

ANNEX 1: Advice to the Agency

Table 1: Please use the table below to provide advice for the Agency’s consideration in its recommendation to the Minister of Environment and Climate Change and preparation of draft conditions

Questions	Responses/Comments
<ul style="list-style-type: none"> • Has the proponent described all project components and activities in sufficient detail to understand all relevant project-environment interactions? If not, identify what additional information is needed. 	
<ul style="list-style-type: none"> • Were the study areas sufficient to predict potential effects from all relevant project-environment interactions, and to consider the effects within a local and regional context? • Is the baseline information sufficient to characterize the existing environment, predict potential effects and obtain monitoring objectives? If not, identify what additional information is needed. 	
Alternatives Assessment	
<ul style="list-style-type: none"> • Has the proponent adequately described the criteria it used to determine the technically and economically feasible alternative means? • Has the proponent listed the potential effects to valued components (VCs) within your mandate that could be affected by the technically and economically feasible alternative means? • Has the proponent adequately described why it chose each preferred alternative means? • Are there other alternative means that could have been presented? If so, please describe. 	
Environmental Effects Assessment	
<ul style="list-style-type: none"> • Has the proponent clearly described all relevant pathways of effects to be taken into account under section 5 of CEAA 2012? • Has the proponent identified all potential effects to VCs, including species at risk, within your mandate? • Were all potential receptors considered? 	
<ul style="list-style-type: none"> • Were the methodologies used by the proponent appropriate to collect baseline data and predict effects, why or why not? • Has the proponent explicitly addressed the degree of scientific uncertainty related to the data and methods used within the assessment? If there are unaccounted for scientific uncertainties, describe them and indicate the options for increasing certainty in the predictions? 	

Questions	Responses/Comments
<ul style="list-style-type: none"> • Are the predicted effects described in objective and reasonable terms (e.g. beneficial or adverse, temporary or permanent, reversible or irreversible)? 	
<ul style="list-style-type: none"> • Has the proponent adequately assessed the potential cumulative environmental effects, including using appropriate temporal and spatial boundaries , examining physical activities that have been and will be carried out, and proposing mitigation and follow-up program requirements? Provide rationale. 	
<ul style="list-style-type: none"> • Has the proponent adequately described the potential for environmental effects caused by accidents and malfunctions, including the types of accidents and malfunctions, their likelihood and severity and the associated potential environmental effects? If not, identify what additional information is needed. 	
<ul style="list-style-type: none"> • Are you satisfied with the proponent’s assessment of effects of the environment on the Project? • Has the proponent characterized the likelihood and severity appropriately? Provide rationale. 	
<ul style="list-style-type: none"> • Has the proponent sufficiently described and characterized the project activities and components as they relate to federal decisions within your mandate? If not, identify what additional information is needed. • Are changes to the environment, as they relate to federal decisions within your mandate, sufficiently described? If not, identify what additional information is needed. 	
Mitigation	
<ul style="list-style-type: none"> • Has the degree of uncertainty regarding the effectiveness of the proposed mitigation measures been described? If not, identify what information is needed. • Is it clear how each proposed mitigation measure links to each potential pathway of effect? 	
<ul style="list-style-type: none"> • Would you propose different or additional mitigation measures? If so, provide a description of the mitigation measure(s), with rationale. 	
<ul style="list-style-type: none"> • Which of the proposed mitigation measures and/or project design elements do you consider to be necessary to reduce the likelihood of significant adverse environmental effects? Provide rationale. 	
Residual Adverse Environmental Effects	
<ul style="list-style-type: none"> • Are the identification and documentation of residual environmental effects described by the proponent adequate? If not, what are the aspects for which there is uncertainty and, where 	

Questions	Responses/Comments
possible, indicate how these residual effects can be best described. If there is uncertainty, what are the options for increasing certainty?	
<ul style="list-style-type: none"> Did the proponent provide a sufficiently precise, ideally quantitative, description of the residual environmental effects related to your mandate? Identify any areas that are insufficient. 	
Determination of Significance	
<ul style="list-style-type: none"> Are the conclusions on significance in the EIS supported by the analysis that is provided? Are the proponent's proposed criteria for assessing significance appropriate? This includes how the criteria were characterized, ranked, and weighted. Provide rationale. Where the proponent has not used one of the Agency's recommended key criteria (magnitude, geographic extent, duration, frequency, reversibility, and social/ecological context), has a rationale been provided? 	
<ul style="list-style-type: none"> Were appropriate methodologies used in developing the conclusions on significance? 	
<ul style="list-style-type: none"> Do you agree with the proponent's analysis and conclusions on significance? Provide rationale. 	
Monitoring and Follow-up	
<ul style="list-style-type: none"> Does the proposed monitoring and follow-up program verify the predictions of the environmental assessment as they relate to section 5? Please explain additional monitoring or follow-up needed to address uncertainty in the effects assessment. 	
<ul style="list-style-type: none"> Does the proposed monitoring and follow-up program verify the effectiveness of proposed mitigations as they relate to section 5? Please explain additional monitoring or follow-up needed to address uncertainty in the proposed mitigation. 	
<ul style="list-style-type: none"> Is the objective of the follow-up program clear and measurable? Does the follow-up program include sufficient detail, and technical merit, for the Agency to achieve the stated objective through a condition (e.g. sufficient baseline dataset, monitoring plans, acceptable thresholds of change, contingency procedures)? 	
<ul style="list-style-type: none"> Are you aware of any federal or provincial authorizations or regulations that will achieve the same follow-up program objective(s)? If so, how do these achieve the objective(s)? 	
Additional comments, views, advice	
<ul style="list-style-type: none"> Provide any other comments. 	

ANNEX 2: Information requirements directed to the proponent

Table 2: Please use the table below to provide your department’s comments and suggestions for information that should be required from the proponent to ensure the information in the EIS is scientifically and technically accurate and is sufficient to make a determination of significance on environmental effects.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
ECCC- 01	5(1)(a)(iii) Migratory Birds	2.2 - Alternative Means of Carrying out the Project	2.10.2.5 - Offshore Vessel Lighting (including Flaring)	<p>Quote (page 45) <i>“The MODU used for the Project will be an existing drilling unit contracted through a third-party drilling contractor and selected based on technical capabilities as well as safety considerations. Suncor is not aware of any operating MODUs currently equipped with spectral modified lighting that have the technical capability to support the Project”.</i></p> <p>The proponent has included “standard MODU lighting” and “spectral modified lighting” in the alternatives analysis, and indicated that “spectral</p>	<p>ECCC requests that the proponent undertake a more thorough and complete analysis of alternative means of lighting and flaring, with consideration of the draft recommendations made in the <i>Regional Assessment of Offshore Exploratory Drilling East of Newfoundland and Labrador</i> draft report.</p>

				<p>modified lighting” is not feasible.</p> <p>ECCC disagrees that the proponent has conducted a sufficient analysis of alternative means for lighting.</p> <p>ECCC also notes that the <i>Regulation Respecting Excluded Physical Activities (Newfoundland and Labrador Offshore Exploratory Wells)</i> s.21 includes measures that proponents should implement to avoid harming, killing or disturbing migratory birds including:</p> <p>e) controlling lighting required during the carrying out of the activity, including its direction, timing, intensity and glare;</p> <p>h) documenting any changes made to lighting regimes to allow for an evaluation of the effectiveness of the change in mitigating light attraction;</p>	
--	--	--	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

				<p>i) a research program to identify changes in light spectrum, type or intensity that may further reduce attraction for storm petrels and other migratory seabirds;</p> <p>l) incorporating any technology that becomes available into migratory seabird monitoring to complement research on the mitigation of light attraction.</p>	
ECCC-02	5(1)(a)(iii) Migratory Birds	2.2 - Alternative Means of Carrying out the Project	2.4.3 - Well Evaluation and Testing 2.10.2.6 - Flaring and Alternative Testing Methods	<p>Quote (2-13) <i>“Seawater is sprayed through a series of high-pressure nozzles during a DST to dissipate heat between the flare and the MODU. This seawater curtain is likely to deter birds near the flare”</i></p> <p>Quote (page 2-43) <i>“Flaring, if required, is expected to be brief and intermittent in nature (lasting up to 36 hours at a time) and could occur several times in the well flow test period, which in total is expected to last one month. If Suncor intends to flare, it will notify the CNLOPB in</i></p>	<p>ECCC requests that the following key mitigation measures be included for consideration in the EIS and that all corresponding sections and tables be updated accordingly:</p> <ul style="list-style-type: none"> • When flaring occurs, a trained seabird observer will monitor and document bird behaviour around the flare to assess the effectiveness of flare shields

				<p><i>accordance with “Measures to Protect and Monitor Seabirds in Petroleum-related Activity in the Canada-Newfoundland and Labrador Offshore Area” (CNLOPB, n.d.). Suncor will use a water curtain to protect personnel and equipment on the MODU by limiting the transfer of radiated heat from the flare, thereby mitigating the risk of fire. A secondary benefit of a water curtain may be potential deterrence of birds in the general vicinity of the flare based on the positioning of the water curtain. A water curtain could be considered a technically and economically feasible option as a flare shield to reduce adverse effects of flaring on birds.”</i></p> <p>Uncertainty remains regarding the effectiveness of water curtains in deterring birds near the flare. Additionally, the <i>Regulation Respecting Excluded Physical Activities (Newfoundland and Labrador Offshore</i></p>	<p>and water curtains in mitigating flare-bird interactions, as applicable.</p> <p>ECCC requests that systematic stranded bird surveys be conducted before and after flaring activities to assess the impacts of flaring on migratory birds.</p>
--	--	--	--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

				<p><i>Exploratory Wells</i>) s.21 includes measures that proponents should implement to avoid harming, killing or disturbing migratory birds including:</p> <p>k. having a [trained seabird observer] monitor and document migratory bird behaviour around the flare while flaring occurs and assess the effectiveness of water curtains and flare shields in mitigating interactions between migratory birds and flares.</p> <p>Daily systematic stranded bird surveys should be conducted on decks before and after flaring activities to assess the impacts of flaring on migratory birds.</p>	
ECCC-03	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitats	6.2.2 - Seabirds Tables 6.8 and 6.9	<p>General Comment on Section 6.2</p> <p>The current colony size estimates are out of date and can be updated, but will not change the overall content of the EIS. More recent information on colony size estimates is available from ECCC upon request.</p>	ECCC advises the proponent that updated colony size estimates are available upon request.

ECCC-04	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitats	6.2.2 - Seabirds Table 6.9	<p>Table 6.9 lists 15 major marine bird colonies, but ECCC notes that this list is not comprehensive and misses a number of colonies that are important for migratory birds, such as Little Fogo Islands. Additionally, there are colonies that are included that ECCC does not consider to be “major” as a part of this analysis, such as Northern Groais Island. ECCC recommends that the proponent include a definition for what is to be considered a “major” colony and rationale as to why these 15 colonies were chosen. The proponent should contact ECCC-CWS to discuss which bird colonies should be considered “major” and “important” colonies for marine birds in the RAA. The table should be revised to include Little Fogo Islands, at minimum. Additionally,</p>	<p>ECCC requests that the proponent revise Table 6.9 to include Little Fogo Islands and update to “Green Islands (Fortune Bay)”, given that there are many “Green Islands”. ECCC requests that the proponent include a definition or rationale as to why these 15 colonies were chosen as the “major” marine bird colonies in the RAA. ECCC requests that the proponent contact ECCC-CWS to discuss which colonies should be included in this Table, and to obtain the information and data needed to complete the revisions.</p>
---------	------------------------------	--------------------------------------------	-------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

				the proponent should contact ECCC-CWS to obtain any missing information and/or data that is needed to revise the table.	
ECCC-05	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitat	6.2.2.7 - Storm-Petrels	<p>Quote (page 6-87) <i>“The nesting distribution of the Leach’s Storm-petrel on the Atlantic Ocean includes Atlantic Canada (Nova Scotia, New Brunswick and Newfoundland), Iceland, Scotland and Norway”</i></p> <p>The Atlantic distribution of Leach’s Storm-petrels is much broader than is described in the statement above, including other parts of Canada (i.e., Quebec, Labrador), the United States of America (i.e., Maine), France (i.e., Saint Pierre et Miquelon), and many other European countries (beyond Norway).</p> <p>ECCC recommends that the proponent consult Pollet et al. 2019 to obtain more accurate</p>	ECCC requests that the proponent revise the statement, provided in the previous column, to reflect the full distribution of nesting Leach’s Storm-petrel in the Atlantic Basin, with specific reference to Pollet et al. 2019.

				<p>information on the full distribution of nesting Leach’s Storm-petrel across the Atlantic Basin. Pollet, I.L., Bond, A.L., Hedd, A., Huntington, C.E., Butler, R.G., and Mauck, R. (2019). Leach’s Storm-Petrel (<i>Oceanodroma leucorhoa</i>), version 2.0. In The Birds of North American (P.G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.</p> <p>https://doi.org/10.2173/na.ilcspet.02</p>	
ECCC-06	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitat	6.2.2.7 - Storm-petrels	<p>Quote (page 6-90) <i>“It is likely that millions of storm-petrels use the RAA during the April-October period. Tracking studies show an increased presence of Leach’s storm-petrels in the Project Area as they begin their migration across the Atlantic in a southeast direction to their wintering grounds (Pollet et al. 2014b)…The species was not recorded on the</i></p>	<p>ECCC requests that the proponent provide an additional statement to reflect the likely increased presence of Leach’s Storm-petrel in the Project Area in September and October, with reference to Pollet et al. 2014</p>

				<p><i>ECSAS surveys in the Project Area during the December-March period</i></p> <p>Leach’s Storm-petrel strandings peak on offshore installations in September and October, the timing of which coincides with the fledging period of this species.</p>	
ECCC-07	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitat	6.2.2.9 - Cormorants Table 6.9	<p>Quote (page 6-92) <i>“Great and double crested cormorants both breed in Coastal Newfoundland (see Table 6.9)”</i></p> <p>ECCC notes that Table 6.9 does not include reference to either cormorant species. The proponent should revise the statement to include references <u>or</u> should revise Table 6.9 to include Great and Double-crested Cormorants to maintain consistency</p>	ECCC requests that the proponent revise the statement, provided in the previous column, to include reference, or revise Table 6.9 to include both cormorant species maintain consistency.
ECCC-08	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitat	6.2.3.3 - Landbirds	<p>Quote (page 6-97) <i>“Nocturnally migrating species are often attracted to artificial lighting on vessels, especially when fog or</i></p>	ECCC requests that the proponent update their analysis to include an effects assessment on landbirds which may

				<p><i>rain sets in after the night's nocturnal migration has begun (Gauthreaux and Belser 2006)."</i></p> <p>As per Gjerdrum et al. 2021, in addition to nocturnal seabirds, many landbird species have been reported stranded at coastal and offshore sites in Atlantic Canada during stranded bird surveys.</p> <p>The proponent should update their analysis to include landbird species that may have overlapping ranges with the Project Area to improve the effects assessment of potential impacts on landbirds.</p> <p>Gjerdrum, C., R.A. Ronconi, K.L Turner, and T.E. Hamer. Bird strandings and bright lights at coastal and offshore industrial sites in Atlantic Canada. <i>Avian Conservation & Ecology</i>.</p>	<p>be encountered during project activities.</p>
--	--	--	--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------

				<p>16(1): 22. https://doi.org/10.5751/A-CE-01860-160122</p> <p>*This IR is related to new research that was published in 2021.</p>	
ECCC-09	5(1)(a)(iii) Migratory Birds	7.1.5 - Species at Risk	6.2.4 - Species at Risk	<p>Quote (page 6-97) <i>“An additional eight species, while not designated provincially or federally, occur on ICUN’s Red List of Threatened Species.”</i> ECCC notes that Table 6.12 does not include reference to Atlantic Puffin, which are designated Vulnerable by the IUCN due to declines in the number of birds nesting at European colonies. The proponent should revise Table 6.12 accordingly. Sections 10 and 15 should also be updated according to this correction, as required. It is also not clear what eight species are being referred to in the statement above; there are more than eight species in Table 6.12.</p>	<p>ECCC requests that the proponent revise Table 6.12 to include Atlantic Puffin, which is IUCN Red-listed as Vulnerable. ECCC requests that the proponent subsequently apply the above-mentioned update to Sections 10 and 15, as required.</p>

ECCC-10	5(1)(a)(iii) Migratory Birds	7.1.9.1 - Special Areas	6.2.5 - Summary of Key Areas and Times Table 6.13	<p>A number of issues have been identified in Table 6.13:</p> <p>a. <i>“Funk Islands – ...provincially protected SER^E”</i> (page 6-104) The superscript for “provincially protected SER” should be “P”, as per the Notes section of Table 6.13.</p> <p>b. Cape St. Mary’s (NF001) and Placentia Bay (NF028) are also designated as Provincial Seabird Ecological Reserves (SER) and should be identified as such in Table 6.13 (i.e. denoted with superscript “P”, per the Notes section of Table 6.13).</p> <p>c. Middle Lawn Island <i>“Manx shearwater summering^C; Leach’s storm-petrel nesting^G.”</i> (page 6-105) Manx shearwater winter on Middle Lawn Island, the wording should be changed to “Manx shearwater wintering^C”.</p>	ECCC requests that the proponent revise the statements in Table 6.13, as per the noted corrections.
---------	------------------------------	-------------------------	------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------

ECCC-11	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitat	<p>A) 10.3.1.2 - Mitigation</p> <p>B) 10.3.4 - Summary of Project Residual Environmental Effects</p>	<p>A) Quote (page 10-9, bullet 2) <i>“Seabirds found will be recovered, rehabilitated, released and documented in accordance with methods in Procedures for Handling and Documenting Stranded Birds Encountered on Infrastructure Offshore Atlantic Canada (ECCC 2017b).”</i></p> <p>B) Quote (page 10-32) <i>“This will be mitigated through the development and implementation of protocols and training for systematic, daily searches, and for the recovery, rehabilitation, and release of birds adhering to protocols...”</i></p> <p>The proponent cannot undertake rehabilitation of seabirds that are found stranded on platforms or vessels. Rehabilitation can only be undertaken</p>	ECCC requests that the proponent remove the reference to “rehabilitation”.
---------	------------------------------	-------------------------------------------	------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------

				by facilities that are authorized to undertake such activities.	
ECCC-12	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitat	10.3.1.2 - Mitigation	<p>Quote (page 10-9, bullet 6) <i>“The regional CWS office will be contacted for separation distances and altitudes between helicopters transiting to and from the MODU and migratory bird nesting colonies, as per CWS guidelines (Government of Canada 2018) and routes will comply with provincial Seabird Ecological Reserve Regulations, 2015. Specific dates will be provided in the EPP.”</i></p> <p>ECCC provides the following guidance document for the proponent’s consideration “Seabird and waterbird colonies: avoiding disturbance” (URL: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/seabird-waterbird-colonies-disturbance.html).</p> <p>Helicopters should maintain a minimum distance of at least 300</p>	ECCC requests that the proponent include the 300 metre separation distance from seabird colonies for helicopters into the mitigation measures.

				<p>metres vertically and horizontally from all areas of an island or colony occupied by seabirds and waterbirds.</p> <p>Additionally, notes that the <i>Regulation Respecting Excluded Physical Activities (Newfoundland and Labrador Offshore Exploratory Wells)</i> s.21 includes measures that proponents should implement to avoid harming, killing or disturbing migratory birds including:</p> <p>g. measures that require support helicopters to fly at altitudes greater than 300 metres above sea level where there are active migratory bird colonies and at a lateral distance of 1000 metres from Cape St. Francis and Witless Bay Islands Important Bird and Biodiversity Areas.</p>	
ECCC-13	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitat	<p>A) 10.3.1.3.1 - Presence and Operation of the MODU</p> <p>B) 10.3.1.3.4 - Well Testing and Flaring</p>	<p>A) Quote (page 10-14) <i>“Data on the distance at which birds can be affected by light from a MODU are limited.”</i></p>	ECCC requests that the proponent reassess their conclusion provided in

			<p>C) 10.3.2.3.1 - Presence and Operation of a MODU</p>	<p><i>The zone of influence varies with factors such as weather, intensity and position (height) of the light source, and ambient light conditions (Montevocchi 2006). Bruinzeel and van Belle (2010) found that the distance at which birds become disoriented ranges from 200 m in dense fog to 1,000 to 1,400 m in lighter fog to light rain, to up to 4.5 km in overcast skies with no celestial cues and otherwise good visibility. Poot et al. (2008) showed that 30 kW of electric lighting affects migrating landbirds out to at least 5 km, but greater distances cannot be ruled out (Poot et al. 2008; Hedd et al. 2011; Ronconi et al. 2015). Large numbers of fledgling short-tailed shearwaters were attracted to intense, temporary artificial lighting separated by 15 km of sea from</i></p>	<p>the EIS that “the magnitude of the effect of the presence and operation of a drilling installation on marine and migratory birds is anticipated to be low, given potential impacts/effects on Leach’s Storm-petrel and the uncertainty that remains related to the effect and zone of influence of artificial lighting on marine and migratory birds.</p>
--	--	--	---------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

				<p><i>the nearest nesting colony (Rodriguez et al. 2014)."</i></p> <p>A) Quote (page 10-15) <i>"Based on the information and analysis summarized here, and with the implementation of appropriate mitigation measures as summarized in 10.3.1.2, the overall magnitude of the effects of the presence and operation of the MODU on marine and migratory birds is anticipated to be low. There may be a slight increase in mortality/injury levels due to collisions, disorientation and potential predation, although, based on previous monitoring, the mortality rate is anticipated to be low as most stranded birds encountered on platforms and vessels are found alive and released successfully."</i></p>	
--	--	--	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

				<p>B) Quote (page 10-19) <i>"If required, flaring activities would be short in duration (approximately 36 hours per test, if flaring occurs at all), and associated bird attraction will be limited to within 15 km of the MODU."</i></p> <p>C) Quote (page 10-22) <i>"Given that the likely zone of influence of the Project (conservatively set at 16 km diameter based on Section 10.1.4.1) at one time of location will represent a small proportion of the feeding, breeding and migration areas of a species, birds will not be displaced from key habitats or during important activities of otherwise be affected in a manner that causes detectable adverse effects to overall populations in the region."</i></p> <p>ECCC disagrees with the proponent's conclusion</p>	
--	--	--	--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

				<p>that the overall magnitude of the effect of the presence and operation of a drilling installation on marine and migratory birds is anticipated to be low. In the absence of systematic searches and documentation of stranded birds (live and dead) to quantify the level of attraction and effect of strandings, and a discussion of mitigation measures to reduce the amount of artificial lighting, the proponent cannot state with certainty that the effect of the presence of the MODU will be low in magnitude. Considerable uncertainty remains as to the actual zone of influence of light on migratory birds. There have been no studies undertaken on the maximum light detection distance of the eyes of migratory birds. Furthermore, no studies have been undertaken that describe how far</p>	
--	--	--	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

				<p>away from a light source a migratory bird must be before light affects its behaviour. This uncertainty should be reflected in the proponent's level of confidence in their conclusions.</p> <p>Leach's Storm-petrels breeding on Baccalieu Island, the largest colony in the world and hosting 4 million breeding individuals, travel across and forage in the proposed Project area (deep waters, specifically) during the breeding season, and are known to be attracted to sources of artificial lighting.</p> <p>Therefore, effects on breeding birds, specifically Leach's Storm-petrel, could be high.</p> <p>ECCC recommends that the EIS be revised, considering the uncertainties that remain regarding the level of light attraction, the zone of influence of artificial</p>	
--	--	--	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

				light on migratory birds, and the potential effects on Leach’s Storm-petrel populations.	
ECCC-14	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitats	<p>A) 10.3.1.3.6 - Supply and Servicing</p> <p>B) 15.4.3 - Future Projects and Activities and their Effects</p> <p>Table 15.8 - Marine and Migratory Birds: Residual Effects from Other Projects and Activities in the RAA</p>	<p>A) Quote (page 10-20) <i>“Supply vessel traffic for the MODU represents a negligible contribute to the overall vessel traffic off Eastern Newfoundland, and Project-related supply vessel traffic will use existing and established routes where possible.”</i></p> <p>B) Quote (page 15-28, Table 15.8 “Other Ocean Users”) <i>“The transitory nature of vessel traffic reduces potential residual effects on marine and migratory birds in any particular location and at any particular time.”</i></p> <p>Given the increased amount of artificial lighting and increased possibility of accidental events from each supply vessel that is associated with the Project, ECCC does not agree with the</p>	ECCC requests that the proponent revise the EIS to include an analysis and discussion of how support vessels in the Project Area will contribute to the attraction of migratory birds.

				<p>proponent’s conclusion that the Project’s vessel traffic will make a “negligible” contribution to overall vessel activity in the region.</p> <p>Many migratory birds, such as Leach’s Storm-petrel, have foraging ranges that overlap with the Project Area.</p> <p>Research has shown that birds are attracted to sources of artificial lighting (e.g, Weise et al. 2001; Montevecchi 2006; Ellis et al. 2013), and bird strandings have been documented and reported on offshore oil platforms, supply vessels, and even at inland developments/infrastructure. Regardless of the transient nature of the supply vessels, marine and migratory birds are still likely to be attracted to these vessels.</p> <p>The exact level of attraction that will result from each new platform, vessel, etc. added to the</p>	
--	--	--	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

				<p>offshore environment cannot be quantified unless there are systematic searches for stranded birds on supply vessels that also document the search effort (including days when no birds are discovered).</p> <p>Wiese, F.K., Montevecchi, W.A., Davoren, G.K., Huettmeann, F., Diamond, A.W., Linke, J. (2011). Seabirds at risk around offshore oil platforms in the Northwest Atlantic. <i>Mar. Poll. Bull.</i> 42: 1285-1290.</p> <p>Montevecchi, W.A. (2006). Influences of artificial light on marine birds. In Rick C, Longcore T (eds) Ecological consequences of artificial night lighting, pages 93-113. Island Press, Washington, D.C.</p> <p>Ellis, J.I., Wilhelm, S.I., Hedd, A., Fraser, G.S., Robertson, G.J., Rail, J-F., Fowler, M., Morgan, K.H. (2013). Mortality of</p>	
--	--	--	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

				Migratory Birds from Marine Commercial Fisheries and Offshore Oil and Gas Production in Canada. <i>Avian Conservation and Ecology</i> . 8(2):4.	
ECCC-15	5(1)(a)(iii) Migratory Birds	7.1.4 - Migratory birds and their habitats	10.6 - Follow-Up and Monitoring	ECCC notes that as per the <i>Regulations Respecting Excluded Physical Activities (Newfoundland and Labrador Offshore Exploratory Drilling Wells)</i> Condition 7a, daily monitoring for the presence of migratory seabirds from the drilling installation and support vessels following Environment Canada's <i>Eastern Canada Seabirds at Sea Standardized Protocol for Pelagic Seabird Surveys from Moving and Stationary Platforms</i> is required. The proponent has not included daily ECSAS monitoring as part of their Follow-Up and Monitoring program. The proponent has not included any follow-up monitoring activities related to light reduction, nor reducing impacts	ECCC requests that the proponent include ECSAS daily monitoring for the presence of migratory birds to the Follow-Up and Monitoring Program and update mitigation measures throughout the EIs accordingly. ECCC requests that the proponent include monitoring on light reduction and reducing flaring impacts in the monitoring program, as noted in planned mitigations.

				during flaring events, which were both identified as mitigation measures in Section 10.3.1.1	
ECCC-16	5(1)(a)(iii) Migratory Birds	7.6.1 - Effects of accidental events	16.4.1 - Oil Spill Response Plan	Quote (page 16-40) <i>“Suncor has an existing OSRP which will be used to develop a Project-specific OSRP for the exploration drilling program”</i> ECCC notes that Suncor has developed a Wildlife Response Plan for the Terra Nova FPSO (development project), which was reviewed by ECCC in November 2020. The Wildlife Response Plan should be adopted or modified for the current Project to ensure sufficient wildlife response.	ECCC requests that the proponent consider the information from their existing Terra Nova FPSO Wildlife Response Plan for the development of the Wildlife Response Plan for this project.
ECCC-17	5(1)(a)(iii) Migratory Birds	7.6.1 - Effects of accidental effects	16.5.2.1.2 - Potential Effects of Dispersants on Marine and Migratory Birds	Quote (page 16-70) <i>“A study of the effect of dispersant use on feather structure, waterproofing, and buoyancy of common murrelets show no significant difference between the effects of oil alone and the effects of a mixture of dispersant and oil (Whitmer et al. 2018). In both cases, the effect was dose-dependent and</i>	ECCC requests that the proponent revise the statement, provided in the previous column, to correctly interpret and report the results of Whitmer et al. 2018.

				<p><i>resolved over two days. A high concentration of dispersant alone caused an immediate, life-threatening loss of waterproofing and buoyancy, which resolved within two days"</i></p> <p>The proponent has incorrectly interpreted and reported the results of Whitmer et al. 2018. While it is correct that the effect of oil alone and the mixture of dispersant and oil were not significantly different, the study clearly states that the effects <u>did not</u> resolve over time. Whitmer et al. 2018 notes "<i>Birds exposed to oil, or dispersant and oil mixture, experienced dose-dependent waterproofing impairment without resolution over two days"</i> and "<i>the impacts of oil and dispersed oil did not improve over time"</i>. It is difficult to compare the results of the Whitmer et al. 2018 study (conducted</p>	
--	--	--	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

				<p>in a laboratory) to what may occur in the offshore areas of NL. Specifically, in Whitmer et al. 2018, post-exposure birds were kept out of the water and in ambient temperatures of 15.5°C-18.3°C, whereas any birds exposed to dispersants in the Project Area would be confined to water in much colder temperatures.</p>	
ECCC-18	5(1)(a)(iii) Migratory Birds	7.6.1 - Effects of accidental events	16.5.2.1.2 - Potential Effects of Dispersants on Marine and Migratory Birds	<p>The proponent’s synthesis of the effects of dispersants on marine and migratory birds provides conflating information and does not provide sufficient evidence to support the conclusion that “dispersant mitigates the potential adverse effects of oil on birds compared to untreated oil”. While applying dispersants may be beneficial for migratory birds in some situations, they may prove to be more harmful</p>	<p>ECCC requests that the proponent undertake a more thorough and complete analysis of the effects of dispersants on marine and migratory birds, and revise the conclusions accordingly.</p>

				<p>in others; therefore the use of dispersants must be done with careful consideration on a case by case basis. It is also not known what the impacts of dispersants alone may have on birds, and in particular on their plumage; dispersants are a surfactant and therefore may compromise the waterproofing of feathers, in a similar manner to that of oil.</p>	
--	--	--	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

ANNEX 3: Advice to the proponent

Table 3: Additional advice to the proponent, such as guidance or standard advice related to your departmental mandate

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
ECCC-19	7.1.4 - Migratory birds and their habitats	<p>As per the <i>Regulations Respecting Excluded Physical Activities (Newfoundland and Labrador Offshore Exploratory Drilling Wells)</i> Condition 7b, monitoring is required from the drilling installation and support vessels throughout the day for the presence of stranded migratory birds.</p> <p>Systematic deck searches for stranded birds undertaken by trained observers are more effective as mitigation than opportunistic searches. These systematic searches should occur at least daily (preferably at dawn), with search efforts documented and observations recorded (including notes of efforts when no birds are found). ECCC has expertise in this area and is available to be consulted in the development of systematic monitoring protocols.</p>	<p>ECCC-CWS has developed new guidance to assist operators with the development of site-specific protocols for systematic stranded bird surveys. <i>ECCC-CWS Guidance for Developing Systematic Stranded Bird Survey Protocols for Vessels and Platforms</i> has been attached for the proponent's consideration.</p> <ul style="list-style-type: none"> a) ECCC-CWS Guidance for developing systematic stranded bird survey protocols for vessels and platforms b) Appendix 1 – Stranded Bird Encounter Datasheet (fillable PDF – superseded by Excel datasheet) c) Appendix 2 – Infographic and Reference Card – <i>What to do when you find a stranded bird?</i> d) Appendix 3 – Seabird Identification Photo Card e) <i>Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada</i> f) NEW – Microsoft Excel fillable datasheet for stranded bird data (required)
ECCC-20	General Comment	ECCC has developed a pelagic seabird monitoring protocol called the Eastern Canada Seabirds at Sea (ECSAS) program,	ECCC advises that the proponent employ the use of the new mobile ECSAS database for survey data collection.

		<p>that is recommended for use by experienced observers for all offshore projects and is available at http://publications.gc.ca/site/eng/389623/publication.html for the proponent's consideration.</p> <p>Bird distribution data should be collected during proposed activities. To verify the effects predictions, a data collection effort should be designed in consultation with ECCC and be carried out by an individual who is appropriately trained and dedicated to recording marine bird observations. ECCC can provide training in ECSAS.</p> <p>In an effort to facilitate the collation of survey data from various outside sources, ECCC has developed a new mobile ECSAS database that will permit the collection of data in a standard format. This new mobile database should be used by the proponent to facilitate data collection and storage. A User's Guide has been developed to assist the proponent in the use of this tool and can be obtained from ECCC upon request.</p> <p>In an effort to expedite the process of data exchange, ECCC would appreciate that the data (as it relates to migratory birds and/or species at risk) collected from these baseline surveys be forwarded in digital format to our office following the completion of the study at:</p> <p>Environment and Climate Change Canada (C/O Environmental Assessment) 6 Bruce Street Mount Pearl, NL A1N 4T3</p>	
--	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

		<p>These data will be centralized for our internal use to help ensure that best possible natural resources management decisions are made for these species in Atlantic Region. Metadata will be retained to identify source data and will not be used for the purpose of publication. ECCC will not copy, distribute, loan, lease, sell or use this data as part of a value-added product or otherwise make the data available to any other party without the prior express written consent of the proponent.</p>	
ECCC-21	16.4 - Contingency Planning and Spill Response	<p>All emergency incidents can potentially affect wildlife. During these incidents ECCC acts as a Resource Agency, which sets wildlife emergency response standards and guidelines related to Migratory Birds and Species at Risk under its jurisdiction. As such, Wildlife Response requires a Wildlife Emergency Response Plan (WERP), which is a component of the Incident Command System (ICS) for pollution incidents affecting wildlife, and should address all of the various procedures and strategies required to mount an effective wildlife response. At minimum, a WERP must include the following information:</p> <ol style="list-style-type: none"> 1. Information on the wildlife potentially at risk in the area; 2. Mitigation measure to deter non-affected areas; 3. Mitigation and response measures to be undertaken if wildlife and/or sensitive habitats become contaminated by the incident (including treatment of oil-affected wildlife), and 	<p>The proponent should consult ECCC when developing Wildlife Emergency Response Plans (WERPs). ECCC is available to review WERPs prior to their implementation. Even during an emergency situation, it is also important to note that permits issued by ECCC may be required prior to deterring or relocating Migratory Birds and/or Species at Risk.</p> <p>Guidance materials including “Guidelines for Developing Wildlife Response Plans” (ECCC, 2022) are available online at National Wildlife Emergency Response Framework - Canada.ca</p>

		The type and extent of wildlife monitoring that would be conducted during and following a pollution incident.	
--	--	---------------------------------------------------------------------------------------------------------------	--