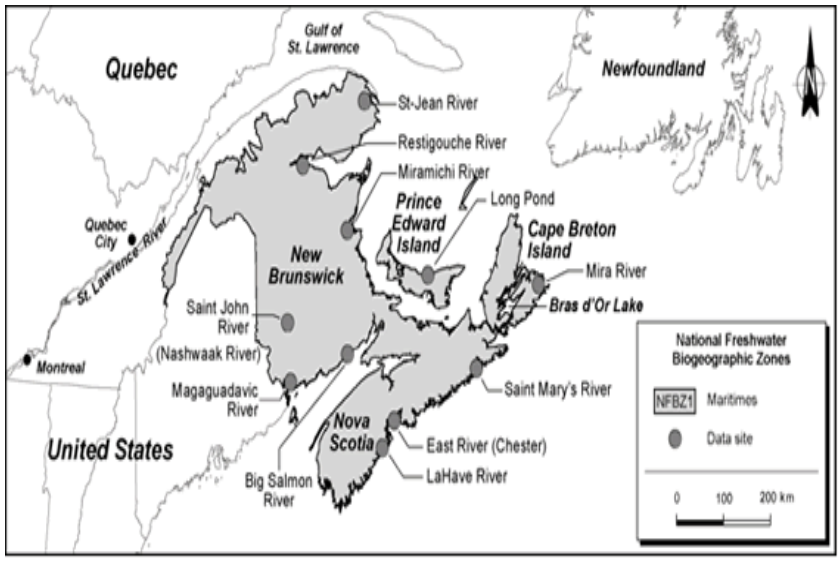

Figure 1.5 Major River Systems - New Brunswick and Nova Scotia
Where the Atlantic Eel Can Be Found
(Source: Species at Risk Public Registry, 2013).

Tuna Species

A variety of tuna species have commercial and traditional value to Indigenous groups, and have been identified as one of the main commercial fish for the Miawpukek First Nation, who are closest to the project area (Equinor Canada, 2018). Tuna fishing licences for this First Nation are in the NAFO Divisions 3KLMNO (Equinor Canada, 2018). Atlantic Bluefin tuna are present off Newfoundland and in the Gulf of St. Lawrence (Canada-Newfoundland &

Labrador Offshore Petroleum Board, 2014). Atlantic Bluefin tuna are listed as endangered by COSEWIC but have no status under *SARA* (Government of Canada, 2018b; Fisheries and Oceans, 2018).

The main threat to the majority of the tuna species is due to overfishing; this overfishing has an economic driver, as tuna are one of the most expensive fish sold globally (Government of Canada, 2018b; Oceana, n.d.). Indigenous groups that rely on their yearly tuna harvesting may be affected if the overall abundance, distribution and/or health of tuna species are affected by an accidental oil spill near the project area. The spawning of tuna in the Gulf of Mexico was heavily exposed to the Deep Horizon oil spill, the effects of which are still unknown (Government of Canada, 2018b).

Tuna was mentioned, for example, in the Environmental Assessment Reports for Black Point (referral to ten Mi'kmaq communities holding communal licences for tuna), Scotian Basin (Kwilmu'kw Maw Klusuaqn, Maliseet Nation, Mi'gmawe'l Tplu'taqnn Incorporated) and Shelburne Basin (Kwilmu'kw Maw Klusuaqn and Maliseet Nation), and the Environmental Impact Statement for Flemish Pass (Abegweit, Acadia, Elsipogtog, Sipekne'katik, Woodstock, Miawpukek First Nations, and the Micmacs of Gesgapegiag). Further literature on Indigenous groups in the Atlantic region and the tuna fishery is very limited.

Swordfish

Similar to the tuna species, swordfish have commercial and traditional value to Indigenous groups in the area (CEAR, 2018g). Swordfish have not been assigned either a COSEWIC or SARA status. Swordfish was mentioned, for example, in the Eastern Offshore (Abegweit and Lennox Island First Nations, Mi'gmawe'l Tplu'taqnn Incorporated), Scotian Basin (Maliseet Nation, Mi'gmawe'l Tplu'taqnn Incorporated), Shelburne Basin (Kwilmu'kw Maw Klusuaqn, Maliseet Nation, Mi'gmawe'l Tplu'taqnn Incorporated). Further literature on Indigenous groups in the Atlantic region and the swordfish fishery is very limited.

Migratory Birds

Waterfowl are important to traditional diets (Canada-Newfoundland & Labrador Offshore Petroleum Board, 2014). Indigenous groups have indicated that migratory bird species and their eggs are used for traditional land and resource activities (Kuhnlein & Humphries, 2017). Indigenous groups, for example, the Mi'kmaq, Innu, and coastal Inuit, have identified the Canada goose as a food delicacy (meat and eggs), and also important for feather and bones (Kuhnlein & Humphries, 2017). Duck (for example the black, eider, harlequin, long-tailed, sea, merganser, scoter (black, surk, white-winged), and teal) are important to the Innu, Inuit, and Mi'kmaq as a traditional, social, and ceremonial food, often served as the centre of feasts (Kuhnlein & Humphries, 2017). Eggs are consumed when available (Kuhnlein & Humphries, 2017).

1.5 INDIGENOUS GROUPS

The Canadian Environmental Assessment Agency (CEAA) has directed the proponent to engage with Indigenous groups of the Atlantic region and the Mi'kmaq and two Innu communities on the north shore of the St. Lawrence (see Figure 1.6) and to gather community and Indigenous knowledge to ensure that the concerns of the communities and the potential impacts of the project are adequately addressed (CEAR, 2018f).

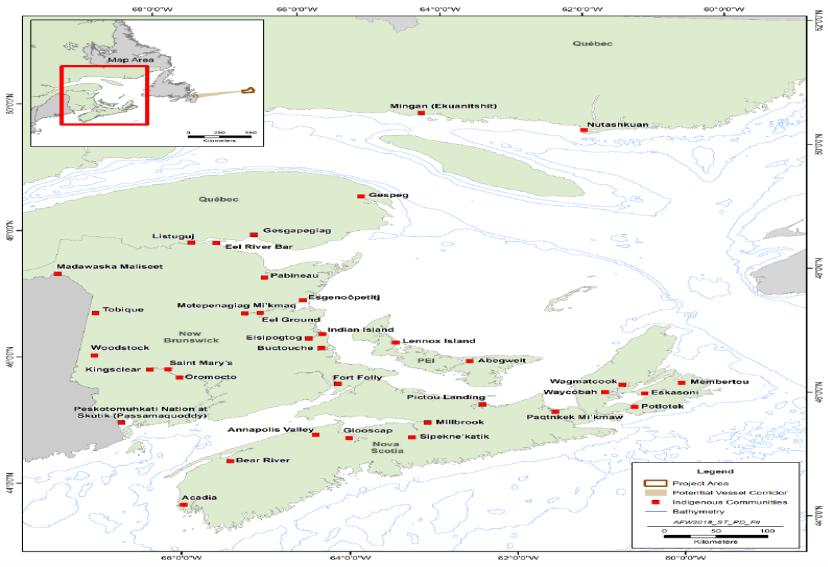

Figure 1.6 First Nations and Inuit in Atlantic Canada, and Innu of North Shore, Quebec (Source: Equinor Canada Ltd., 2018)

In an era of reconciliation with Canada, the Crown should ensure that not only are the rights of Indigenous peoples protected, but that the governance structures negotiated in land claim or self-government agreements are respected in environmental decision-making processes. The following groups will expect to be meaningfully engaged in the environmental assessment process for the BdN Development Project (see Figure 1.5) either as individual First Nation communities, through their representative organizations, or as self-governing authorities with environmental assessment regulatory bodies in place.

FNESL has used the data provided in the *Nexen Energy ULC Flemish Pass Exploration Drilling Project Environmental Impact Statement,* as a starting point, as the Indigenous groups covered are the same for the BdN Project. The Nexen document was very thorough.

To supplement the Nexen data, FNESL reviewed Indigenous knowledge or TLU data collected in environmental assessment documents from other major developments in the region; this information is publicly available, and may be used to inform the current project.

1.5.1 Newfoundland and Labrador

In Newfoundland and Labrador, there will be engagement with individual First Nations, a fishing enterprise representative of two First Nations, groups in the negotiation for self-government agreements, and a group that has concluded a land claim agreement. Under the land claim agreement, government must respect the jurisdictional authority over environmental decision-making in the respective land claim area.

Newfoundland and Labrador Indigenous groups hold several commercial-communal fishing licences and permits for a variety of different fish species in the NAFO Divisions (CEAR, 2018h). Species such as groundfish (i.e., Greenland halibut, Atlantic cod) and pelagic fish (i.e., tuna, swordfish), shellfish (i.e., shrimp and snow crab), and seal are regulated by the permits in various locations including NAFO Divisions 3KLMN0 and Seal Fishing Areas 4-33 (Equinor Canada, 2018). The commercial communal fishing licences in the project area are described in more detail below in Table 1.1. Equinor (2018) notes that there are no documented food, social, ceremonial (FSC) licences in the project area. There are, however,

species of importance to Indigenous groups that may pass through the project area in their various life stages, and, therefore, are noted as well.

Table 1.1 Commercial Communal Fishing Licences in the Project Area (Source: Equinor, 2018)

Indigenous Group	Licences in Project Area
Labrador Inuit (Nunatsiavut Government)	Inshore groundfish enterprises licensed to operate in 3KL, and seal licences in Seal Fishing Areas 4-33 (Atlantic-wide).
Labrador Innu (Innu Nation)	Mid-shore enterprise (65 to 100 feet) with a groundfish licence permitting access to a variety of areas (Atlantic-wide) including 3KLMN and an Area 6 (3K) shrimp licence; an inshore enterprise with a mobile gear and fixed gear groundfish licence for 3KL.
NunatuKavut Community Council	Multiple inshore enterprises with access to 3KL groundfish; Area 6 (3K) shrimp licences; seal licences allowing access in Seal Fishing Areas 4-33 (Atlantic-wide).
Miawpukek First Nation	Multiple enterprises and licences that give access to 3KL; tuna licences in 3LN; a seal licence for Seal Fishing Areas 4-33; a swordfish licence that includes 3KLMNO.
Qalipu Mi'kmaq First Nation Band	An inshore enterprise with a groundfish licence for 3K; a shrimp licence for Area 6 (3K); pelagic fishery access (herring, mackerel, and capelin) which occurs close to shore in 3KL; a snow crab licence for Area 4 (3K).
Mi'kmaq Alsumk Mowimsikik Koquey Association (MANKA)	Groundfish licence in 3KL.

1.5.1.1. Nunatsiavut Government

In 1977, the Labrador Inuit Association filed a claim with the federal government of Canada to the land and sea ice of northern Labrador (Nunatsiavut Government, 2018a). In 2004, the province of Newfoundland and Labrador approved the land claim agreement, with Canada approving the land claim agreement in 2005 (Nunatsiavut Government, 2018a). The *Labrador Inuit Land Claims Agreement* established the Nunatsiavut Government, the regional government representing the Inuit communities of Nain, Hopedale, Postville, Makkovik, and Rigolet (Nunatsiavut Government, 2018a).

The *Labrador Inuit Land Claims Agreement* (*Land Claims Agreement*) is a modern treaty protected under the *Constitution Act, 1982,* and the Inuit are Indians as defined under Section

91(24) of the British North America Act, 1867 (Nunatsiavut Government, 2018b). The right of the Inuit to practice their culture is protected under the *Land Claims Agreement* (Nunatsiavut Government, 2018b). The *Land Claims Agreement* provides that the federal government must consult with the Government of Nunatsiavut on any actions that would impact the estuarine, coastal, and marine areas in the Labrador Inuit Settlement area[4] (LISA) and Zone (see Figure 1.7), the tidal waters of the LISA (Nunatsiavut Government, 2018b).

The Nunatsiavut Government is in the initial phase of developing the Imappivut Marine Management Plan which is intended to implement the *Land Claims Agreement* in the entire coastal and marine waters of Nunatsiavut, extending 12 nautical miles out along 17,000 km of Nunatsiavut shoreline (Zone of the LISA), and then beyond that to an additional 188 nautical miles out to sea, almost to Greenland (Dives, 2017; Nunatsiavut Government, 2018a). The Plan will use Inuit traditional knowledge to govern matters such as resource extraction and species management over more than 380,000 km^2 of coastal waters on the eastern edge of the Northwest Passage, and will be the first Indigenous protected area in Canada (Dives, 2017). The plan is expected to be completed by early 2019 and is expected to safeguard breeding grounds for fish, seal, and other water mammals, key bird habitats, and cultural sites of importance (Nunatsiavut Government, 2018a).

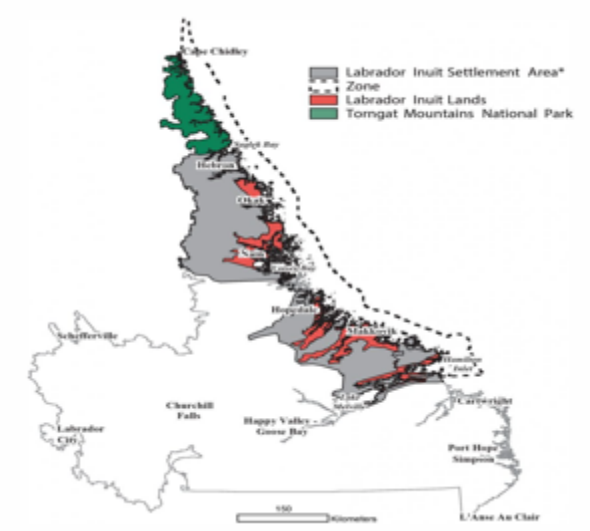

Figure 1.7 Labrador Inuit Lands, Land Settlement Area, and Marine Zone (Source: Newfoundland and Labrador, 2018)

[4] The Labrador Inuit Settlement Area (LISA) consists of all lands, including lands covered by water, and tidal waters and islands within the boundaries (Nunatsiavut Government, 2018b).

Inuit have the right to a commercial licence to harvest fish or aquatic plants in the Labrador Inuit Settlement Area, and have priority in the waters adjacent to the Zone (CEAR, 2018h). The Nunatsiavut Government is a quota-holder under the commercial fishery char (from Cape Rouge to Cape Chidley), Atlantic salmon, scallop (Scallop Area 1) (Schedule 13-B), seal (grey, harp, ringed, harbour, hooded, bearded) (Sealing Area 4 through 33), walrus, clam, mussel, squid, whelk, shrimp (Shrimp Areas 4 and 5), sea urchin, sea cucumber, star fish, lump fish, rock cod, tom cod, sculpin, smelt, capelin, eel, sand lance, mackerel, herring, sea trout, wolf fish, brook trout, lake trout, ouananiche, northern pike, whitefish, landlocked char, burbot, skate, suckers, shark, arctic cod (polar cod), grenadier, Atlantic halibut, Greenland halibut (turbot) (NAFO 2 and 3K, 3LMNO, 0B), flounder, sole, plaice, redfish, and crab (rock, toad, porcupine, snow (Snow Crab Areas 1 and 2, NAFO 2H), stone, spiny[5]) (Schedules 13-C and D) (CEAR, 2018h; Nunatsiavut Government, 2018b).

Inuit have the right to harvest throughout the year and throughout the LISA up to their full level of need for food, social and ceremonial purposes, and in areas that are of customary or traditional importance to Inuit within the Zone (Nunatsiavut Government, 2018a). The food, social, ceremonial (FSC) fishery in the LISA includes trout, Atlantic salmon, Arctic char, seal, and smelt (CEAR, 2018h).

Inuit have the right to harvest migratory birds include common eider and black duck, ptarmigan / grouse, Canada goose, murre, merganser, scoter (surf, black, white-winged), and loons, with egg harvesting of common eider, gull, tern, and common guillemot (CEAR, 2018h).

For further details on the existing human environment for Nunatsiavut see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

[5] See Schedules 13-B, C, D, of Labrador Inuit Land Claims Agreement (Nunatsiavut Government, 2018b).

1.5.1.2. Innu Nation

The Innu Nation, which represents the Innu of Labrador who live in the communities of Sheshatshiu and Natuashish, is in a land claim and self-government negotiation with the federal and provincial governments over Aboriginal rights and title in Labrador (Innu Nation, n.d.). An Agreement-in-Principle was signed in 2011 that commits the government to negotiate Innu jurisdictional authorities over, amongst other matters, resource management, wildlife, migratory birds, fisheries, water rights, marine conservation, marine protected areas, environmental assessment, species at risk and endangered species (see Figure 1.8 for Innu Settlement area and lands) (Indigenous and Northern Affairs Canada, 2012a). The Sheshatshiu and Mushuau Innu (Natuashish) are formally recognized as status Indians, and their lands given reserve status under the *Indian Act,* in 2002.

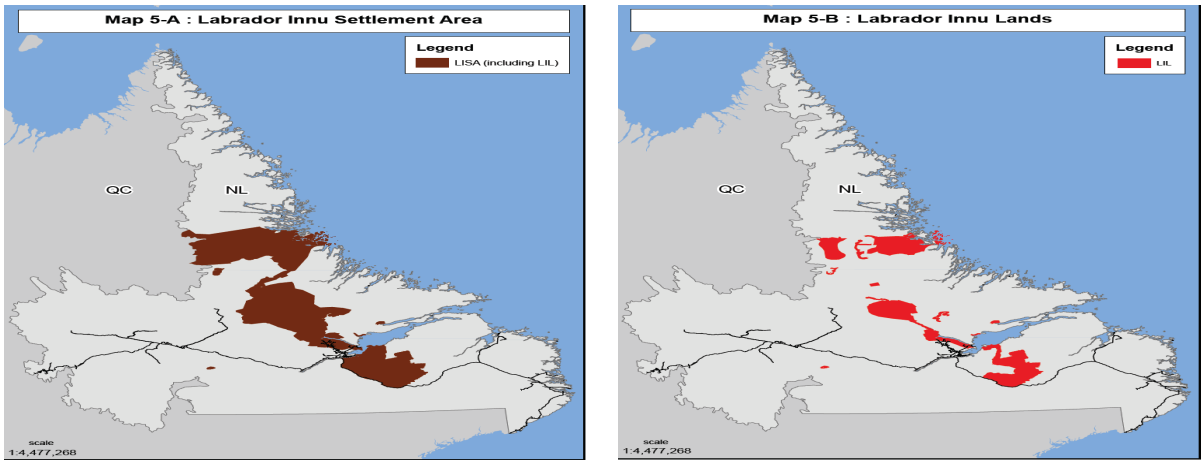

Figure 1.8 Labrador Innu Settlement Area and Labrador Innu Lands
(Source: Indigenous and Northern Affairs Canada. 2012a).

The Innu hold a commercial fishery for groundfish in NAFO 0, 2GHJ, 3KL, groundfish mackerel and capelin (Fishing Areas 1 to 11) and shrimp in Shrimp Area 4, (CEAR, 2018h, p. 509). Ueushuk Fisheries, operated by the Innu Development Partnership on behalf of the Sheshatshiu and Mushuau Innu, hold commercial licences for Greenland halibut (NAFO 2 and 3K, 3LMNO and 0B), skates (3LNO, 3P, 4X, 5Y, 5Z (j,m)), white hake (3NO, 3P), Atlantic halibut (NAFO 3NOP, 4VWX and5Zc), haddock (5Z (j,m)), and shrimp (Shrimp Areas 6 and 7). Innu communities hold FSC licences for Atlantic salmon, trout, and Arctic char (CEAR, 2018h). Innu have reported that they have also harvested Atlantic rainbow smelt and Atlantic tomcod (Armitage, 2010). Migratory bird harvesting includes duck (American black, eider

harlequin, long-tailed, sea), scoter (black and surf), Canada goose, common loon, northern pintail, blue-winged teal, turr, merganser, and murre (Armitage, 2010; CEAR, 2018h). Innu also hunt seal, but little is known about this activity (CEAR, 2018h).

For further details on the existing human environment for the Innu see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

1.5.1.3. NunatuKavut Community Council

NunatuKavut Community Council (NCC) is the representative organization for the Southern Inuit of Labrador, including the communities of Cartwright, Charlottetown, Port Hope, Simpson, St. Lewis, Mary's Harbour, Paradise River, Black Tickle, Norman Bay, Pinsent's Arm, Williams Harbour, and Lodge Bay. The Southern Inuit of Labrador claim treaty rights under section 35 of the *Constitution Act, 1982* as signatories to the *Labrador Inuit Treaty of 1765*, similar to other Peace and Friendship treaties common in the Atlantic Region at the time, and which allowed the British in the region to pursue the fishery in their territory (NunatuKavut, 2013a). It is the position of the NCC that the Treaty of 1765 committed the British Crown[6] to honour the Southern Inuit rights to harvesting, natural resources, commercial trade, and self-governance, and is the basis of which Southern Inuit rights are recognized (NunatuKavut, 2013a).

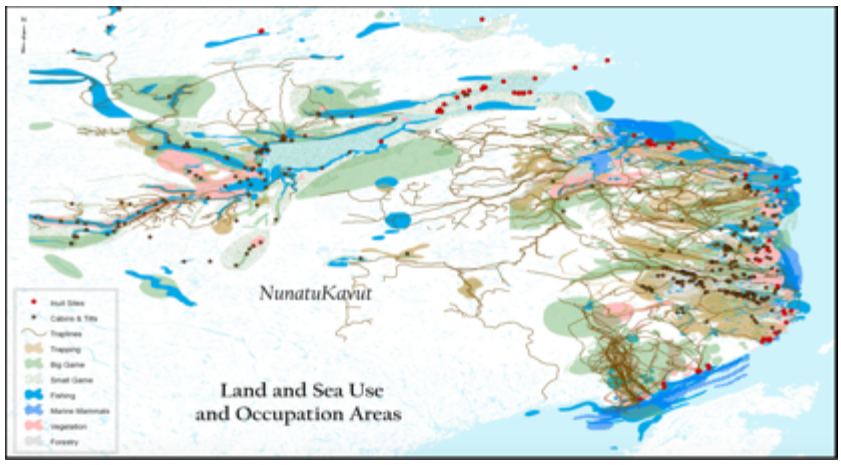

Figure 1.9 NunatuKavut Land and Sea Use and Occupation Areas (Source: NunatuKavut, 2013b).

[6] The Treaty of 1765 was entered into by then Governor of Newfoundland, Sir Hugh Palliser (NunatuKavut Community Council, 2010).

On July 12, 2018, after decades of pushing for recognition, the federal government and NunatuKavut Community Council (NCC) announced that they were entering into discussions for the recognition of Southern Inuit rights and self-determination (see Figure 1.9 for land and sea use and occupation areas under claim) (NunatuKavut, 2013c).

Nunacor Development Corporation (Nunacor), representing the business operations of NCC, owns NDC Fisheries Limited, the company that pursues the fishing opportunities on behalf of the NCC (Nunacor, 2018). The commercial fishery includes seal (Sealing Areas 4 to 33), groundfish (NAFO 2GHJ, 3KL and 4RS), scallop (Scallop Areas 1 and 2), shrimp (Shrimp Area 6), whelk (NAFO 2J), northern shrimp, snow crab, capelin, herring and toad crab (CEAR, 2018h; Nunacor, 2018). The FSC include licences for salmon, trout, Arctic char, Atlantic cod, rock cod, herring, scallop, whelk, smelt and seal (CEAR, 2018). Migratory bird harvesting includes sea duck, murre, geese, and black duck, with eggs harvested as well as seal (CEAR, 2018h).

Seal is important to the Innu of NunatuKavut who use it to make boots and clothing, use the windpipe to make bridles for the *komatik* (dogsled), and use the bone to make *ulu* (knives) (NunatuKavut. (2013d).

For further details on the existing human environment for NunatuKavut see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

1.5.1.4. Miawpukek First Nation

Miawpukek First Nation is a Mi'kmaw community located in southern Newfoundland (Miawpukek, 2018). An Agreement-in-Principle was signed in 2013 with the federal and provincial governments, addressing resource management as one matter to be negotiated, but the agreement explicitly excludes fish and fish habitat (Government of Canada, n.d.). Miawpukek (or MAMKA on Miawpukek's behalf) hold commercial licences for groundfish (NAFO 2GHJ, 3KL, 3Pn and 3Ps, and 4R), bluefin tuna (NAFO 3LNOP), seal (Areas 4 to 33), sea cucumber and whelk (NAFO 3Ps), capelin (Areas 1-11), herring (Area 11), mackerel

(Areas 10, 11, 1-11), snow crab (Areas 10 and 11), squid (Squid Area 10), swordfish and scallop (CEAR, 2018h). The food, social, ceremonial fishery in 3P includes for scallop, lobster, mackerel, herring, Atlantic cod, eel, smelt, capelin, seal (harp and grey), snow crab and redfish (CEAR, 2018h).

For further details on the existing human environment for Miawpukek see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

1.5.1.5. Qalipu Mi'kmaq First Nation

The Qalipu were recognized by the federal government in 2011 as a Band under the Indian Act to represent those Mi'kmaw people in Newfoundland who were not recognized when Newfoundland joined Confederation in 1949; it is a landless band (Qalipu First Nation, 2016).

The Qalipu Mi'kmaq First Nation (or MAMKA on Qalipu's behalf) hold commercial communal fishing licences for groundfish (NAFO 2J, 3Pn, 4RST, 2GHJ and 3KL), lobster (Lobster Areas 4B, 13A, 13B), snow crab (Snow Crab Areas 4, 12, 12C, 12E and 12F), mackerel (Mackerel Areas 1-11, 3-8, 4, 13 and 13B), herring (Herring Area 13), squid (Squid Areas 4 and 13), scallop (Scallop Area 13), capelin (Capelin Areas 1-11 and 13), whelk (Whelk Area 13), shrimp (Shrimp Area 6), eel and smelt (CEAR, 2018h).

For further details on the existing human environment for the Qalipu see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

1.5.1.6 Projects to Consider for Newfoundland and Labrador

Flemish Pass Exploration Drilling

Nexen Energy proposes an exploration drilling project in the Flemish Pass basin, located over 400 km east of St. John's, NL (see Figure 1.10) (CEAR, 2018h). There are several overlapping Aboriginal commercial fishing licences in the project area, but there is no documented FSC fishing within or near the project area (CEAR, 2018h). The traditionally, culturally, socially and economically significant foods harvested by the Labrador Inuit, Innu,

and Southern Inuit that could be potentially impacted by the project include arctic char, Canada goose, seal. The Labrador Shelf is fished for crab, rock cod, cod, Arctic char, sculpins, mussels, clams, winkels, sea urchins, and capelin in coastal waters off Labrador (CEAA, 2018h, p. 403). Commercial-communal licences include groundfish, Greenland halibut, squid, scallop, lobster, snow crab, toad crab, northern shrimp, mackerel, Atlantic halibut, Atlantic cod, eel, smelt, redfish, blue fin tuna, haddock, whelk, capelin, herring, swordfish, sea cucumber, bait, and arctic char. The food, social, and ceremonial fishing licences are for salmon, trout, arctic char, Atlantic cod, rock cod, herring, scallop, whelk, smelt, and seal. Migratory birds are important to the Labrador Inuit and harvested species include eider and black duck, sea ducks, ptarmigan/grouse, Canada goose, murre, merganser, surf, black and white-winged scoter and loons. Harvested eggs of the common eider, gulls, terns, black duck, sea duck, murre, and common guillemots. The northwest Atlantic harp seal, ringed, harbour, grey and bearded seal are harvested throughout the Labrador territory. Atlantic salmon is harvested throughout Labrador.

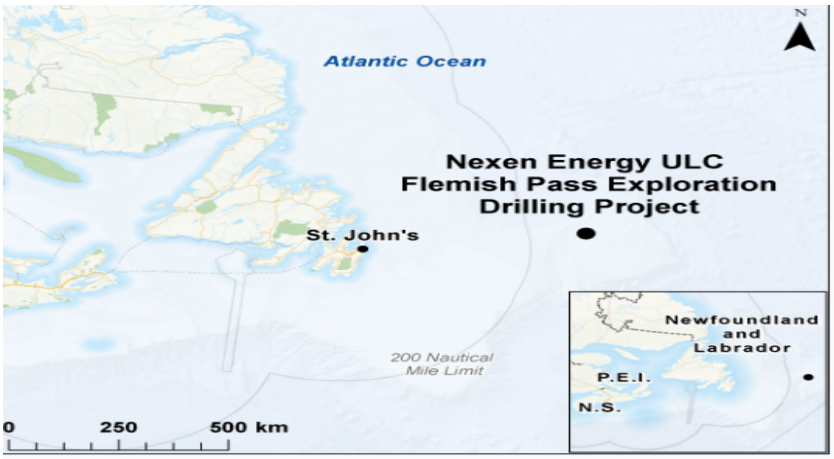

Figure 1.10 Flemish Pass Exploration Drilling Project
(Source: CEAR, 2018h)

Maritime Link

Lower Churchill Hydroelectric Generation Project is comprised of two hydroelectric generation facilities on the Lower Churchill River in Labrador, at Muskrat Falls and Gull Island (see Figure 1.11) (Minister of Environment, 2011). Innu identified duck and geese, Inuit mentioned seal. In 2011, the Innu Nation prepared a report, funded by Nalcor, on the current land and resource uses for traditional purposes in their territory to submit to the Agency and the Lower Churchill Joint Review Panel (Armitage, 2010). The report is not intended to be used for purposes outside of the purposes Nalcor had intended, and permission

may be required by the Innu Nation to include this information that is provided here (Armitage, 2010), however, the report is accessible online. Migratory birds include American black duck, black scoter, Canada goose, common loon, northern pintail, blue-winged teal, harlequin duck, long-tailed duck, merganser, and surf scoter (Armitage, 2010, p. 48).

Innu harvested a variety of fish in the Study Area over the last twenty years including Atlantic rainbow smelt, Atlantic salmon, Atlantic tomcod. A type of char-like, red trout was also harvested (Armitage, 2010, p. 53).

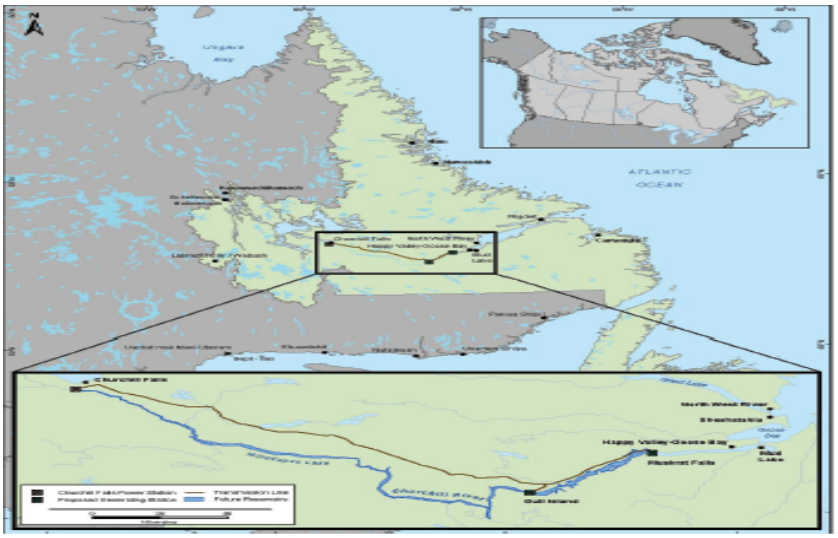

Figure 1.11 Maritime Link Project (Source: Minister of Environment, 2011).

Labrador Island Transmission Link

The Labrador Island Transmission Link is a project that involves an electrical power transmission system between Newfoundland and Labrador (see Figure 1.12) (CEAR, 2017). NunatuKavut, Ekuanitshit, Innu Nation, and Nunatsiavut groups expressed concern over impacts on migrating Atlantic salmon noted that the Strait of Belle Isle is an important migration route for Atlantic Salmon who spawn in the rivers of the Gulf of St. Lawrence, and that the species is culturally and economically important to the community. They also noted that other marine species migrate through the Strait. NunatuKavut agreed to share their IK orally, therefore it is not available in the project documents. NunatuKavut, Ekuanitshit, Innu Nation, and Qalipu expressed concern for migratory birds in traditional hunting areas. Report is very vague.

Figure 1.12 Labrador Island Transmission Link (Source: CEAR, 2017)

Eastern Nfld. Offshore Exploration Drilling

ExxonMobil Canada Ltd. (ExxonMobil) proposed an exploration drilling project in the Jeanne d'Arc Basin and the Flemish Pass Basin, approximately 250 kilometres east of St. John's, Newfoundland and Labrador (see Figure 1.13). The list of Indigenous groups that were consulted on this project were the same as that of the BdN Project (CEAR, 2018g). The proponent concluded that project components and activities will not interact with or be negatively associated with species of traditional importance (for example, Atlantic salmon, swordfish, American eel, or migratory birds) (CEAR, 2018g).

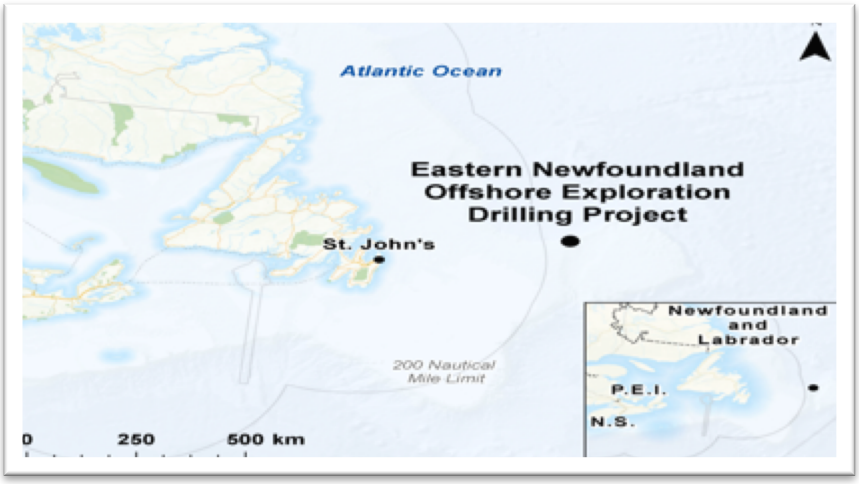

Figure 1.13 Eastern Offshore Drilling Project (Source: CEAR, 2018g)

1.5.2. Nova Scotia

The Mi'kmaq of Nova Scotia are signatories to Peace and Friendship treaties with the British Crown in 1725-26, 1749, 1752, and 1760-61. In Nova Scotia, the Mi'kmaq assert Aboriginal title to the lands, and have constitutionally protected Aboriginal and treaty rights to hunt, fish, and harvest.

1.5.2.1 Kwilmu'kw Maw-klusuaqn Negotiations Office

Eleven Mi'kmaq First Nations of Nova Scotia are in negotiations with Canada and the province through the Kwilmu'kw Maw-klusuaqn Negotiations Office (KMKNO), also referred to as the Mi'kmaq Rights Initiative, to define their treaty rights, Aboriginal rights, and Aboriginal title to the lands in the province, and to determine their own governance structures (Kwilmu'kw Maw-klusuaqn Mi'kmaq Rights Initiative, n.d.). On June 2, 2002, the Mi'kmaq of Nova Scotia, Canada, and Nova Scotia signed an Umbrella Agreement[7], and on February 23, 2007 a Framework Agreement was signed. The Framework Agreement[8] sets out the subject matters to be negotiated which include, among other matters, land and water (including the offshore), natural resources, parks and protected areas (including marine protected areas), and environmental assessment and protection (Kwilmu'kw Maw-klusuaqn Mi'kmaq Rights Initiative, n.d.).

In 2010, the Mi'kmaq, Nova Scotia, Canada Consultation Process Terms of Reference was signed, and lays out the process when governments make decisions that can potentially impact asserted Aboriginal and treaty rights of the Mi'kmaq (Nova Scotia Office of Aboriginal Affairs, 2011a). The KMKNO is in consultation currently with both levels of government on the list of species endangered or at risk, or of concern to the Mi'kmaq, which includes American eel, Atlantic salmon, Atlantic walrus, Atlantic whitefish, blue shark, cusk, North Atlantic right and bottlenose whale, shortfin mako, sowerby beaked whale, striped bass, white

[7] All thirteen Mi'kmaw First Nations signed the Umbrella Agreement.

[8] Only eleven of the Mi'kmaw First Nations are signatories to the Framework Agreement. Annapolis Valley and Sipekne'katik (Shubenacadie) First Nations did not sign. Since then, Sipekne'katik and Millbrook have withdrawn from KMK (Millbrook, 2018; Sipekne'katik, 2016).

shark, and winter skate (Kwilmu'kw Maw-klusuaqn Mi'kmaq Rights Initiative, n.d). Millbrook and Sipekne'katik have withdrawn from KMKNO and conduct consultation on their own behalf (Millbrook, 2018; Sipekne'katik, 2016).

The eleven Mi'kmaw communities party to the KMKNO process hold commercial communal licences for clam, crab (rock, green, Jonah, snow, spider/toad), eel, gaspereau, groundfish including 3Pn), herring, lobster, marine plants, marine worm, mackerel, marine plants, oyster, quahog, seal, sea scallop, sea urchin, shrimp, squid, swordfish (including NAFO 3L, 3M, 3N, 3O and 3Ps), and tuna (bluefin) (CEAR, 2018h).

FSC licences include Atlantic salmon blue shark, blueback herring, brook trout, capelin, clam, cod, crab (including snow crab), eel, gaspereau, groundfish (i.e., cod, catfish, flounder, haddock, halibut and pollock) (NAFO 4X), herring, lobster (Lobster Areas 27, 28, 29, 30, 33, 34 and 35), mackerel, mussel, oyster, periwinkle, quahaug, rainbow trout, razor clams, scallop (Scallop Areas 28A and 29), seal, shad, smallmouth and striped bass, smelt, soft-shell clams, squid, striped bass, swordfish (NAFO 3L, 3M, 3N, 3O, 3Ps), tomcod, and trout (CEAR, 2018h).

1.5.2.2. Millbrook First Nation

Millbrook First Nation holds commercial communal licences for clam, crab (Jonah and snow), herring, lobster, sea urchin, gaspereau, eel, mackerel, seal and tuna, groundfish, hagfish, swordfish (NAFO 3L, 3M, 3N, 3O and 3Ps) (CEAR, 2018h).

FSC licences include Atlantic Salmon, pickerel, eel, smallmouth bass, striped bass, smelt, herring, lobster, mackerel, quahaug, oyster and scallop CEAR, 2018h).

1.5.2.3. Sipekne'katik First Nation

Sipekne'katik First Nation holds commercial licences for clam, snow crab, groundfish (unspecified), lobster, sea scallops, sea urchins, swordfish, tuna, and gaspereau (CEAR, 2018h).

Sipekne'katik First Nation holds FSC licenses to clams (bar, razor, soft-shell), gaspereau, herring, salmon, mackerel, mussel, quahaug, salmon, seal, smallmouth bass, striped bass, trout eel, shad, smelt, crab (other than snow crab), lobster, scallops, and groundfish (CEAR, 2018h)

For further details on the existing human environment for the Nova Scotia Mi'kmaq see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf). For further detail on the individual First Nation breakdown on commercial species, see the Flemish Pass Exploration Drilling Program Environment Impact Statement (pages 522-545).

1.5.2.4. Projects to Consider for Nova Scotia

Alton Natural Gas Storage

Alton Natural Gas Storage received approval to develop an underground natural gas storage facility near Alton, Nova Scotia in 2007 to be able to meet the growing demand for natural gas in Nova Scotia, New Brunswick, and the northeastern United States (Nova Scotia Environment, 2018). The project also entailed constructing and operating a natural gas pipeline to connect the storage facility to the existing Maritimes and Northeast Pipeline Halifax Lateral (see Figure 1.14) (Nova Scotia Environment, 2018). Construction of the project has been delayed due to the consultation challenges by the Mi'kmaw community, especially the First Nations of Millbrook and Sipekne'katik, which assert their rights and title will be impacted (Nova Scotia Environment, 2018).

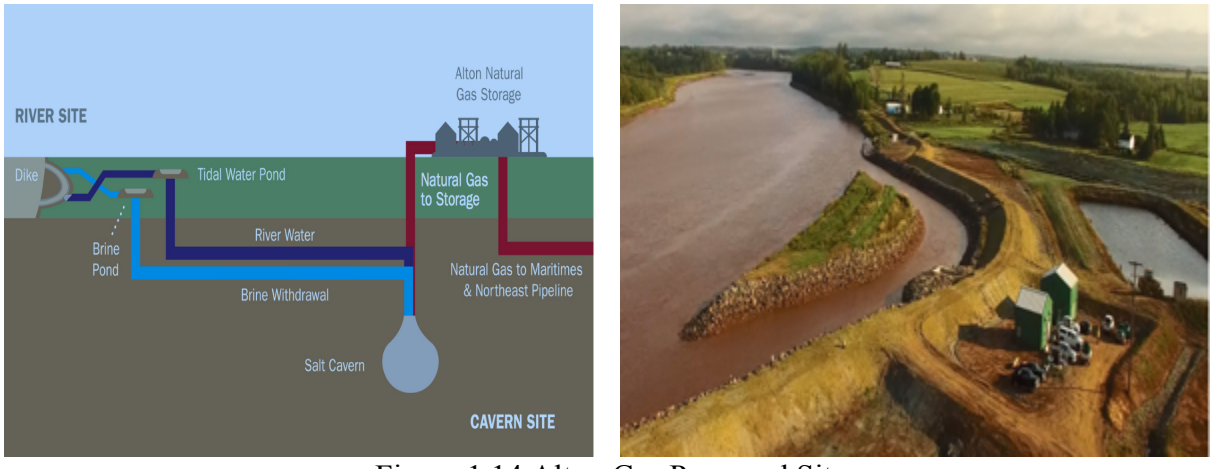

Figure 1.14 Alton Gas Proposed Site
(Source: AltonNaturalGasStorage.ca)

Auld's Cove

Nova Scotia's shift towards renewable energy aims to have 40% of our electricity coming from renewable sources by 2020, requiring a reconfiguration of transmission lines and addition of a new transmission crossing at Auld's Cove (see Figure 1.15) (Nova Scotia Environment, 2017). This will provide increased reliability and security for the electrical system, and will increase Nova Scotia's capacity to receive electricity through the Maritime Link (Nova Scotia Environment, 2017).

Figure 1.15 Auld's Cove Transmission Project Location (NS Environment, 2017a).

Bear Head LNG

Bear Head LNG was approved in 2015 to develop a Liquefied Natural Gas (LNG) facility in Point Tupper, near the town of Port Hawkesbury, on the Strait of Canso in Richmond County, Cape Breton, Nova Scotia (see Figure 1.16) (Nova Scotia Environment, 2017b). This development would include two LNG tank foundations to export eight (8) million tonnes of liquefied natural gas annually (Nova Scotia Environment, 2017b).

Figure 1.16 Bear Head LNG (Source: NS Environment, 2017b)

Beaver Dam Mine Project

Beaver Dam Mine Project is an open pit gold mine between Sheet Harbour and Upper Musquodoboit, Nova Scotia (see Figure 1.17) (CEAR, 2018d). A Mi'kmaw Ecological Knowledge Study (MEKS) was conducted in 2016 to inform the environmental assessment process for the mine (CEAR, 2018d). In Nova Scotia, the Mi'kmaq followed a seasonal pattern of habitation, with habitation in winters usually inland, and summer habitation at the mouths of rivers, in areas of heavy spawning (Lewis, 2006). Current land and resource use identifies trout and eel as primary areas of concern (CEAR, 2018d).

Figure 1.17 Beaver Dam Mine Project (Source: CEAR, 2018d)

Black Point Quarry Project

The Black Point Quarry project is a granite quarry at Black Point, Nova Scotia, including a marine terminal, with an expected lifespan of fifty years (see Figure 1.18) (CEAR, 2018d). Impacts are expected to important marine species and will likely impact food, social, and ceremonial harvesting in Chedabucto Bay; key concerns are for mollusks and salmon (CEAR, 2018d). Ten Mi'kmaq communities hold communal fishing licences in Chedabucto Bay. Other species impacted by the project would include eels, lobster, marine plants, rock crab, shrimp (deep water shrimp affected in shipping lanes deeper than 73 metres), scallop, sea urchin, tuna, squid, cod, herring, and mackerel (CEAR, 2018d). Outside the project area, offshore marine life concerns include crab, hagfish, and swordfish (CEAR, 2018d). A Mi'kmaw Fisheries Study was conducted by KMKNO.

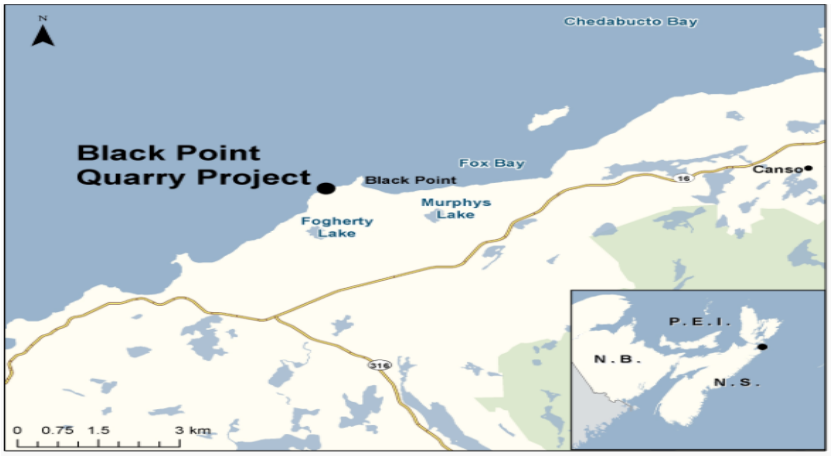

Figure 1.18 Black Point Quarry Project (Source: CEAR, 2018d)

Donkin Export Coking Coal Project

The Donkin Export Coking Coal Project, located in Cape Breton, NS, is an underground coal mine facility (see Figure 1.19) (Xstrata & Stantec, 2012). The KMKNO raised a number of concerns with this project, from the impacts on the food, social, and ceremonial fishing for lobster and eel, and commercial fishing of lobster and crab (CEAR, 2018e). The MEKS conducted by Membertou Geomatics determined a commercial fishery exists in the project area for lobster, and to a lesser degree mackerel, American eel, flounder, gaspereau, trout and crab (Xstrata & Stantec, 2012).

Figure 1.19 Donkin Export Coking Coal Project
(Source: Mi'kmaq Ecological Study Area, Xstrata & Stantec, 2012)

Scotian Basin Exploration Drilling Project

BP Canada Energy Group proposes to conduct exploration drilling 230 km to 370 km off the southeast coast of Nova Scotia (see Figure 1.20) (CEAR, 2018i). Commercial fishing licences in NAFO areas 4X, 4W, and 4VS are within the project area (CEAR, 2018i). Nova Scotia Mi'kmaq were represented by KMKNO; Millbrook and Sipekne'katik (representing themselves); New Brunswick Mi'kmaq of Buctouche, Eel River Bar, Fort Folly, Esgenoopetitj, Indian Island, and Pabineau were represented by Mi'gmawe'l Tplu'taqnn Inc.; the Maliseet Nation represented Kingsclear, Madawaska, Oromocto, St. Mary's, and Tobique First Nations; the Maliseet community of Woodstock participated separately; and the Mi'kmaq Confederacy of Prince Edward Island represented Lennox Island and Abegweit (CEAR, 2018i). The groups were concerned about the impacts of a blow out on fisheries, marine mammals, and migratory birds, and the project's effects on species that are traditionally and commercially important such as American eel, Atlantic sturgeon, Atlantic salmon, Bluefin tuna, swordfish, herring, gaspereau (alewife), lobster, crab, and shrimp (CEAR, 2018i). Sipekne'katik raised concerns with swordfish and sea turtles (CEAR, 2018i). Mi'gmawe'l Tplu'taqnn Inc. were concerned also about the endangered North Atlantic Right Whale which is a culturally significant species to the Mi'gmaq and migratory birds which are important to Mi'kmaq culture, provide cues for harvesting locations along the coast, and are an important food source (CEAR, 2018i).

Figure 1.20 Scotian Basin Exploration Drilling Project (Source: CEAA, 2018i)

Shelburne Basin Venture Exploration Drilling Project

Shell Canada proposes an exploratory drilling program approximately 250 km off the coast of Nova Scotia (see Figure 1.21) (CEAR, 2018j). Concerns expressed by Indigenous groups include the impacts on the fishery; biodiversity, life cycles, migration, and predator-prey interactions for culturally and/or commercially important species (CEEA, 2018j). Species of concern include Atlantic salmon, Atlantic herring, gaspereau and sea urchin, all of which are important for food, social, and ceremonial practices (CEEA, 2018j). The Maritime Aboriginal Peoples Council raised concern with corals and sponges, especially the glass sponge (CEAR, 2018j). KMKMO identified concern for effects on pockmarks, important for benthic species (CEEA, 2018j).

Commercial communal fisheries include tuna (bluefin), swordfish, shark, crab, groundfish, hagfish, mackerel, Atlantic cod, Atlantic herring, northern shrimp, pollock, and scallop, lobster, haddock, and halibut (CEAR, 2018j).

Membertou Geomatics conducted a traditional use study for the project and concluded there was no FSC in the project area, but concluded their findings should be interpreted with caution due to sample size and lack of consideration of future needs for FSC (CEAR, 2018j).

Figure 1.21 Shelburne Basin Venture Exploration Drilling Project (Source: CEAA, 2018f)

1.5.3. New Brunswick

The Mi'gmaq, Wolastoqiyik (Maliseet), and Passamaquoddy of New Brunswick are signatories to Peace and Friendship treaties with the British Crown in 1725-26, 1749, 1752, and 1760-61, and continue to assert their Aboriginal title to the lands, and have constitutionally protected Aboriginal and treaty rights to hunt, fish, and harvest in their territories.

Both the Mi'gmag and Wolastoqiyik (Maliseet) of New Brunswick signed self-government Umbrella Agreements with the governments of Canada and New Brunswick in 2011, which set out a process that the signatories will follow to get to a Framework Agreement and a Consultation Agreement (Indigenous and Northern Affairs Canada, 2014).

1.5.3.1. Mi'gmaq

The Mi'gmaq have commercial communal licences which include gaspereau, eel, groundfish, herring, lobster, sea scallop, swordfish and tuna (CEAR, 2018h).

The Mi'gmaq[9] FSC licences include (soft shell) clams, eel, gaspereau, herring, lobster, mackerel, mussels, oysters, quahog, rock crab, (Atlantic) salmon, scallops, seals, shad, smelts, striped bass, and trout (CEAR, 2018h).

1.5.3.2. Wolastoqiyik (Maliseet)

The Wolastoqiyik (Maliseet) hold communal commercial licences for crab, gaspereau, groundfish, herring, lobster, mackerel, sea scallop, and sea urchins, shad, shrimp, smelt, swordfish and tuna (CEAR, 2018h).

The Wolastoqiyik (Maliseet) hold FSC licences for eel, gaspereau, groundfish, lobster, (Atlantic) salmon, scallop, shad, smallmouth and striped bass, smelt, soft-shell clams, striped bass, sturgeon, trout (CEAR, 2018h).

1.5.3.3. Passamaquoddy

The Passamaquoddy currently do not hold communal commercial licences (citation?). The Passamaquoddy hold FSC licences for Atlantic salmon (CEAR, 2018h).

For further details on the existing human environment for the New Brunswick Mi'gmaq, Wolastoqiyik (Maliseet), and Passamaquoddy see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

1.5.3.4 Projects to Consider for New Brunswick

PEI-NB Cable Interconnection Upgrade Project

PEI-NB Cable Interconnection Upgrade Project was approved by the New Brunswick government in 2016 (see Figure 1.22) (New Brunswick Environment and Local Government, n.d.). The PEI Energy Corporation proposed the cable interconnection project to complete an

[9] The difference between the spelling of Mi'kmaq or Mi'kmaw, and Mi'gmaq is based on the different orthographies in use by the Mi'kmaq of Nova Scotia, and the Mi'gmaq of New Brunswick. The Mi'kmaw Chiefs of Nova Scotia and the Mi'kmaw Grand Council have adopted the Smith-Francis orthography (Cape Breton University), while the the Mi'gmaq of New Brunswick follow the Listuguj orthography.

interconnection upgrade within the Northumberland Strait, between the provinces of Prince Edward Island (PEI) and New Brunswick (NB) to meet energy demand and upgrade aging infrastructure (New Brunswick Environment and Local Government, n.d.).

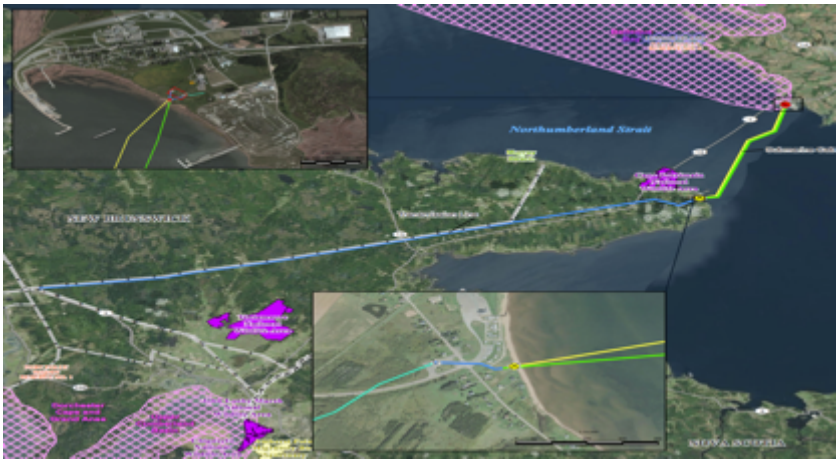

Figure 1.22 Location of PEI-NB Cable Interconnection Upgrade Project
(Source New Brunswick Environment and Local Government, n.d.)

Sisson Project (Tungsten and Molybdenum Mine)

The federal government approved the Sisson Project in 2017, despite acknowledging that the mine, located approximately 60 km northwest of Fredericton, New Brunswick (see Figure 1.23), and owned by the proponent Sisson Partnership would cause significant adverse environmental and cumulative effects on the current and traditional use of lands and resources by New Brunswick Maliseet Nations (CEAR, 2013b). The final decision stated that the adverse environmental effects could be justified and the project was allowed to proceed (CEAR, 2013a).

The project area is located within the Nashwaak River watershed, a sub-watershed of the greater St. John River watershed, within the asserted traditional territory of the Wolastiqiyik and the Mi'kmaq and who claim Aboriginal title to all of the province of New Brunswick (CEAR, 2013c). The Maliseet "traditional territory is understood to be comprised of the greater Saint John River watershed as far north as the Gulf of St. Lawrence to Québec City, east through the state of Maine where it meets the Passamaquoddy territory, south to the Bay of Fundy, and west where it meets the neighboring Mi'kmaq nations" (CEAR, 2013c, Section 1.1, p. 8-570).

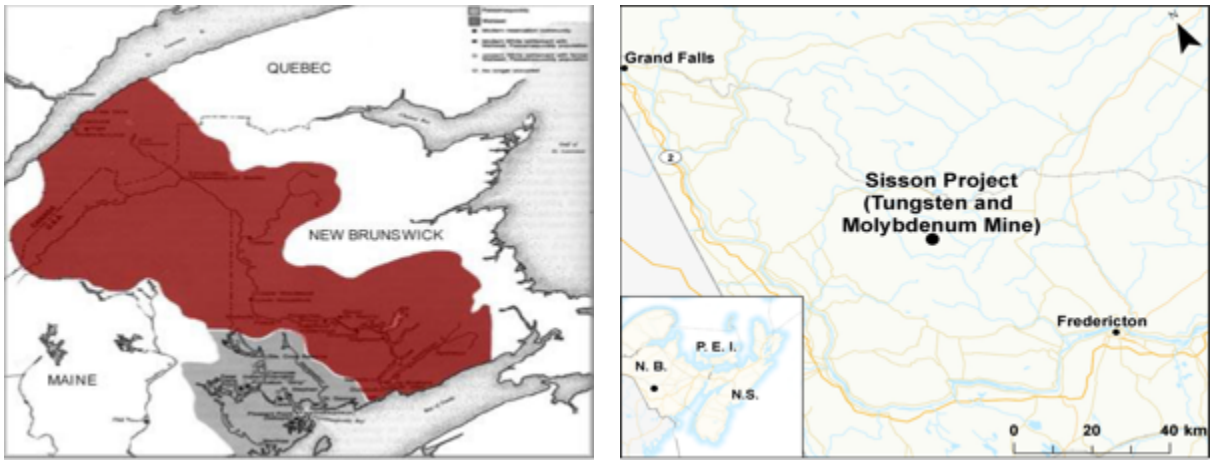

Figure 1.23 Sisson Project Tungsten and Molybdenum Mine (Source: CEAR, 2013c)

The Maliseet fish in central New Brunswick, in fact, in the IKS prepared for this EIA, salmon was identified as one of the species most central to Maliseet livelihood and culture (CEAR, 2013c). The Comprehensive Study Report also mentions American eel and the cumulative effects on Atlantic salmon from multiple pressures.

1.5.4. Prince Edward Island

In 2007, Mi'kmaq of Prince Edward Island entered a Partnership Agreement with the governments of Canada and Prince Edward Island for a tripartite process to address matters of mutual concern (Indigenous and Northern Affairs, 2014). In 2012, the parties signed a Consultation Agreement which sets out how the Mi'kmaq in the province are consulted on matters that might impact asserted Aboriginal and treaty rights (Indigenous and Northern Affairs, 2012b).

Commercial communal fishing licences include crab (rock, snow spider/toad), herring, lobster, mackerel, scallop, squid, shark, squid, swordfish, whelk, groundfish (NAFO 3Pn), clam, eel, American oysters, quahaugs, seal, tuna, mussel and smelt (CEAR, 2018h).

FSC licences include clam (Bar, razor, soft-shell), crab (rock, toad), eel, herring, lobster, mackerel, mussels, oysters, quahaug, scallops, seals, smelt, striped bass, gaspereau, groundfish, and salmon (CEAR, 2018h).

For further details on the existing human environment for the Prince Edward Island Mi'kmaq see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

1.5.4.1 Projects to Consider for PEI

PEI Energy Corporation (PEI-NB Cable Interconnection Upgrade Project) would have the same impacts and concerns expressed as in the NB PEI-NB Cable Interconnection Upgrade Project (Note: There may be an oversight on the impact to the FSC fishery (see Section 3.2.2.2.3 Vol. 4 page 3.75). Beyond the Interconnection Upgrade Project, there are not other federal or provincial assessments to review.

1.5.5. Quebec

1.5.5.1. Listuguj, Gesgapegiag, and Gespeg First Nations

In 1999, the Micmac Nation of Gespeg signed a self-government Framework Agreement with the governments of Canada and Quebec (Indigenous and Northern Affairs Canada, 2010b). Matters to be negotiated include hunting, fishing, and food-gathering (Indigenous and Northern Affairs Canada, 2010b).

In 2008, the First Nations of Listuguj, Gesgapegiag, and Gespeg became signatories to a self-government negotiation process and signed a Framework Agreement in 2012 with the Governments of Canada and Quebec (Indigenous and Northern Affairs Canada, 2014). Matters to be negotiated include, but are not limited to natural resources and environmental assessment (Indigenous and Northern Affairs Canada, 2014).

The First Nations of Gesgapegiag, Gespeg, and the Maliseet of Viger belong to the Mi'gmaq Maliseet Aboriginal Fisheries Management Association and fish commercially for mackerel, herring, and bluefin tuna, groundfish, halibut, and redfish (CEAR, 2018h). The First Nations of Listuguj, Gesgapegiag, and Gespeg harvest lobster, shrimp, crab, herring, mussels, tubot, cod and waterfowl for commercial purposes (CEAR, 2018h). The First Nations of Listuguj,

Gesgapegiag, and Gespeg hold FSC licences for cod, eel, lobster, salmon, and striped bass (CEAR, 2018h).

For further details on the existing human environment for the Listuguj, Gesgapegiag, and Gespeg see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

1.5.5.2. Innu of Quebec[10]

There was very limited publicly available data for these groups.

Nutashkuan

In 2004, the Innu First Nation of Nutashkuan, also referred to as Natashquan, were signatories to a self-government Agreement-in-Principle along with the First Nation of Mamuitin, and negotiations continue. Matters to be negotiated include the regulation of harvesting (hunting and fishing activities), commercial fishing, wildlife protection and management, and environment assessment, amongst other matters (Indigenous and Northern Affairs Canada, 2010a). Nutashkuan commercially fish crab, clams, lobster and groundfish, and traditionally fish salmon and sea trout, hunt birds and waterfowl, and collect eggs (CEAR, 2018h).

Ekuanitshit.

Ekuanitshit co-manages Pêcheries Shiepk, a commercial fishing enterprise, with the Pakua Shipi Innu First Nation on the north shore. Together, they commercially harvest scallops, crab, halibut, sea cucumber and whelk. Traditional species of importance include fish (Atlantic) salmon, carp, ouananiche, scallop, and whitefish), migratory birds (black guillemot, duck, geese), and bird eggs (CEAR, 2018h).

For further details on the existing human environment for Nutashkuan and Les Innus d'Ekuanshit see the Flemish Pass Exploration Drilling Program Environment Impact Statement – Existing Human Environment (https://www.ceaa-acee.gc.ca/050/documents/p80129/121314E.pdf).

[10] There are two other Innu communities located on the north shore of the St. Lawrence River who are part of the Mamit Innuat Conseil Tribal, but are not included in this desktop study.

1.5.5.3. Projects to Consider for the Innu of Quebec.

Advised by Woods and Equinor to hold. Language issue for accessing information.

1.6 UNDERSTANDING THE CONNECTION BETWEEN INDIGENOUS KNOWLEDGE AND HEALTH

The United Nations Educational, Scientific and Cultural Organization (2017) defines Indigenous knowledge as "the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings...", knowledge that "is integral to a cultural complex that also encompasses language, systems of classification, resource use practices, social interactions, ritual and spirituality" (para 1-2). Also referred to as Traditional Knowledge (TK), the International Association of Impact Assessment (2018) defines traditional knowledge as "the knowledge, innovations and practices of indigenous and local communities...[d]eveloped from experience gained over the centuries and adapted to the local culture and environment" (para 1). TK can take many forms (stories, songs, values, beliefs, rituals, community laws, language, etc.) and is transmitted orally from generation to generation and is collectively (IAIA, 2018). Indigenous knowledge is gained through shared experience and observation, and it has developed, been measured, tested, and retested, over thousands of years of living on the land (Battiste 1998; 2000; Berkes & Berkes, 2009; Kovach, 2009).

Nunatsiavut[11] defines Inuit Knowledge (IK) as "the knowledge, understanding and values held by Inuit based on personal observation, collective experience and oral transmission over generations..." (p. 117). NunatuKavut (2013d) defines IK as the "cumulative body of knowledge, practice and belief about the relationship of living beings with one another and their environment, transferred from one generation to another by cultural transmission. One

[11] Where definitions for IK were included in documents for the groups covered by this report, I have included them.

category is local knowledge of animals, plants and landscape...[a]nother relates to world view, the meaning of people's environmental observations" (p. 233).

Mi'gmawe'l Tplu'taqnn (2016), the representative organization of the Mi'gmaq of New Brunswick representing the communities of Amlamgog (Fort Folly) First Nation, Natoaganeg (Eel Ground) First Nation, Elsipogtog First Nation (Big Cove), Oinpegitjoig (Pabineau) First Nation, Esgenoôpetitj (Burnt Church) First Nation, Tjipõgtõtjg (Buctouche) First Nation, L'nui Menikuk (Indian Island) First Nation, Ugpi'ganjig (Eel River Bar) First Nation and Metepenagiag Mi'kmaq Nation, defines Mi'gmag Indigenous Knowledge (MIKS) as "the collection and adaptation of knowledge that Mi'gmaq hold in accord with all components of the natural environment and the interrelationships that exist between all Creation (animate and inanimate matter" (p. 6).

The Mi'kmaq of Nova Scotia define their knowledge system as Mi'kmaq Ecological Knowledge (MEKS), a "cumulative body of knowledge that is passed on from generation to generation, Elder to child... (p. 3)", the "collection of wisdom and experiences that the Mi'kmaq have with all components of the natural environment; the interrelationships that exist between all life forms from a unique historical, cultural and spiritual perspective (p. 7)" (Mi'kmaq Rights Initiative, n.d.). The knowledge is dynamic and changes over time as new experiences bring forward new understandings regarding the Earth's ecology (Mi'kmaq Rights Initiative, n.d., p. 3).

Etuaptmumk, or Two-Eyed Seeing, is a guiding principle that has garnered wide acceptance in recent years by Indigenous health and environmental researchers (Lewis, 2018). In fact, the the Canadian Institutes of Health Research has adopted Etuaptmumk (Two-Eyed Seeing) as a guiding principle for funding Indigenous health research through the Institute of Indigenous Peoples' Health and emphasizes that balancing the two approaches will lead to the reduction in inequities in Indigenous health (Canadian Institutes of Health Research, 2016).

Etuaptmumk, as envisioned by Mi'kmaw Elders Albert and Murdena Marshall, and Dr. Cheryl Bartlett (a Professor Emerita of Biology at Cape Breton University), brings together the

strengths of both western and IK systems to garner insights into complex issues around health and environment that might otherwise escape our consideration (Bartlett, Marshall, & Marshall, 2012; Iwama et al., 2009). Martin (2012) argues that incorporating IK is meant to elucidate how Indigenous peoples see and experience the world around them. *Etuaptmumk* creates an ethical way forward to recognize and honour that there are multiple ways of knowing about the world, and that autonomous epistemologies and ontologies can complement each other in discovering new truths (Goulding, Steels, & McGarty, 2016; Greenwood et al., 2017; Hovey et al., 2017; Marsh et al., 2015; Martin, 2012). *Etuaptmumk* refocuses the understanding of the connection between Indigenous cosmologies, values, spirituality, and cultural beliefs that link humankind and the natural world and the important connection to the land and environment (Goulding, Steels, & McGarty, 2016; Marsh, et al., 2015; McKeon, 2012). These are important considerations for an adequate assessment of impacts on Indigenous health.

The Draft Environmental Impact Statement (EIS) Guidelines issued by the Agency directs the proponent to take into consideration health as a valued component (VC) such as whether fish or migratory birds have a social or cultural value, and to take Indigenous perspectives and knowledge into consideration when assessing the effects to the physical and biological environment (CEAR, 2018a). Furthermore, the EIS directs that the proponent considers the changes in environment on health or socio-economic conditions with respect to Indigenous peoples (CEAR, 2018a).

This is an important consideration in environmental assessment, because beyond the Crown's constitutional and legal obligation to consult and accommodate Aboriginal and treaty rights, the Crown has a fiduciary obligation to Indigenous peoples when decisions are made that can impact their lives (Morellato, 2008). Canada has also committed to UNDRIP without qualification (Fontaine, 2016), which means that Canada has to honour Article 29 (3) which states that Indigenous peoples have the right to the protection of the environment and the productive capacity of their lands and resources and will take effective measures to restore the health of Indigenous peoples (United Nations, 2008).

Furthermore, Equinor has requested that the focus of this report is to assist Equinor to understand how direct or indirect impacts, including potential cumulative impacts, to IK and TLU may be affecting Indigenous groups in the region, particularly as it impacts the health and well-being of Indigenous peoples. Indigenous groups have been clear that this traditionally has been where EIS studies have been lacking (Government of Canada, 2018c), and this report is intended to help the proponent understand health from an Indigenous perspective.

The Public Health Agency of Canada (2016) recognizes social determinants of health (SDoH) as influencing the health of populations. The SDoH include measures for income, social status, social support networks, education, employment/working conditions, social and physical environments, personal health practices and coping skills, healthy child development, gender, and culture (Public Health Agency of Canada, 2016, para. 1). The First Nation Information Governance Centre (FNIGC) is a national organization mandated by the Assembly of First Nations to collect data on the health and well-being of First Nation communities, uses a combination of western and traditional understandings to assess health and well-being (FNIGC, 2018). The FNIGC (2018, p. 8) recognizes that the definition of First Nation health has to include "the total health of the total person within the total environment"; total health to mean the interconnected, inter-related, and interactive web of life and living, and total person to mean the body, mind, heart, and spirit.

Defined in this way, health includes physical, mental, emotional, and spiritual health, healthy behaviour and lifestyle, healthy mental function, healthy connection to culture, cultural continuity with the past and towards future opportunity, healthy spirituality as a First Nations person, and healthy home life, community life and extended family connections (National Aboriginal Health Organization, 2007). Total environment involves a healthy connection and relationship with the living environment, which includes the land and the natural, cultural, structural/material, political, historical, behavioural, community, family and everyday living environment (FNIGC, 2018, p. 8). FNIGC (2018) is funded by the Government of Canada to collect data that will promote the health and well-being of First Nations.

Therefore, in order for studies to be useful, environmental reports must reflect Indigenous worldviews and knowledges to improve understandings of health (Advisory Panel for the Review of Federal Support for Fundamental Science, 2017). Repeatedly, Indigenous groups dismiss studies because they do not adequately reflect concerns about how development impacts the deep and sacred connections that Indigenous peoples have to their environments. Indigenous health and well-being depends on the well-being of territory and resources. What has not been captured in previous environmental assessment processes is an understanding of the unique impacts that resource development has on the health Indigenous peoples. Health and wellbeing is closely linked to cultural and spiritual connection to land, the ability to engage in traditional activities, and take care of the earth (Ford et al., 2010; Greenwood & de Leeuw, 2007; Lewis, 2018; Richmond, 2009).

Indigenous worldviews[12] based on this understanding have developed over thousands of years of living on the land (Battiste 1998; 2000; Edosdi, 2008; Getty, 2010; Kovach, 2009; Lewis, 2018; Rains, Archibald, & Deyhle, 2000), and comes from a tribal understanding that is specific to place (Kovach, 2009). Cajete (2000) uses the term 'ensoulment' to capture Indigenous relationship to the natural world, a metaphysical attachment at the deepest level of psychological involvement with the land, and any disassembly of this essential component of being has implications for the health and wellness of Indigenous people. (p. 186). When a community has lost its ability to live in harmony with the life processes of which it is part, it is left wounded (Duran & Duran, 2000).

Fundamentally, Indigenous and non-Indigenous people see the world differently, and ignoring this difference continues to put Indigenous peoples at risk of harm (Lewis, 2018) Place-based epistemological and ontological understandings centre Indigenous peoples, and their understandings of health are intimately connected to the health of the land and environment around them (Lewis, 2018). Meaningful research, then, respects Indigenous knowledge and

[12] Indigenous worldviews are not provided to Equinor on a place-by-place basis, but can be generally understood as connected to place, relational, and adaptive to changing circumstances.

brings to light how integral the relationship between land and environment is for Indigenous peoples (Tuck & Yang, 2012).

Environmental dispossession is a term used to characterize displacement, environmental contamination, assimilation, unprecedented resource extraction, or land rights disputes (Big-Canoe & Richmond, 2014; Richmond & Ross, 2009; Tobias & Richmond, 2014). Environmental dispossession, the process whereby access to the resources of the traditional environment is reduced, has uprooted Indigenous social, spiritual, and cultural ways of life around the world. Health, therefore, must be understood within the social, environmental, cultural, or psychological contexts in which they occur (Clark, 2014).

Moreover, scholars of Indigenous health recognize that the oppressive colonial structural determinants – the historical, ideological, political, societal, and economic structures – within which Indigenous people try to survive, contribute to ongoing health inequities (de Leeuw, Lindsay, & Greenwood, 2015; Lewis, 2018; Reading, 2015; Reading & Wien, 2009). Not only are they detrimental to health, these colonial structural determinants also contribute to the oppression of Indigenous worldviews, spirituality, and self-determination over the decisions that impact health (Reading, 2015). Indigenous worldviews, spirituality, and self-determination have been, and continue to be, harmed by these colonial structures; therefore, it is important to acknowledge that it will take an understanding of how Indigenous knowledge, worldviews, spirituality, relationship to land and environment, cultures, and languages, have been oppressed, but as determinants, can contribute to Indigenous health and well-being (de Leeuw, Lindsay, & Greenwood, 2015).

Using a SDoH approach does not allow one to consider how the structural determinants of health such as colonization, assimilative policies, including land displacement and environmental dispossession, have uniquely impacted First Nation health (Reading, 2015).

Those who are grounded in their culture and traditions are happier, but colonization - the residential school system, land displacement and environmental dispossession - have impacted cultural values, sacred knowledge, language and practices, all of which are essential

determinants of individual, family, and community wellbeing (Adelson, 2005; First Nations and Inuit Health, 2015; Kant et al., 2014; Kelm 2008; Kirmayer, Simpson, & Cargo, 2003). In Canada, Shandro et al. (2017) have assessed the emotional reaction of several First Nations in British Columbia who suffered a loss of salmon access in the Fraser River when the Mount Polley Mine Tailings Dam failed in 2014. Their findings revealed that band members who were impacted reported feelings of increased sadness, fear, anger, and confusion (Shandro et al., 2017). A spiritual connection to land - the ability to engage in traditional activities and take care of the earth - are central to Indigenous identity and the basis of socialization (Ford et al., 2010; Greenwood & de Leeuw, 2007; Richmond, 2009). The Mi'kmaw word *m'sit no'kamaq* translates to "all my relations" and conveys an interrelationship with the spirit of all beings, both animate and inanimate, within their territory, and furthermore, conveys that there are implied reciprocal responsibilities in those relationships (Giles, Fanning, Denny, & Paul, 2016).

There are spiritual aspects within the pursuit of traditional activities and gathering of wild foods (Lewis, 2018; Wilson, 2003). Food gathering and harvest participation activities are an important aspect of spiritual health, not only for the individual, but for the community as a whole, and are important aspects of cultural definition, social connection based on the ethics of sharing and reciprocity, and collective survival (Lewis, 2018; Myers et al., 2005; Sharma, 2010; Takano, 2005). Activities such as harvesting and gathering are not only functional in terms of providing sustenance, but are activities that meet many Indigenous peoples' physical, spiritual, mental and emotional needs (Lewis, 2018; Wilson, 2003). McAuley and Knopper (2011) note that the loss of Indigenous peoples' ability to procure, prepare, and consume traditional foods has important consequences for the maintenance of cultural activities. Insight into this connection is what is being shared in the oral histories, the narratives of experiences in place and teachings about the norms, protocols, and value systems of being on the land (Hart, 2010; Kovach, 2009; Louis, 2007; Prosper et al., 2011).

The Public Health Agency of Canada (2013) now recognizes that higher economic and social status are the most important determinants of health. Yet social status, associated with higher incomes, social position and hierarchy (Public Health Agency of Canada, 2013), has

historically been denied to Indigenous peoples who are one of the most economically disadvantaged and vulnerable groups of people in Canada (Palmater, 2011; Reading & Wien, 2009). First Nations are historically denied access to the conditions to improve their socio-economic status (Reading & Wien, 2009).

Typically, First Nation populations on-reserve are younger than Canadian population as a whole, with more than half (51.6%) of First Nation adults under the age of 30, compared to 35.4% of Canadians being under the age of 30 (FNIGC[13], 2018). First Nations adults living in First Nations experience lower employment rates (47.1% compared to 61.1%) and higher unemployment rates (31.6% compared to 7.0%) than Canadian adults (FNIGC, 2018). Nunatsiavut Inuit experience similarly low levels of employment, with only 39.1 of participants enjoying full-time jobs (Centre for Indigenous Peoples' Nutrition and Environment, 2018). Data from the 2008/2010 RHS indicate that 39.9% of First Nation adults living in First Nation communities have less than a high school education, compared to 23.8% of Canadians (FNIGC, 2016). In Nunatsiavut, 44.8% of the participants in the survey reported they have less than secondary school education (Centre for Indigenous Peoples' Nutrition and Environment, 2018). Data for specific groups is limited, as the First Nations Information Governance Centre respects the autonomy of regional processes to make their own data that FNIGC collects on their behalf available, that data is not disaggregated to the First Nation level because the sample size may be too small or may reveal individuals at the First Nation level (M. Denny, personal communication, October 25, 2018).

In general, Indigenous people consistently report lower levels of health compared with other Canadians; they report higher rates of disease, and they die younger than their non-Indigenous counterparts (Castleden, Martin, & Lewis, 2016; de Leeuw, Greenwood, & Cameron, 2010; Reading & Wien, 2009). For example, data from the 2008/10 RHS[14] indicate that 44.1% of

[13] The First Nations Regional Health Survey (RHS) collects data on First Nations living on-reserve across Canada. Most of the communities which are a focus of this report participated in the RHS. Nova Scotia is the only RHS report that is available for the data on the thirteen Mi'kmaw First Nation communities.

[14] The 2015/16 RHS cycle focused on Chronic Health Conditions so I use the 2008/10 data for comparison purposes.

First Nations adults reported their health as thriving, compared to 60% of the general Canadian population (FNIGC, 2016). In Nunatsiavut, however, 70% of adults report their health as good to excellent (Centre for Indigenous Peoples' Nutrition and Environment, 2018).

First Nation adults across Canada continue to live in poverty (First Nation Information Governance Centre, 2016; Reading & Wien, 2009; Union of Nova Scotia Indians, 2013). In Canada, First Nations score 25 points lower than non-Indigenous communities on the Community Well-Being Index (CWBI), a composite measure of socio-economic wellbeing, educational outcomes, labour force activity, income levels, and housing conditions in Canadian communities (Indigenous and Northern Affairs Canada, 2016). Income is a widely accepted social determinant of health, in fact, the Public Health Agency of Canada (2013) lists income and social status as two of the most significant determinants of health.

The Public Health Agency of Canada (2013) notes that health improves with each step up the socio-economic ladder because those who are poorest have the least control over the things that can improve their health. According to the last Regional Health Survey (2015-2016), 49.3% of First Nation adults in Canada report personal income of less than $20,000 per year (FNIGC, 2018). Data for Inuit is limited, however, data from a 2007-08 Inuit Health Survey is available, and provides data that indicates 45% of Inuit participants in the survey age 65 years or less estimate their income to be less than $20,000 per year (Centre for Indigenous Peoples' Nutrition and Environment, 2018).

This creates economically-founded food insecurity, which is then compounded by food insecurity as a result of loss of access to traditional territory and restricted hunting, fishing, and gathering activities. The 2008/2010 RHS was the first study to look at food insecurity among First Nations, and at that time, 54.2% of First Nation adults reported they were food insecure, and that 43.2% of households with children were food insecure (FNIGC, 2016). By 2015-16, 50.8% of First Nation households reported being moderately to severely food insecure (FNIGC, 2018). Conversely, 59.1% of First Nation adults who had traditional foods shared with their household's and reported that they always or almost always ate nutritious and balanced meals (FNIGC, 2018).

In Nunatsiavut, 44.2% of households reported being moderate to severe food insecure, and 45.8% households with children are food insecure (Centre for Indigenous Peoples' Nutrition and Environment, 2018). Food insecurity was a major problem in Nunatsiavut with unemployment, low income, and high food costs stated as the main reasons for food insecurity (Centre for Indigenous Peoples' Nutrition and Environment, 2018). Food sharing is still very important in Nunatsiavut, with 80% of households sharing food with others (Centre for Indigenous Peoples' Nutrition and Environment, 2018). At the time that survey data was collected in 2007-08, 20% of households reported that they worry about the contaminants in country food[15] (Centre for Indigenous Peoples' Nutrition and Environment, 2018). During the environmental review process for the Lower Churchill Falls project, the Joint Panel heard from the Nunatsiavut Inuit and others in the region, that they are increasingly concerned about methylmercury in country foods, and in particular, in the seal and fish as a result of hydro development (Canada Environmental Assessment Agency, 2012).

Finally, human health risk assessment methodology employed by the regulatory agencies such as Health Canada and the United States Environmental Protection Agency limit human receptor exposure characteristics to Indigenous people to ingestion of fish and wild game (Health Canada, 2010; USEPA, n.d.). When these agencies hear that people no longer consume fish and wild game, it is determined that there are no health impacts due to those missing food sources (Arquette et al., 2002). This does not account for the health impacts of not consuming country foods and following traditional diets. It does not factor into consideration the impacts of sadness, fear, anger, and confusion associated with separation from country and traditional foods as noted by Shandro et al. (2017), nor does it factor into consideration the impact of the loss of spiritual connection to environment and the ability to engage in traditional activities and take care of the earth, which are, as already noted, central to Indigenous identity and the basis of socialization (Ford et al., 2010; Greenwood & de Leeuw, 2007; Richmond, 2009).

[15] This was not specific to any country food in particular.

1.7 GENDERED IMPACTS

Canada requires all federal departments and agencies to conduct gender-based analysis (GBA) on all legislation, policies, and programs (cite). Moreover, the Supreme Court of Canada interprets Section 15 of the Charter to require that GBA be culturally relevant to Indigenous Women (Native Women's Association of Canada, 2007). The Native Women's Association of Canada (NWAC) (2007) developed guidance documents for conducting culturally relevant gender-based analysis (CRGBA), based on a recognition that Indigenous women's issues are different from Indigenous men's issues, that they do not benefit equally from socio-economic opportunities that Indigenous men do. Gender in this context requires that analysis is conducted based on the gendered roles that people live, including those of Two-Spirit People (NWAC, 2010a).

CRGBA, as developed by NWAC, highlights the gendered impacts of colonialism that has resulted in gender inequality and the silencing of Indigenous worldviews which hold the traditional relationship between men and women as one of balance, reciprocity, interdependence, and respect (NWAC, 2010a). Historically, Indigenous women were the keepers of traditional practices and customs, and were revered for their sacred role to create and nourish life[16] (NWAC, 2010a). Today, Indigenous women identify as water keepers and continue to be the carriers of water (NWAC, 2018). Indigenous women have a spiritual connection to water because of their ability to carry the waters of new life (Anderson, 2010). Water signifies life and sustains life, and rreciprocity with water is about the obligation to respect and appreciate what water has to offer (Anderson, 2010). Indigenous women view water rights as essential to the survival of their families and communities, their cultures, languages, and lifeways, and any disruption of their connection to water disrupts these sacred relationships (NWAC, 2010b). Moreover, "Indigenous worldviews and knowledges necessitate a relational understanding of the role of water" in Indigenous peoples lives (NWAC, 2010b, p. 18).

[16] This role is important for Indigenous women across Canada.

Exposures to hazardous chemicals in water are especially detrimental to Indigenous women; due to their central role in food gathering and preparation they can be exposed to and absorb contaminants in food supplies (Carmen & Waghlby, 2012). One especially alarming group of contaminants are persistent organic pollutants (POPs), by-products of the mid-20th century industrial boom (USEPA, n.d.). POPs are mainly taken up through contaminated food and water, and populations that consume large amounts of fish, shellfish, and country foods are at even higher risk of exposure; this makes POP exposure a real threat to Indigenous communities observing traditional, subsistence-based ways of life (USEPA, n.d.). Even low levels of exposure may lead to endocrine or reproductive abnormalities, therefore, POPs may pose a significant threat to Indigenous women's health (Carmen & Waghlby, 2012). Women are especially susceptible to POPs due to their tendency to build up in body fat, which can then be passed on to babies through placenta and breast milk (USEPA, n.d.). The potential for exposures to environmental contaminants in traditional foods often place pregnant or nursing Indigenous mothers in the position of having to choose between the nutritional and cultural values, between eating their traditional foods (and the many cultural-social benefits that come from eating traditional foods), and the development and health of their children (Carmen & Waghlby, 2012), This is especially impactful considering the socio-economic state of most Indigenous communities who must rely on a subsistence lifestyle because of food insecurity. Furthermore, because these contaminants can be passed from mother to child, and children face early exposure through traditional foods, the effects of POPs on children and youth cannot be ignored. The UN Convention of the Rights of the Child Article 24 2(c) directs states to take measures to ensure adequate nutritious food, recognizing the risks of environmental pollution (United Nations Human Rights, n.d.).

POPs may be tied to diabetes and obesity; more study is needed to better understand the correlation between these factors (WHO, 2010), the study of which is made all the more urgent since Indigenous populations experience the highest rates for obesity of all populations in Canada, especially among those who live on-reserve, with a co-morbidity of diabetes three to five times higher than the general Canadian population (Bruce, Riediger, Zacharias, & Kue Young, 2010).

In an era of reconciliation with the Government of Canada, the consideration of Indigenous women's fundamental rights and unique needs must be highlighted. The rights of women are protected under various legal instruments. The *Constitution Act, 1982* ensures that women's rights are protected: Section 15 protects equal rights based on sex; Section 35 (4) ensures that Aboriginal and treaty rights apply equally to males and females (Canada, 2018a). UNDRIP also includes clauses for Indigenous women's rights: Article 21 (2) ensures that states pay attention to women in efforts to improve their socio-economic conditions; Article 22 ensures that attention is paid to Indigenous women and children in the implementation of the Declaration; and Article 44 stipulates that the Declaration applies equally to male and female Indigenous people (United Nations, n.d.).

Under reconciliation, Indigenous women are asserting self-determination to revitalize their traditional roles and responsibilities, according to their own knowledge systems and worldviews and in ways that reflect traditional values of mutual respect and relationality, and an absolute belief of a sacred interdependence on each other, the land, and the environment (NWAC, 2010a). Reconciliation in this context requires a social responsibility to end colonial attitudes that have devalued the role of Indigenous women (NWAC, 2010a).

1.8 CUMULATIVE IMPACTS

During the public review process for CEAA, 2012, several First Nation and First Nation groups, including Elsipogtog and the Maliseet Nation of New Brunswick, expressed concern about the increasing pace of resource exploitation in their territories, and the loss that means for traditional uses of the valued resources, and the implications that has for practicing culture (Government of Canada, 2018c). This sentiment is widespread and it should be expected that Equinor will hear similar concerns voiced in their consultations with the various groups. For that reason, FNESL has prepared Table 1.2 (Projects of Concern to First Nations in the Atlantic Region), which compiles fishing data from all projects that First Nations may focus on. Additionally, FNESL highlights climate change and marine protected areas as a few current issues that add to the concern of local communities that they see as increasing the

pressures on the natural resources more generally, and fish and fish habitat in particular, in the Atlantic Region.

Climate Change

Anthropogenic climate change is leading to rising ocean temperatures creating problems for marine species, which puts the Atlantic Aboriginal fishery at risk. To protect the economic sustainability of the fisheries operations throughout the Atlantic region, climate change impacts must be taken into consideration as cumulative to the impacts of resource development occurring throughout the region. Integrated Fisheries Management Plans (IFMPs) are used by Fisheries and Oceans to manage marine species in Canada (Fisheries and Oceans, 2017b). In the Atlantic Region there are IFMPs for the Gulf, Maritimes, Newfoundland and Labrador, and Quebec Regions (Fisheries and Oceans Canada, 2017e). In 2016, the Office of the Auditor General (OAG) of Canada (n.d.) reported that Fisheries and Oceans has not been managing Canada's fisheries for sustainability and conservation adequately, that about 30% of IFMPs are outdated or incomplete, and that for "12 of the 15 major fish stocks in the critical zone and required rebuilding plans, the department had no plans or timelines for developing them" (para. 2.14). The OAG (n.d.) has warned that the fishing industry is facing serious threats from overexploitation of species[17], that climate change is causing warmer and more acidic oceans (para. 2.1), and that Fisheries and Oceans has classified fewer than half of Canada's major fish stocks as healthy, which has serious implications for First Nations who rely on the fisheries not only for commercial purposes, but for FSC purposes as well (para. 2.2).

Marine Protected Areas

In the Atlantic Provinces, the Aquatic Climate Change Adaptation Services Program (ACCASP) has released a report about the use of marine protected areas (MPAs) to create buffer zones for marine species and habitats, protecting them from the impacts of climate change. After conducting a Climate Change Vulnerability Assessment (CCVA) to test the vulnerabilities of 39 important fish and invertebrate species based on projected warming

[17] There are other threats to species as well.

patterns for the next 20 to 50 years, and dividing them into high, medium and low vulnerability groups, Fisheries and Oceans will use the results to inform MPA planning for the Scotia Shelf region in the future (Fisheries and Oceans, 2017a). How it impacts fisheries will be important to First Nations.

According to the Unama'ki Institute of Natural Resources (UINR), Mi'kmaw communities in Cape Breton are supportive of MPAs. Beginning in 2011, St. Ann's Bank (see Figure 1.24), off the coast of Cape Breton Island, "was announced as an Area of Interest and is currently working through legislation as a MPA" (UINR 2017, para. 3). UINR stated,

> In principle our Unama'ki leaders support the concept of MPAs. Biodiversity, sustainability, protection for the future are all concepts that align with our practice of *netukulimk*[18]. The Mi'kmaw right to our food, social, and ceremonial fisheries is included in the [MPA] legislation. (UINR 2017, para. 9)

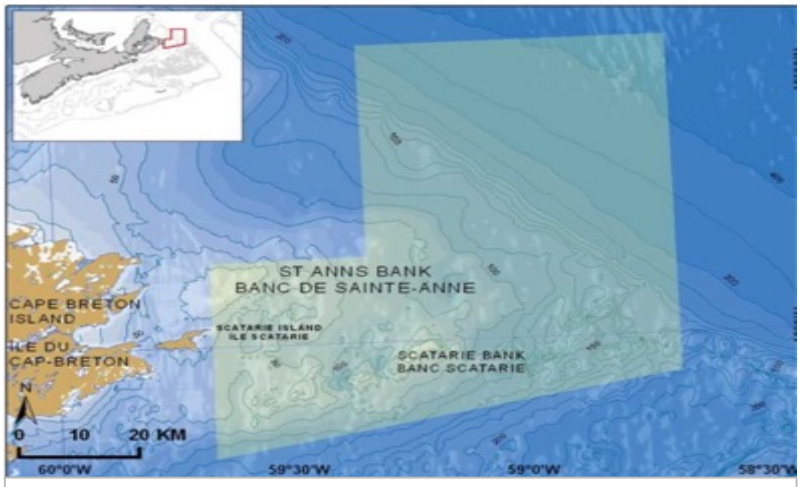

Figure 1.24 - St. Ann's Bank (Source: http://www.uinr.ca/wp-content/uploads/2017/02/map2.jpg)

However, there have been difficulties already with the MPA process, when those securing the space do not consult adequately with First Nations. For example, Membertou made a

[18] *Netukulimk* is "the complex concept that encompasses Mi'kmaq sovereign law ways and guides individual and collective beliefs and behaviours in resource protection, procurement, and management to ensure and honour sustainability and prosperity for the ancestor, past and future generations" that is expressed through ceremony and rituals (Moffitt, Davis, Mcmillan, & Prosper, 2011).

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significant investment to secure and get authorization to fish for tuna on St. Anns Bank. Approvals were given at the local, regional, and national levels. A few months after the tuna licence was purchased, Membertou was informed they could not fish in the St. Anns Bank MPA (UINR, 2017, para. 10).

Table 1.2 is intended to place fishing data compiled from various projects in the region that First Nations may focus on in front of Equinor to refer to in their consultation process with the various groups.

Table 1.2
Projects of Concern to First Nations in the Atlantic Region

Type of Use	Alton Gas	Auld's Cove Transmission	Bear Head LNG	Beaver Dam	Black Point	Donkin Coal	Eastern Offshore	Flemish Pass	KMKNO(2)	Maritime Link	PEI-NB Cable	Scotian Basin	Shelburne Basin	Sisson Mine
Commercial														
American eel						*		*	*			*		
American shad														
Arctic char								*						
Atlantic salmon (3, 5, 7)									*			*		
Atlantic whitefish									*					
Bait								*						
Capelin (3, 7)								*						
Clams								*						
Cod (Atlantic (3, 6, 7, 8), rock)					*			*					*	
Coral and sponges (glass)													*	
Crab (snow, rock, toad)					*	*		*			*	*	*	
Cusk									*					
Eel					*			*						
Flounder						*					*			
Gaspereau						*						*		
Greenland halibut (3, 7, 8)								*						
Groundfish								*			*		*	
Haddock								*					*	
Hagfish					*								*	
Halibut (Atlantic)								*			*		*	
Herring					*			*			*	*	*	
Lobster					*	*		*			*	*	*	
Mackerel					*			*			*		*	
Mako									*					
Marine plants					*									
Mussels								*						
Plaice											*			
Polluck													*	
Redfish (5, 7, 8)								*			*			
Scallop					*			*			*		*	
Sculpin (3)								*						
Sea cucumber								*						
Sea urchin					*			*						
Shark (blue, white (KMKNO))									*				*	
Shrimp (deep water, northern (3, 7, 8)					*			*				*	*	
Smelt (rainbow)								*						
Snow crab (3, 7, 8)								*						
Squid					*			*						
Striped bass									*					
Sturgeon												*		

Table 1.2
Projects of Concern to First Nations in the Atlantic Region

Type of Use	Alton Gas	Auld's Cove Transmission	Bear Head LNG	Beaver Dam	Black Point	Donkin Coal	Eastern Offshore	Flemish Pass	KMKNO(2)	Maritime Link	PEI-NB Cable	Scotian Basin	Shelburne Basin	Sisson Mine
Swordfish					*		*	*				*	*	
Trout						*								
Tuna (bluefin)					*			*				*	*	
Whelk								*						
Winkels								*						
Winter skate									*					
Food social ceremonial														
American eel	*	*	*	*		*	*					*		*
Arctic char								*						
Bass	*													
Capelin		*												
Clam											*			
Cod (Atlantic (6), rock)		*					*	*						
Crab (Toad, snow)		*	*				*				*			
Flounder (winter)		*												
Gaspereau	*	*											*	
Herring (Atlantic)		*						*			*		*	
Lobster		*				*					*			
Mackerel		*									*			
Mollusks					*									
Mussel											*			
Oyster											*			
Perch	*													
Pickerel	*													
Salmon (Atlantic) (5)	*				*		*	*		*		*	*	*
Scallop		*	*					*			*			
Seal		*						*			*			
Sea urchin													*	
Shad	*	*												
Smelt (Atlantic rainbow)	*	*						*		*	*			
Sturgeon		*												
Swordfish							*							
Tomcod		*								*				
Trout (red)	*			*				*		*				
Turbot							*							
Urchin		*	*											
Walrus		*												
Whelk								*						
Migratory Birds														

Table 1.2
Projects of Concern to First Nations in the Atlantic Region

Type of Use	Alton Gas	Auld's Cove Transmission	Bear Head LNG	Beaver Dam	Black Point	Donkin Coal	Eastern Offshore	Flemish Pass	KMKNO(2)	Maritime Link	PEI-NB Cable	Scotian Basin	Shelburne Basin	Sisson Mine
Canada goose (geese)								*		*				
Duck (black, eider, harlequin (4, 8), long-tailed, sea)								*		*				
Eggs (tern, black duck, sea duck, murre, common guillemots)							*	*						
Loon (common)								*		*				
Merganser								*		*				
Murre								*						
Northern pintail										*				
Ptarmigan/grouse								*						
Scoter (black, surk, white-winged)								*		*				
Teal (Blue-winged)										*				
Unspecified							*							
Sea Turtles (6 , 7 & 8 - Note: reference was not specific to species)		*										*		
Mammals														
Blue whale							*							
Bottlenose whale (4, 7, 8)									*					
North Atlantic Right Whale(1, 6, 7, 8)							*		*					
Seal (northwest Atlantic harp, ringed, harbour, grey, bearded)							*	*						
Sowerby beaked whale (4, 7, 8)									*					
Walrus									*					
Notes														
1) Mentioned as cultural significant to Mi'kmaq														
2) KMKNO is in discussions with federal and provincial governments for these species identified as endangered or at risk, or of concern to Mi'kmaq.														
3) Species of importance either as commercially important fishery, have historic, socio-cultural and economic value, or play vital role in the surrounding ecosystem.														
4) SAR status - Special Concern														
5) SAR status - Threatened														
6) SAR status - Endangered														
7) May breed and spawn in project area.														
8) Species that may be impacted by project activities.														

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