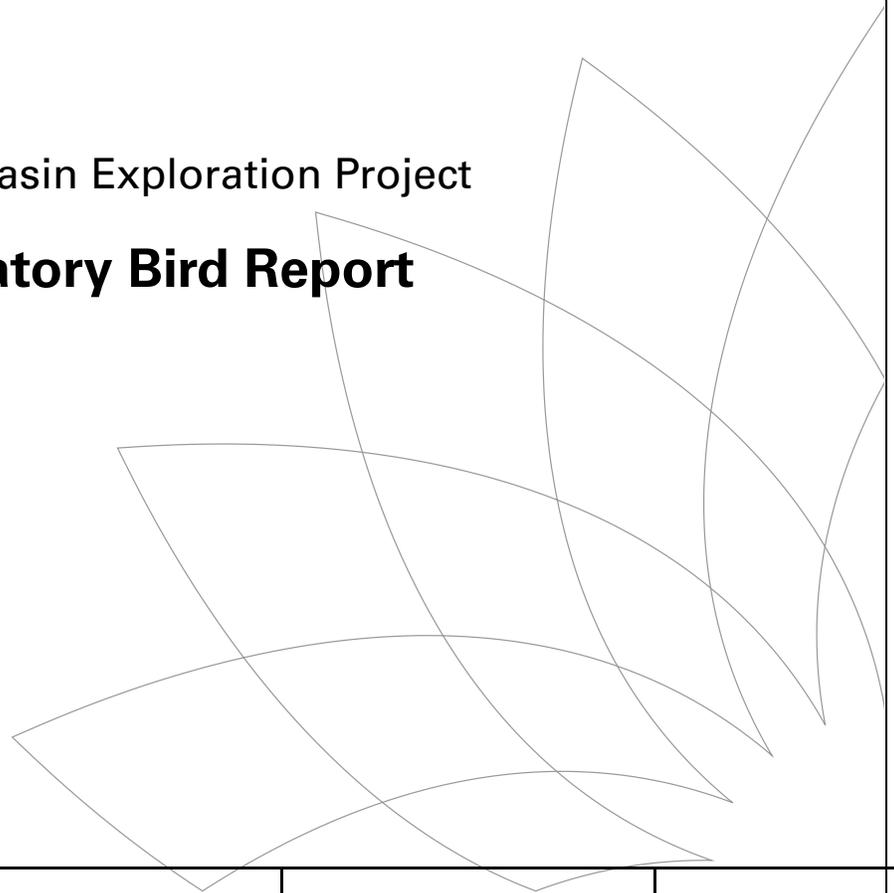


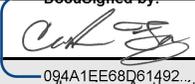
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BP Canada Energy Group ULC



Scotian Basin Exploration Project
Migratory Bird Report



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Acronyms

For purposes of this report, the following acronyms apply:

CEAA	Canadian Environmental Assessment Act
CNSOPB	Canada-Nova Scotia Offshore Petroleum Board
CWS	Canadian Wildlife Service
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Statement
EL	Exploration Licence
MARPOL	<i>International Convention for the Prevention of Pollution from Ships</i>
MODU	Mobile Offshore Drilling Unit
OWTG	<i>Offshore Waste Treatment Guidelines</i> (15 December 2010)
PSV	Platform Supply/Stand-by Vessel
SAR	Species at Risk

Definitions

For purposes of this report, the following definitions apply:

Term	Definition
Aspy	Exploration Well D-11/11A
BP	BP Canada Energy Group ULC
MODU	<i>Seddrill West Aquarius.</i>
Project	Scotian Basin Exploration Project
Seddrill	Seddrill Partners LLC., the Drilling Contractor.

1 Introduction

BP Canada Energy Group ULC (BP) is conducting an exploration drilling program for the Scotian Basin Exploration Project ("Project") located within Exploration Licence (EL) 2434R in the offshore area of Nova Scotia under the jurisdiction of the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB). The Project's first drilling campaign included the Aspy D-11/11A (Aspy) exploration well. The well is located approximately 230 km southeast of Halifax and 48 km from Sable Island National Park Reserve. The Aspy well was spud on April 22, 2018 and drilling activities were completed on December 11, 2018.

As part of the Ministerial Decision Statement and conditions issued under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), BP is required to implement and report on approval conditions outlined in the Decision Statement issued under Section 54 of CEAA 2012. This report is intended to fulfill reporting requirements associated with Conditions 4.1, 4.2, 4.3, 4.4 and 4.5 related to migratory birds.

1.1 Background

The Scotian Basin Exploration Drilling Project Environmental Impact Statement (EIS) (Stantec 2016) assessed the significance of residual environmental effects of the Project on migratory birds and concluded that residual environmental effects during routine Project activities were predicted to be negligible.

A significant adverse residual environmental effect on marine birds (reference EIS Section 7.4.5) was defined as a Project-related environmental effect that:

- causes a decline in abundance or change in distribution of migratory birds within the Regional Assessment Area, such that natural recruitment may not re-establish the population(s) to its original level within one generation;
- jeopardizes the achievement of self-sustaining population objectives or recovery goals for listed species at risk (SAR) species; or
- results in permanent and irreversible loss of critical habitat as defined in a recovery plan or an action strategy for a listed (SAR) species.

The EIS predicted a change in risk of mortality or physical injury to birds related to the presence and operation of the mobile offshore drilling unit (MODU) and offshore supply and servicing. In particular, artificial lighting on the MODU and platform supply vessels (PSVs), and short-duration testing (i.e. flaring) operations by the MODU during emergencies or well testing were the primary mechanisms identified as resulting in predicted changes in risk of mortality or physical injury to birds.

Mitigation measures were proposed to reduce adverse environmental effects including a reduction of lighting to the extent that worker safety was not compromised, and restrictions on flaring to events required to maintain safe operations. No flaring occurred during the Aspy well.

Although no significant adverse residual environmental effects were predicted to occur for migratory birds as a result of routine Project activities, follow-up and monitoring commitments were made to quantify and determine the nature, timing and extent of bird mortality caused by the Project (refer to Section 7.4 of the EIS).

The Decision Statement issued by the Minister of Environment under CEAA 2012 included several requirements related to mitigation for and monitoring of migratory birds as referenced below:

- 4.1 The Proponent shall conduct Designated Project activities in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's *Avoidance Guidelines*. The Proponent's actions when taking into account the *Avoidance Guidelines* shall be in compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act*.

- 4.2 The Proponent shall notify the Board at least 30 days in advance of planned flaring to determine whether the flaring would occur during a period of migratory bird vulnerability and how the Proponent plans to avoid adverse environmental effects on migratory birds.
- 4.3 The Proponent shall implement measures to avoid harming, killing or disturbing migratory birds, including:
- 4.3.1 restricting flaring to the minimum required to characterize the wells' hydrocarbon potential and as necessary for the safety of the operation;
 - 4.3.2 minimizing flaring during night time and during periods of migratory bird vulnerability; and
 - 4.3.3 operating a water-curtain barrier around the flare during flaring.
- 4.4 The Proponent shall require supply helicopters to fly at altitudes greater than 300 metres above sea level, and at lateral distances greater than two kilometres from active migratory birds colonies and Sable Island, except for approach and landing maneuvers and if not feasible for safety reasons.
- 4.5 The Proponent shall develop, prior to the start of the drilling program and in consultation with Indigenous groups, Environment and Climate Change Canada and the Board, follow-up requirements to verify the accuracy of the environmental assessment as it pertains to migratory birds and to determine the effectiveness of the mitigation measures implemented by the Proponent to avoid harm to migratory birds, their eggs and nests, including the mitigation measures used to comply with conditions 4.1 to 4.4. As part of the follow-up, the Proponent shall monitor the drilling unit and platform supply vessels for the presence of stranded birds. The Proponent shall implement these follow-up requirements for the duration of the drilling program.

1.2 Mitigation and Monitoring Objectives

Condition 4.1 requires the consideration of Environment Canada's Avoidance Guidelines (Environment and Climate Change Canada-Canadian Wildlife Service (ECCC-CWS) 2017). In order to avoid or reduce adverse effects on seabird and waterbird colonies, BP implemented protocols for helicopter and PSV traffic.

Emissions and discharges from the MODU and PSVs were in adherence to the Offshore Waste Treatment Guidelines (OWTG) and the International Convention for the Prevention of Pollution from Ships (MARPOL) as applicable, thereby reducing adverse effects from waste discharges on birds at sea. Adherence to these guidelines support compliance with Condition 4.1.

There was no flaring associated with the Aspy well. The implementation of the mitigations identified within Conditions 4.2 and 4.3 are therefore not applicable to the drilling of the Aspy well and are not addressed within this monitoring program.

Helicopters transiting to and from the MODU, flew at altitudes greater than 300 m and at a lateral distance of 2 km from active colonies when possible. Helicopters also avoided flying over Sable Island (recognizing a 2 km buffer). Adherence to these restrictions support compliance with Condition 4.4.

This monitoring program for migratory birds was developed primarily to fulfill Condition 4.5 and verify the accuracy of EIS effects predictions. It consisted of routine checks for stranded birds on the MODU and PSVs to document stranding events, injuries, and mortality of migratory birds. Of particular relevance to the Project are the *Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada* (ECCC-CWS 2017).

2 Methods and Approach

Prior to the commencement of drilling, BP obtained a migratory bird scientific permit issued March 21, 2018 from Environment and Climate Change Canada-Canada Wildlife Service (ECCC-CWS) under the Migratory Birds Regulations Section 4(1) made pursuant to the *Migratory Birds Convention Act, 1994* to authorize the collection of dead migratory birds and the capture, transfer and release of live migratory birds.

BP developed bird awareness training as part of the offshore onboarding training to provide personnel onboard the MODU and PSVs with instructions on how to manage and document the capture, handling, transport, and release of live and dead birds that may be encountered during the Project.

Designated crew members on the MODU and the PSVs received additional training on the bird capture and handling guidelines that were tasked with undertaking systematic (i.e. daily) or opportunistic walk-throughs to search areas of their respective vessels for dead, stranded or injured birds.

Monitoring occurred over the life of Project activities for each vessel as onboarded and offboarded, from April 2018 to December 2018. All birds found injured, stranded or dead on each vessel were documented in accordance with the *Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada* (ECCC-CWS 2017). Photos of dead birds were sent to BP's onshore representative for proper identification if they were unable to identify offshore. Records were compiled regularly from the MODU and each PSV and summary data was reported to CWS.

3 Results

The following section presents the results of the monitoring program that was implemented for the Aspy well in order to fulfill Condition 4.5.

Exploratory drilling of the Aspy well commenced with spud on April 22, 2018 with drilling activities completed on December 11, 2018. The West Aquarius and three PSVs (Horizon Star, Lundstrom Tide and Troms Sirius) were utilized during the project. Monitoring for birds from the West Aquarius occurred between April 13, 2018 when the West Aquarius entered the 500m zone for the Aspy well and concluded on December 13, 2018 when leaving the 500m zone.

A total of 30 birds were found onboard the West Aquarius or PSVs (see Table 1). Of these, 29 individuals were found dead and disposed of at sea and one rested then left the Lundstrom Tide. 27 of the strandings occurred on the West Aquarius, two on the Horizon Star, one on the Lundstrom Tide and none on the Troms Sirius.

A total of seven bird species were identified. However, obtaining a positive species identification on dead birds was not always possible given that some birds were found in poor condition (e.g. state of decomposition). The bird species numbers were as follows:

- (13) Leach's storm petrel (*Oceanodroma leucorhoa*).
- (4) Wilson's storm petrel (*Oceanites oceanicus*).
- (3) Yellow warbler (*Setophaga petechia*).
- (1) Magnolia warbler (*Setophaga magnolia*).
- (1) Ovenbird (*Seiurus aurocapilla*)
- (1) Cory's shearwater (*Calonectris borealis*).
- (3) Sparrows (non-descript)

- (4) Unknown

The majority of bird strandings occurred between May and August.

4 Conclusions

The monitoring and reporting of bird strandings fulfill Conditions 4.1 and 4.5 of the Project Decision Statement. Several mitigation measures and best management practices were implemented in accordance with Environment Canada's Avoidance Procedures and *Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada* (ECCC-CWS 2017) thereby fulfilling Condition 4.1. No flaring occurred in association with the Project; therefore, Conditions 4.2 and 4.3 were not applicable. Condition 4.4 was achieved via maintaining helicopter flight altitudes greater than 300 m and avoidance of Sable Island. As required under Condition 4.5, this report describes the bird monitoring activity carried out throughout the Project and the results.

Bird monitoring on the MODU and PSVs identified 30 stranded birds, of which 29 were found dead (approximately 97%). The most abundant species were Leach's storm-petrels.

Mitigation measures that were implemented to reduce Project effects on migratory birds included the reduction of lighting on the MODU and PSVs to the extent that worker safety was not compromised, routine checks for stranded birds, and maintaining defined distances from bird colonies. Based on monitoring results and the significance criteria established in the EIS, it can be confirmed that there were no significant adverse environmental effects on migratory birds as a result of the Project.

Table 1 – Stranded Birds between April 13 – December 13, 2018

Vessel	Date	Species	Total	Found Dead			Captured Alive			
				DOAS	Oiled	STS	Unoiled		Oiled	
							DIC	Released	DIC	SFR
West Aquarius	Apr-15	Leach's Storm Petrel	2	2						
West Aquarius	May-02	Unknown Sparrow	1	1						
Horizon Star	May-08	Sparrow	1	1						
West Aquarius	May-26	Unknown	1	1						
West Aquarius	May-26	Leach's Storm Petrel	1	1						
West Aquarius	May-26	Wilson's Storm Petrel	1	1						
West Aquarius	May-31	Leach's Storm Petrel	1	1						
Horizon Star	May-31	Sparrow	1	1						
West Aquarius	Jun-02	Magnolia Warbler	1	1						
West Aquarius	Jun-03	Leach's Storm Petrel	2	2						
West Aquarius	Jun-07	Leach's Storm Petrel	2	2						
West Aquarius	Jun-15	Wilson's Storm Petrel	2	2						
Lundstrom Tide	Jun-19	Cory's Shearwater	1					1		
West Aquarius	Jul-23	Unknown	1	1						
West Aquarius	Jul-27	Leach's Storm Petrel	1	1						
West Aquarius	Jul-30	Leach's Storm Petrel	2	2						
West Aquarius	Jul-31	Wilson's Storm Petrel	1	1						
West Aquarius	Aug-01	Yellow Warbler	1	1						
West Aquarius	Aug-03	Leach's Storm Petrel	1	1						

Vessel	Date	Species	Total	Found Dead			Captured Alive			
				DOAS	Oiled	STS	Unoiled		Oiled	
							DIC	Released	DIC	SFR
West Aquarius	Aug-06	Leach's Storm Petrel	1	1						
West Aquarius	Aug-06	Yellow Warbler	1	1						
West Aquarius	Sep-20	Ovenbird	1	1						
West Aquarius	Oct-24	Unknown	2	2						
West Aquarius	Oct-31	Yellow Warbler	1	1						

NOTES:

DOAS – Disposed of at sea

STS – Sent to shore

DIC – Died in care

SFR – Sent for Rehabilitation

5 References

- CEAA. 2012. Canadian Environmental Assessment Act, 2012. Available at <http://laws-lois.justice.gc.ca/eng/acts/c-15.21/index.html>.
- ECCC-CWS [Environment and Climate Change Canada-Canadian Wildlife Service]. 2017. Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada. 17 pp.
- ECCC-CWS [Environment and Climate Change Canada-Canadian Wildlife Service]. 2017. Avoidance Guidelines. Available at : <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/guidelines.html>
- Stantec (Stantec Consulting Ltd). 2016. Scotian Basin Exploration Drilling Project – Environmental Impact Statement. Prepared for BP Canada Energy Group ULC. Available at <https://www.ceaa-acee.gc.ca/050/evaluations/document/116118?culture=en-CA>.