

Additional Information for the CNSOPB Call for Bids NS18-3 Parcels

January 2019

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1.0 Introduction

The CNSOPB administers the Call for Bids process on behalf of the federal and provincial governments for the Canada-Nova Scotia offshore area. Call for Bids is an annual process that gives oil and gas companies the opportunity to bid and obtain an exploration licence (EL).

The Call for Bids NS18-3 parcels (CFB NS18-3) represent the potential area within which exploration rights could be issued by the CNSOPB in the current Call for Bids. The CFB NS18-3 parcels are located on the Scotian Shelf, within the Sable Subbasin. The parcels are in shallow water, with maximum water depths up to 100 metres. The parcels are shown in Figure 1.

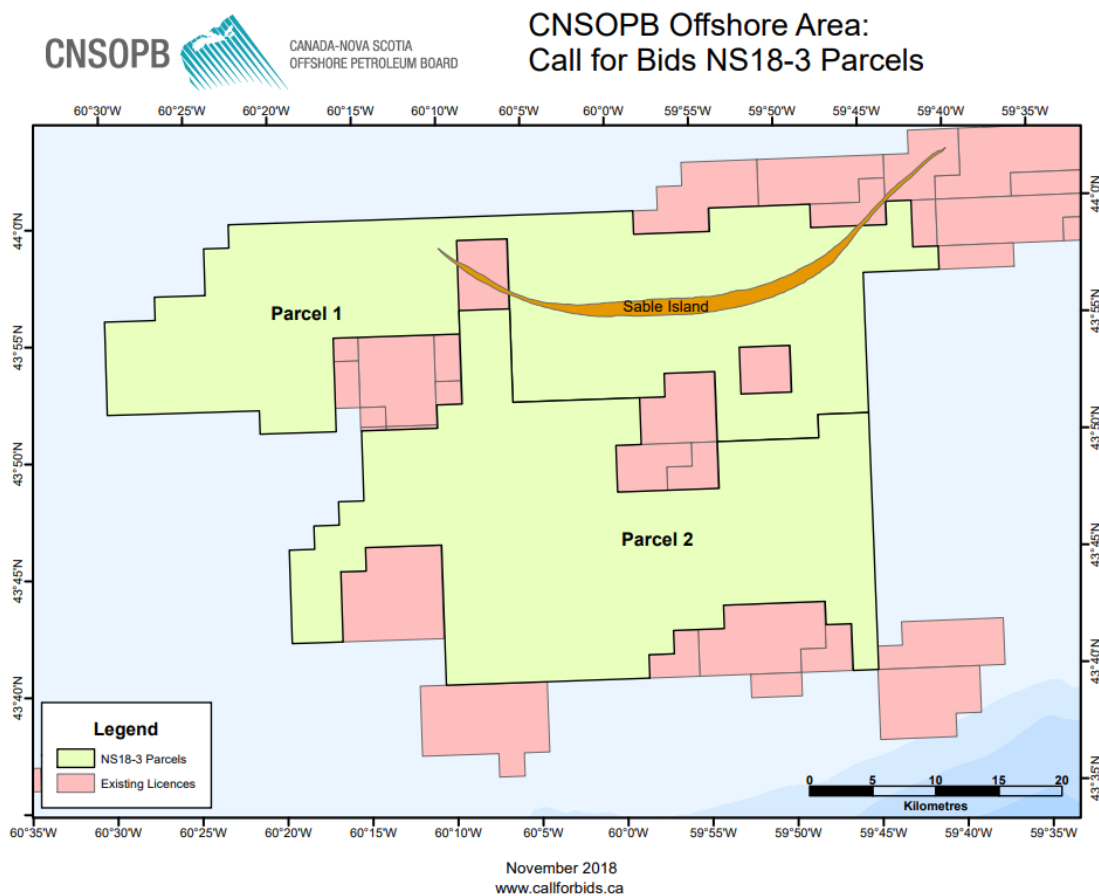


Figure 1

2.0 Purpose and Approach

This report has been prepared to support Call for Bids NS18-3 and focuses on presenting current environmental information pertinent to the parcels. Key environmental considerations within the parcels are identified; the information presented is not intended to replace project-specific environmental assessments (EAs) that are required for potential future exploration programs.

This report provides current environmental information on the following topics:

- special areas;
- species of special status;
- fisheries;
- marine sound; and
- malfunctions and accidental events/cumulative effects.

Should an exploration licence (or licences), be issued for the CFB NS18-3 parcels, petroleum companies must demonstrate that they will be able to perform the work in a safe and environmentally responsible manner, before any authorization is provided by the CNSOPB. A project-specific environmental assessment is required as part of an application for authorization to conduct offshore exploration activities. Furthermore, the CNSOPB conducts Strategic Environmental Assessments (SEA) which are used in its decision-making with respect to the potential issuance of petroleum rights during a call for bids. It is recommended by the CNSOPB that the information within an SEA (or SEAs) that correspond with a Call for Bids area be used by operators to assist in the preparation of project specific environmental assessments. The parcels fall within the study area of the *Strategic Environmental Assessment for Offshore Petroleum Exploration Activities: Eastern Scotian Shelf – Middle and Sable Island Banks – Phase 1A*.

3.0 Environmental Considerations

3.1 Special Areas

3.1.1 Sable Island National Park Reserve

Sable Island became “Sable Island National Park Reserve” in December, 2013. Parks Canada manages the National Park Reserve. The National Park Reserve is within Parcel #1 (see Figure 1). In addition to being a National Park Reserve, Sable Island contains critical habitat area for the SARA-listed Roseate Tern. Ipswich Sparrows, Barn Swallows and Sable Island Sweat Bees are species at risk that also inhabit the National Park Reserve.

Any potential future operators must take into account that this special area is now a designated National Park Reserve. Determining appropriate mitigation measures and commitments required to protect the National Park Reserve and its inhabitants requires operator communications with Park Canada. The *Accord Acts* specifically obligate the CNSOPB to consult with Parks Canada on the potential impacts to the National Park Reserve in cases where low-impact exploration activities are proposed to be carried out within the National Park Reserve.

As per amended *Accord Acts* legislation, an operator is not permitted to conduct any exploratory drilling on or within one nautical mile (approximately 1.85 kilometres) of the National Park Reserve. With respect to petroleum exploration

activities, surface access rights to the National Park Reserve are limited to those activities with a low impact on the environment.

Low-impact exploration activities could include seismic surveys, as well as aeromagnetic and aerogravity surveys. Similar to marine seismic surveys, a terrestrial seismic survey is a technique used to obtain detailed images of the various types of rock layers located under the earth's surface to determine the potential presence of oil and gas. Aeromagnetic and aerogravity surveys are completed via aircraft using the earth's magnetic and gravitational forces to help understand the rock layers under the earth's surface.

The CNSOPB has committed to drafting guidance in early 2019 to provide additional definition of low-impact exploration activities that may be permitted (pursuant to the *Accord Acts* legislation) within the Sable Island National Park Reserve. This guidance will address how such activities could be carried out in a safe and responsible manner, while minimizing the potential for adverse effects.

Operators currently within the vicinity of the National Park Reserve (i.e., ExxonMobil with the Sable Offshore Energy Project, and Encana with the Deep Panuke Project) are required to maintain existing Codes of Practice with respect to the National Park Reserve. These Codes of Practice include requirements to avoid flying over the Island when en-route to the respective platforms; emergencies being the exception. Both of these natural gas production projects have existed in proximity to the parcels for many years, without any significant adverse environmental effects, as indicated by the annual environmental effects monitoring (EEM) results (available on the CNSOPB website at www.cnsopb.ns.ca).

While these projects still exist, it is important to note that Deep Panuke is no longer producing and is engaged in early decommissioning and abandonment activities. The Sable Offshore Energy Project is simultaneously decommissioning and abandoning wells and production installations.

Parks Canada is currently preparing the Management Plan for the National Park Reserve. If an environmental assessment (EA) is required for a future proposed program in the CFB NS18-3 parcels, the Management Plan must be taken into account in any future project-specific EA.

3.1.2 The Gully Marine Protected Area

The Gully Marine Protected Area (the Gully) is located east of Sable Island on the edge of the Scotian Shelf and encompasses 2,364 square kilometres making it the largest underwater canyon in the western North Atlantic. Zone 1 of the Gully is critical habitat for the endangered Scotian Shelf population of the Northern

Bottlenose Whale, and the Gully is important habitat for 15 other species of whales and dolphins. Surface waters of the Gully are home to tiny plankton and a variety of fish such as sharks, tunas and swordfish, and seabirds. Halibut, skates, cusk and lanternfish are found to depths of 1,000 m within the Gully. The seafloor of the Gully is inhabited by crabs, sea pens, anemones, brittle stars, and the highest known variety of cold water corals in Atlantic Canada, with approximately 30 species identified to date.

Section 5A of the Canadian Coast Guard's Notices to Mariners provides guidelines for vessels operating in the Gully:

<https://www.notmar.gc.ca/publications/annual-annuel/section-a/a5a-en.php>.

Both of the CFB NS18-3 parcels are within the vicinity of the Gully, such that activities in the parcel area may affect the Gully. In particular, sound propagation from seismic programs and drilling programs and effects from potential malfunctions or accidental events could cause environmental effects in the Gully. When preparing a project-specific environmental assessment, potential future operators are expected to address sound propagation and the potential for malfunctions and/or accidental events to effect the Gully and its inhabitants.

3.1.3 Western/Emerald Banks Conservation Area

In 2017, the Western/Emerald Banks Conservation Area (a restricted fisheries zone) was established within the category of "other effective area-based conservation measures" by Fisheries and Oceans Canada to make a lasting contribution to marine conservation in the Scotian Shelf Bioregion. This area is shown in Figure 2. It is not within or adjacent to the CFB NS 18-3 parcels but effects from noise and/or potential malfunctions or accidental events could potentially cause environmental effects on the area.

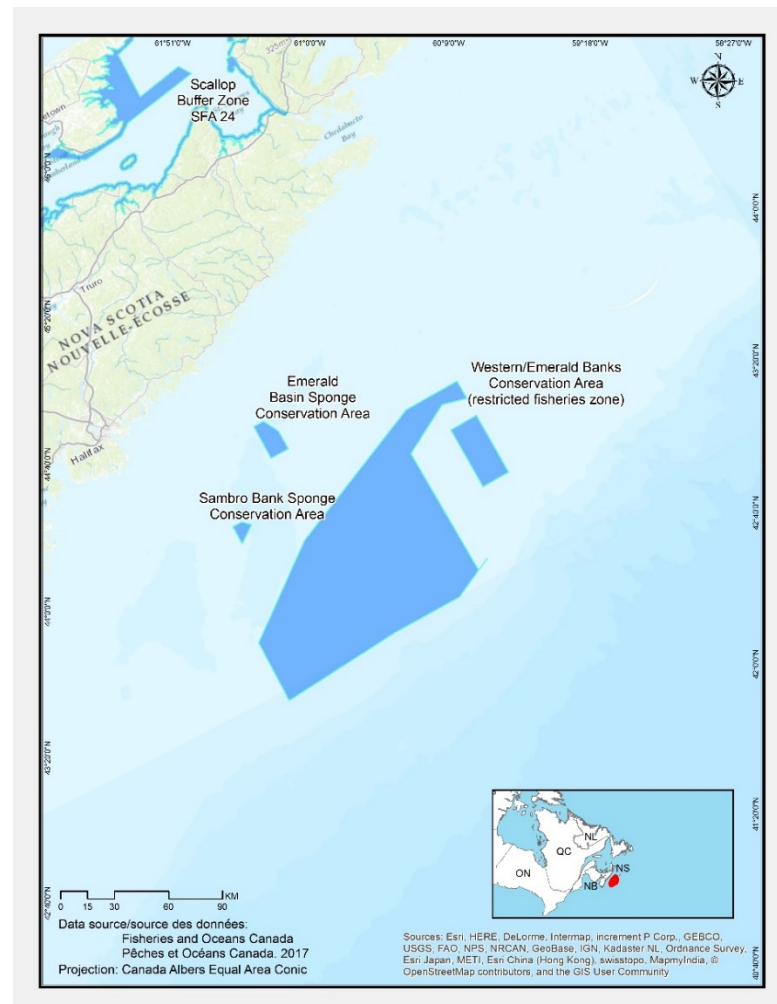


Figure 2. The Western/Emerald Banks Conservation Area

The Western/Emerald Banks Conservation Area is expected to have high adult fish and invertebrate diversity compared to other Eastern Scotian Shelf banks. The Western/Emerald Banks Conservation Area is known to be a significant spawning and nursery ground for haddock and important habitat for depleted species that have been assessed as at-risk by the Committee on the Status of Endangered Wildlife in Canada, including: Atlantic cod, American plaice and winter skate. Other fish species including herring, halibut, silver hake, redfish, and yellowtail flounder also inhabit the area. All commercial and recreational fisheries using bottom-contact gear and/or gear known to interact with groundfish are prohibited in the area (DFO 2017a).

Both of the CFB NS18-3 parcels are within the vicinity of the Western/Emerald Banks Conservation Area, such that noise or potential malfunctions and accidental events originating in the parcels may affect the Conservation Area.

Petroleum activities are not listed as incompatible activities with the conservation of the ecological components of interest for the Western/Emerald Bank Conservation Area (DFO 2017a). However, when preparing a project-specific environmental assessment, any potential future operator is expected to address sound propagation and the potential for malfunctions and/or accidental events to affect the area and its inhabitants.

3.2 Species of Special Status

Some species with protections under the *Species at Risk Act* (SARA) may have permanent residence or migratory presence in or near the CFB NS18-3 parcels. Any approved activity in or near areas with an increased likelihood of interaction with species at risk may require enhanced mitigation and this must be addressed in future project-specific EAs. The following aquatic species listed under SARA may use the area in the vicinity of the CFB NS18-3 parcels:

- Atlantic Wolffish listed as Special Concern
- Spotted Wolffish listed as Threatened
- Northern Wolffish listed as Threatened
- White Shark listed as Endangered
- Leatherback Sea Turtle listed as Endangered
- Loggerhead Sea Turtle listed as Endangered
- Blue Whale listed as Endangered
- North Atlantic Right Whale listed as Endangered
- Northern Bottlenose Whale (Scotian Shelf Population) listed as Endangered
- Fin Whale listed as Special Concern
- Sowerby's Beaked Whale listed as Special Concern

Operators are encouraged to visit the Species at Risk Public Registry (<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>) and DFO's aquatic species at risk mapping tool (<http://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html>) for up-to-date information on aquatic species at risk that may occur in or near the CFB NS18-3 parcels.

There have been recent changes in population status, SARA status, and/or new information available for the Northern Bottlenose Whale, North Atlantic Right Whale, the Blue Whale, and the Loggerhead Sea Turtle, which may occur in or near the parcels. A sighting maps for all marine mammal species off the coast of Nova Scotia is provided in Figure 3. Note that this sightings map is based on opportunistic sightings and does not represent marine mammal abundance or distribution.

3.2.1 Northern Bottlenose Whale

The Scotian Shelf population of Northern Bottlenose Whale is listed as Endangered under Schedule 1 of the *Species at Risk Act* (SARA). The Northern Bottlenose

Whale population is small, with an estimated 143 animals. Anthropogenic (human-caused) noise is of particular concern since Northern Bottlenose Whales rely on sound to carry out their life functions, including foraging, socializing, and navigation. The deep-diving behaviour of these whales may make them especially vulnerable to physiological impacts from acoustic disturbance.

The Scotian Shelf population of Northern Bottlenose Whales inhabits deep waters (>500 metres) along the continental slope off of Nova Scotia and southeastern Newfoundland. The majority of sightings to date have been in three adjacent submarine canyons on the Eastern Scotian Shelf: the Gully, Shortland Canyon, and Haldimand Canyon. In 2010, these canyons were identified as critical habitat for the population under the Species at Risk Act (SARA) and a Critical Habitat order was recently published ensuring legal protection from destruction under SARA. See http://www.sararegistry.gc.ca/virtual_sara/files/g1-15150.pdf for further information.

3.2.2 North Atlantic Right Whale

The North Atlantic Right Whale is listed as Endangered under Schedule 1 of SARA. In 2017, the North Atlantic Right Whale suffered an unprecedented population loss of 12 individuals in the Gulf of St. Lawrence and protecting the species is a top priority for DFO. Recovery objectives for the North Atlantic Right Whale include reducing mortality and injury from vessel strikes and entanglements in fishing gear, and reducing injury and disturbance as a result of vessel presence or exposure to contaminants and other forms of habitat degradation (DFO 2014).

While none of the deaths were attributable to petroleum activities, the species does transit the Scotian Shelf and Slope area, and there exists the possibility that one or more individuals may transit through the CFB NS 18-3 parcels. Assessment of the potential effects on the North Atlantic Right Whale, taking into account these population losses, shall be required in any future project-specific environmental assessments for programs proposed within the CFB NS18-3 parcels.

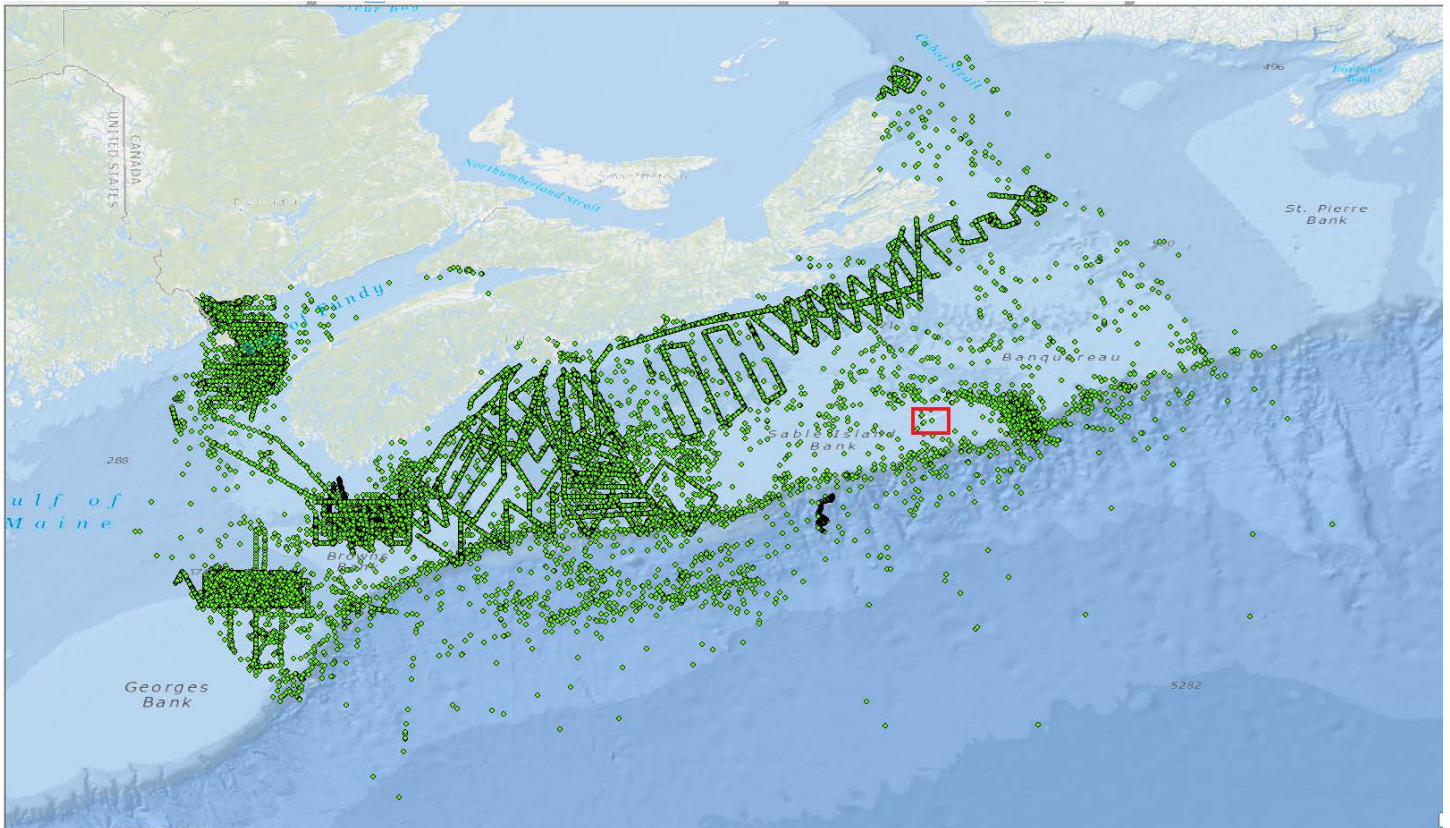


Figure 3. Marine Mammal sightings from the Fisheries and Oceans Canada Maritimes Region database (2018) with approximate area of the NS 18-3 parcels outlined in red. Note that this sightings map is based on opportunistic sightings and does not represent marine mammal abundance or distribution.

3.2.3 Blue whale

The Blue Whale (Northwest Atlantic population) is listed as Endangered under Schedule 1 of the SARA. In 2018, DFO published a Canadian Science Advisory Secretariat (CSAS) report identifying habitats important to Blue Whales (DFO 2018). The CSAS report identified the important features and attributes of important habitats to blue whales to be:

- sufficient quantity and quality of prey;
- free access to transit corridors;
- enough physical space to freely maneuver;
- water of sufficient quality to not result in loss of function; and
- an acoustic environment that does not interfere with communication, passive detection of prey or navigation, or impede use of important habitats by blue whales or their prey.

The Scotian Shelf/Slope Break was identified by DFO as habitat important for the Blue Whale and this area overlaps with a portion of Parcel 2 of CFB NS18-3. There is a possibility that Blue Whales may be encountered by future operators in the CFB NS18-3 parcels, and that the important features and attributes could be affected by exploration activity. Therefore, any environmental assessment for

future proposed programs in the CFB NS18-3 parcels must take into account these important features and attributes of the area for the species.

3.2.4 Loggerhead Sea Turtle

The Loggerhead Sea Turtle was listed as endangered under Schedule 1 of the Species at Risk Act (SARA) in 2017. A recovery strategy for the Loggerhead Sea Turtle in Canada is currently under development.

Loggerhead Sea Turtles are vulnerable to threats through all of their life stages, from egg to adult, in a variety of habitat types. Within Atlantic Canada, small and large juveniles are present. Threats to Loggerhead Sea Turtles within the broader Northwest Atlantic can affect the number of juveniles that come into Atlantic Canadian waters. Potential threats associated with offshore petroleum exploration include: underwater noise, marine pollution (contaminants and debris ingestion), and vessel strikes, (DFO 2017b).

Any environmental assessments for future proposed programs in the CFB NS18-3 parcels must take into account the addition of the Loggerhead Sea Turtle to Schedule 1 of the SARA and its sensitivities.

3.2.5 Marine Birds

Birds can be attracted to offshore platforms, drilling rigs, and support vessels to rest, and can become disoriented and attracted to light sources. In Atlantic Canada, nocturnal migrating birds and night-flying seabirds (such as storm-petrels) are the birds most at risk of attraction to lights. Attraction to lights may result in collision with lit structures and incineration or partial incineration in flares). Safe and effective capture, handling, and release of stranded birds can further reduce impacts, especially for rare and threatened species. Potential future operators are expected to discuss their planned procedures with the Canadian Wildlife Service of Environment and Climate Change Canada, and the CNSOPB.

3.2.5.1 Leach's Storm Petrel

Leach's Storm-Petrels are small seabirds that frequently become stranded on vessels and platforms at night as they are attracted to lights. There has been a decline in the Leach's Storm Petrel population in recent years. Any environmental assessments for future proposed programs in the CFB NS18-3 parcels will be expected to take into account the population decline of this species.

3.3 Fisheries

The CFB NS18-3 parcels include areas used by the fishing industry; limited fisheries may occur within the parcels. An updated fisheries landings maps are provided below in Figure 4 and 5. Although there are few fisheries occurring within the CFB NS18-3 parcels, there are a number of fisheries at operate directly adjacent to the parcels including but not limited to the ones identified on the maps below. Any environmental assessment for future proposed programs in the CFB NS18-3 parcels must consider the current fisheries at the time.

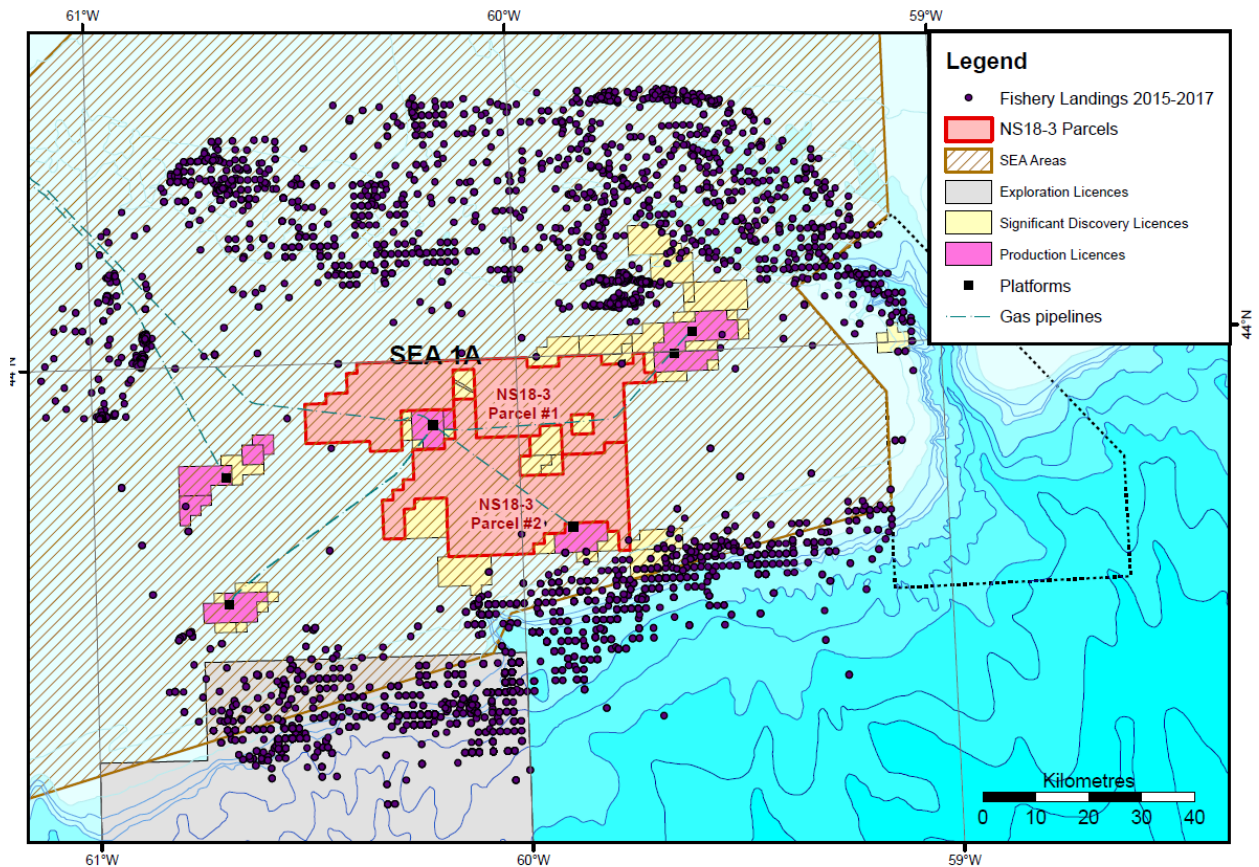


Figure 4. 2015-2017 landings in and around the CFB NS18-3 parcels.

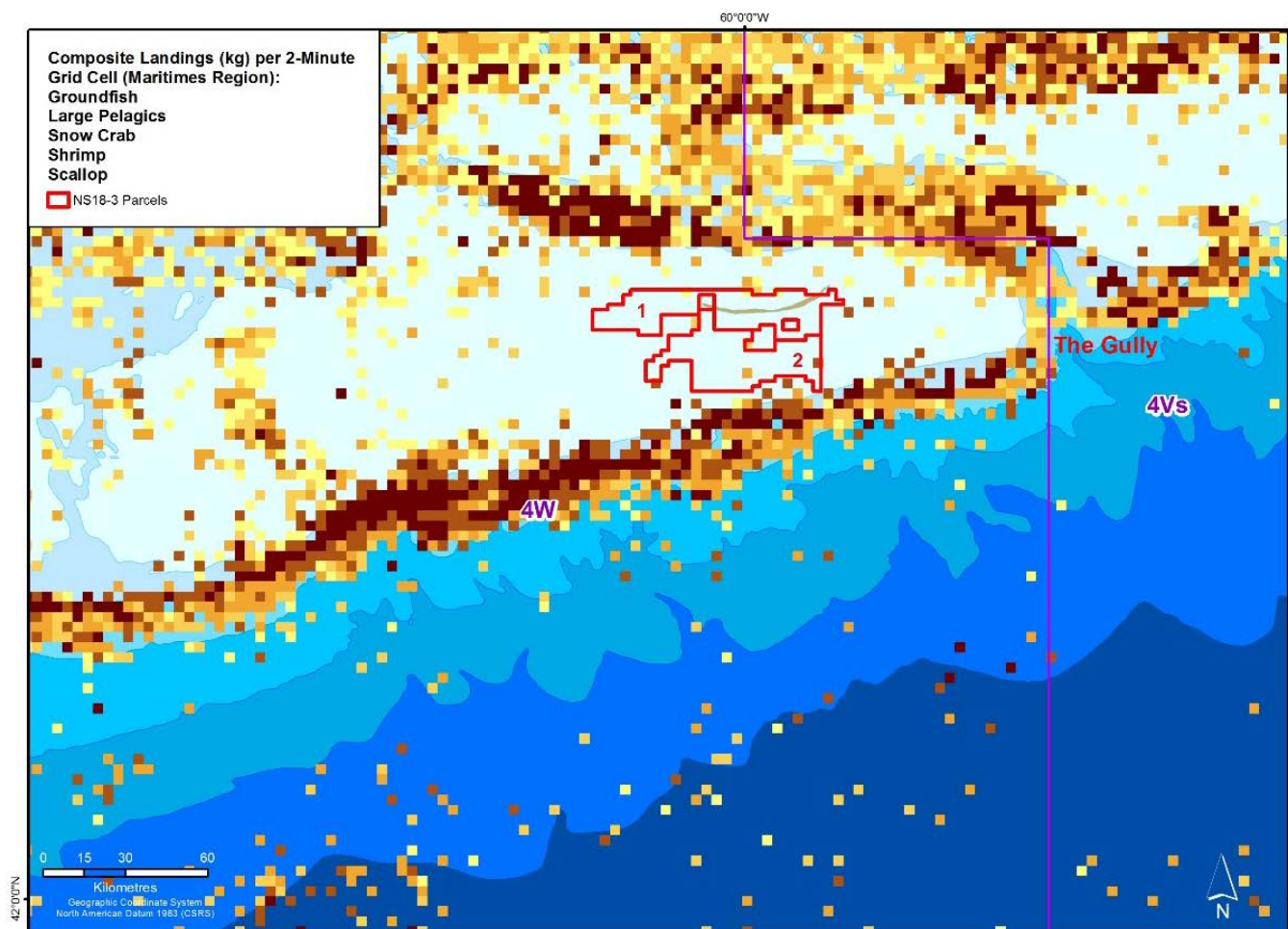


Figure 5: Composite catch weights (kg) per two-minute grid cell for Groundfish, Large Pelagics, Snow Crab, Shrimp and Scallop fisheries. (Data source: 2010-2014 DFO Logbook data.)

3.4 Marine Sound

There is a growing body of knowledge, regionally and internationally, related to the effects of noise on marine mammals. Potential future operators will be encouraged to ensure that any noise effects assessments take into account best available science at the time. For up-to-date resources on the effects of sound on marine wildlife, including marine mammals, turtles, fish, and birds, operators are strongly encouraged to access the online Library Database of the Exploration & Production Sound & Marine Life Joint Industry Programme (JIP). It provides access to project reports, peer-reviewed publications, factsheets, videos and other outputs from JIP-funded, or co-funded, research. The Library is accessible here: <http://www.soundandmarinelife.org/research-categories.aspx>. Operators are also encouraged to review peer-reviewed publications

from DFO's Canadian Science Advisory Secretariat accessible here: <http://www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm>.

3.5 Malfunctions and Accidental Events/Cumulative Effects

As stated in Section 3.1.1, two operators currently exist adjacent to the CFB NS18-3 parcels; ExxonMobil with the Sable Offshore Energy Project (SOEP) and Encana with the Deep Panuke project. Both operators are required to maintain their respective existing "Code of Practice" with respect to Sable Island, and to abide by the *Gully Marine Protected Area Regulations*. Both of these natural gas production projects have existed in the area for many years, without any significant adverse environmental effects.

SOEP

Gas production has ceased from all but two producing gas fields at the SOEP. Production from the remaining two fields was permanently shut in on December 31, 2018. The main facility, Thebaud, will still be used to process gas and export it to shore at Goldboro, NS, while the remaining fields are in production. Well plug and abandonment for the field is ongoing and is expected to be complete by the fall of 2019.

All platforms are being de-inventoried of hydrocarbons and left unmanned, with only navigational aids functional, until removal in 2020. All pipelines are being cleaned and flushed of hydrocarbons until the point that they are environmentally benign. Prior to removal of the platforms, the pipelines will be disconnected and left in place on the seabed, in a manner that is non-hazardous to other users of the sea.

Deep Panuke

Gas production ceased from the Deep Panuke field in May of 2018. The platform is now completely hydrocarbon free, and the gas export pipeline and flowlines to the wells are depressurized but still contain hydrocarbons. The export pipeline and well flowlines will be cleaned and flushed of hydrocarbons until the point that they are environmentally benign in the summer of 2019.

All five wells in the Deep Panuke field will be plugged and abandoned, tentatively starting in the fall of 2019. Tentatively, the platform will be removed from the field in summer of 2020/2021, and the cleaned pipeline and flowlines will be disconnected and left on the seabed in a manner that is non-hazardous to other users of the sea.

With the exception of the SOEP and Deep Panuke, there are no petroleum activities in or around the CFB NS18-3 parcels.

Future Project-specific EAs must address cumulative effects in relation to the current state of activity within and adjacent to the parcels.

4.0 Summary

The Call for Bids NS18-3 parcels (CFB NS18-3) represent the potential area within which exploration rights could be issued by the CNSOPB in the current Call for Bids. Key environmental considerations within the parcels are identified in this report; the information presented it is not intended to replace project-specific EAs that will be required for any future proposed exploration programs. This report focuses on presenting current (2018) environmental information pertinent to special areas, species of special status, fisheries landings, marine sound, and malfunctions and accidental events and cumulative effects, as is relevant for the CFB NS18-3 parcels.

References

DFO 2014. Recovery Strategy for the North Atlantic Right Whale (*Eubalaena glacialis*) in Atlantic Canadian Waters [Final]. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. vii + 68 pp.

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