



Environmental Assessment and Marine Programs
Environmental Protection Operations Directorate - Atlantic
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October 29, 2018

Elizabeth MacDonald
Conservation Officer
Canada-Nova Scotia Offshore Petroleum Board
18th Floor, T.D. Centre, 1791 Barrington Street,
Halifax, Nova Scotia, B3J 3K9

Dear Ms. MacDonald:

**RE: Proposed Seismic Surveying Program in the
Canada Nova Scotia Offshore**

**Ref: LGL Project No.
FA0164**

As requested, Environment and Climate Change Canada (ECCC) has reviewed the Project Description and Draft Scoping Document for the proposed Seismic Surveying Program Offshore Canada-Nova Scotia. From the project description, it is understood that Multiklient Invest (MKI)'s and TGS-NO_EC Geophysical Company ASA (TGS) are proposing to conduct two-dimensional (2D) and three-dimensional (3D) seismic surveys in offshore Nova Scotia in an given year from 2019-2028. The Project Area (259,400 Km²) includes offshore Nova Scotia on the Scotian Shelf and Scotian Slope. The survey design and details on equipment and vessels for the seismic survey have not yet been determined. However, it is indicated that MKI is planning on a Wide Azimuth (WAZ) 3D seismic program using a single streamer vessel and two separate source vessels.

ECCC has reviewed the above-noted documents in accordance with its mandated interests and expertise stemming from its responsibilities under the *Migratory Birds Convention Act*, the *Species at Risk Act*, the *Canada Wildlife Act*, Section 36 of the *Fisheries Act*, and the *Canadian Environmental Protection Act*. The attached comments and recommendations are intended to assist in further project planning and implementation should the proposal proceed.

REVIEW COMMENTS

Regulatory Requirements

The Fisheries Act

The proponent should be aware of the general applicability of Section 36(3) of the *Fisheries Act* which states: “no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substances or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water”. Environmental protection and mitigation measures should reflect the need to comply with Section 36(3) of the *Fisheries Act*.

The Migratory Birds Convention Act

Migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). Migratory birds protected by the MBCA generally include all seabirds (except cormorants and pelicans), all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). Migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). The list of species protected by the MBCA can be found at: <https://www.ec.gc.ca/nature/default.asp?lang=En&n=496E2702-1>. Bird species not listed may be protected under other legislation.

Under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy, or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the current MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities.

Furthermore, Section 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:

“5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

(2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, results in a substance — in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds.”

It is the responsibility of the proponent to ensure that activities are managed so as to ensure compliance with the MBCA and associated regulations. Further information can be found at <http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=C51C415F-1>

The Species at Risk Act

The proponents should also be reminded that the prohibitions under the *Species at Risk Act* (SARA) are now in force. The complete text of SARA, including prohibitions, is available at <http://laws-lois.justice.gc.ca/eng/acts/s-15.3/>

The Canada-Nova Scotia Offshore Petroleum Board should note that Section 79 of SARA states:

79(1) Every person who is required by or under an Act of Parliament to ensure that an assessment of the environmental effects of a project is conducted, and every authority who makes a determination under paragraph 67(a) or (b) of the *Canadian Environmental Assessment Act, 2012* in relation to a project, must, without delay, notify the competent minister or ministers in writing of the project if it is likely to affect a listed wildlife species or its critical habitat.

79(2) The person must identify the adverse effects of the project on the listed wildlife species and its critical habitat and, if the project is carried out, must ensure that measures are taken to avoid or lessen those effects and to monitor them. The measures must be taken in a way that is consistent with any applicable recovery strategy and action plans.

The Canadian Environmental Protection Act

The proponent should also be aware of the potential applicability of the *Canadian Environmental Protection Act* (CEPA) which enables protection of the environment, and human life and health, through the establishment of environmental quality objectives, guidelines and codes of practice, and the regulation of toxic substances, emissions and discharges from federal facilities, international air pollution, and disposal at sea.

Migratory Birds as a Value Ecosystem Component (VEC)

In conducting the environmental assessment (EA), the vulnerability of individual species/groups of migratory birds to exploration activities should reflect a consideration of the following basic factors:

- distribution and abundance of species during scheduled project activities;
- potential impact pathways;
- mitigation;
- cumulative effects; and,
- provisions for follow-up on assessment accuracy and mitigation effectiveness.

Potential Impact Pathways for Migratory Birds

The following potential impact pathways influencing migratory birds, including migratory bird species at risk (SAR) and species of conservation concern, should be considered in the analysis of any seismic survey:

- noise disturbance from seismic equipment including both direct effects (physiological), or indirect effects (foraging behaviour of prey species);
- physical displacement as a result of vessel presence (e.g., disruption of foraging activities);
- nocturnal disturbance from light (e.g., increased opportunities for predators, attraction to vessels and subsequent collision or exposure to vessel-based threats, disruption of normal activities);
- exposure to contaminants from accidental spills (e.g., fuel, oils, streamer fluids) and operational discharges (e.g., deck drainage, gray water, black water); and,
- attraction of, and increase in, predator species as a result of waste disposal practices (i.e., sanitary and food waste), as well as the presence of incapacitated/dead prey behind the vessel.

Cumulative Effects

The discussion of cumulative effects should be shaped primarily by the valued ecosystem components under consideration. While an accounting of past, present and future projects and activities is a starting point in a cumulative effects assessment, the analysis should consider how impacts from the proposed project will combine with impacts from other projects and activities. In the context of marine birds, for example, the project's contribution to existing impacts on birds (e.g. increase in predation, loss of foraging habitat) from other activities (e.g. other oil and gas activities, fishing, shipping) should be considered.

Information Sources

The proponent should be aware of ECCC's Canadian Wildlife Service (CWS)'s Eastern Canadian Seabirds at Sea (ECSAS) program in addition to its predecessor, the Programme intégré de recherches sur les oiseaux pélagiques (PIROP) program. The more recent ECSAS program has

conducted thousands of surveys over thousands of km of ocean track in offshore areas of Eastern Canada since 2006. The most up to date data for the study area should be included in the EA. This information is available by contacting ECCC's CWS's Carina Gjerdrum at carina.gjerdrum@canada.ca.

It should be noted that, while the ECSAS dataset contains the most recent seabird data available for offshore areas of Eastern Canada, surveys have not been dedicated to determining impacts of seismic on seabirds, but rather are distribution data collection exercises.

The ECSAS program can be cited as follow:

Gjerdrum, C., D.A. Fifield, and S.I. Wilhelm. 2011. Eastern Canada Seabirds at Sea (ECSAS) standardized protocol for pelagic seabird surveys from moving and stationary platforms. Canadian Wildlife Service Technical Report Series No. 515. Atlantic Region. vi + 36 pp.

While an EA may conclude that the overall impact of a seismic survey on seabirds is relatively small, it remains important that the opportunity for this activity to impact federally-protected avian species be properly acknowledged in the EA. Accordingly, it is also expected that the proponents commit to all reasonable measures to mitigate the potential for such impacts to occur. These measures are outlined below.

Mitigation

Mitigation measures related to adverse effects, including cumulative effects, should be identified. Measures should be consistent with the MBCA and SARA and with applicable management plans, recovery strategies and action plans. Mitigation should reflect a clear priority on impact avoidance opportunities. The following specific measures should be among those which are considered in preparing a mitigation strategy:

- The scoping document refers to the protocol described in Williams and Chardine's 1999 document entitled *The Leach's Storm-Petrel: General information and handling instruction*. Williams and Chardine (1999) is specific to storm-petrels. Due to a better understanding of bird strandings at sea since 1999, ECCC's CWS now expects proponents to implement protocols that are also applicable for other species of seabirds and for other bird groups, as in the ECCC CWS document entitled *Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada* (2017).

The proponent should therefore be prepared to conduct systematic checks for stranded birds, rather than only conducting routine checks, whereby designated crew members record search effort (even when no birds are found). Should storm-petrels or other species become stranded on vessels or on land, the proponent is expected to adhere to the attached *Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada* (2017) (Appendix1) which provides safe and effective procedures for dealing with, and documenting live and stranded birds; a stranded bird encounter data sheet is also available (Appendix 2).

A permit is required to implement this protocol (2017). The proponent should be advised that it is required to complete a permit application form prior to proposed activities. Permit application forms can be obtained by contacting ECCC's CWS via email at ec.scfatlpermis-cwsatlpermits.ec@canada.ca

- Ramping-up the air gun array over a 30-minute period - a procedure typically used for other animal groups - may encourage marine birds to leave the survey area and may reduce the potential for adverse interactions between the project and marine birds accordingly.

- It is expected that the proponent demonstrate how it proposes to minimize or prevent the release of hazardous substances on board project vessels (e.g. streamer fluid, chemicals for streamer repairs, fuels, lubricants) from entering the marine environment.

Attention should be paid to impact avoidance and pollution prevention opportunities and a contingency plan should be developed to enable a quick and effective response in the event of a spill. Other management practices and preventative maintenance plans should be outlined such as a protocol to prevent spill events. This protocol should describe conditions that will allow the seismic program to be conducted without spill incidents (e.g., the range of environmental conditions within which streamers can operate).

It is not stated if oil-based products will be used in the seismic streamers. The presence or lack thereof of oil-based products in these devices should be stated in the environmental assessment. ECCC's CWS recommends that seismic streamers without hydrocarbon-based fluids be used.

Data Collection

ECCC's CWS has developed a pelagic seabird monitoring protocol entitled *Eastern Canada Seabirds at Sea (ECSAS) Standardized Protocol for Pelagic Seabird Surveys from Moving and Stationary Platforms* that is recommended for use by experienced observers on all offshore projects. Attached is the protocol (Appendix 3), as well as identification guides for pelagic seabirds of Atlantic Canada (Appendix 4 and 5), for assistance in identifying pelagic seabirds in the area.

A report of the seabird monitoring program, together with any proposed recommended changes, should be submitted to ECCC's CWS on a yearly basis via ECCC's EA Program window.

In an effort to expedite the process of data exchange, ECCC's CWS recommends that the data collected from the monitoring program, as it relate to migratory birds or SAR, be forwarded in digital format to ECCC's CWS following annual program completion. These data will be centralized for ECCC's CWS internal use to help ensure that the best possible natural resource management decisions are made for these species in the Maritimes. Metadata will be retained to identify source of data and will not be used for the purpose of publication. ECCC's CWS will not copy, distribute, loan, lease, sell, or use of 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.

Effects of Accidents and Malfunctions

The assessment of environmental effects which could result from accidents and malfunctions should include a consideration of potential spill events. The assessment should be guided by the need to ensure compliance with the general prohibitions against the deposit of a deleterious substance into waters frequented by fish (Section 36, *Fisheries Act*) and against the deposit of oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds (Section 5.1, *Migratory Birds Convention Act*). In addition, the assessment should be focused on potential worst-case scenarios (e.g., concentrations of marine birds, presence of wildlife at risk). Based on this analysis, the EA should describe the precautions that will be taken and the contingency measures that will be implemented to avoid or reduce the identified impacts.

In developing a contingency plan that would support the assessment of accidents and malfunctions, and a determination that impacts could be avoided or reduced, it is recommended that the Canadian Standards Association publication, *Emergency Planning for Industry CAN/CSA-Z731-95* (Reaffirmed 2002), be consulted as a useful reference. All spills or leaks, including those from machinery, fuel

tanks or streamers, should be promptly contained, cleaned-up and reported to the 24-hour environmental emergencies reporting system (1-800-565-1633).

In the event that large numbers of birds or individual SAR are affected, spills could result in significant effects on migratory birds. Migratory birds could also be significantly affected if spills affect important habitats or critical habitat for SAR. Disturbance resulting from accidental events during the breeding season in the vicinity of SAR or colonial bird nesting areas could result in significant effects if it results in nesting failure or site abandonment by the birds.

Strategies to minimize or prevent accidental or chronic releases should be emphasized in a mitigation program. Proponents should demonstrate response preparedness and identify provisions for ensuring measures are implemented to eliminate or minimize resulting sheens or slicks in the event of accidents and malfunctions involving the release of oil. The following considerations should be factored into the development of a response plan that would help reduce impacts on seabirds:

- measures for containing and cleaning up spills (of various sizes);
- equipment that would be available to contain spills;
- specific measures for the management of large and small spills (e.g., breaking up sheens);
- mitigation measures to deter migratory birds from coming into contact with the oil;
- mitigation measures to be undertaken if migratory birds and/or sensitive habitat becomes contaminated with the oil; and,
- the type and extent of monitoring that would be conducted in relation to various spill events.

In order to assist proponents in preparing a plan for dealing with an oil spill which would potentially threaten migratory birds, ECCC's CWS has prepared a guidance document entitled Birds and Oil – CWS Response Plan Guidance (Appendix 6), and a protocol document for collecting oiled birds on beaches (Appendix 7).

In all incidents potentially affecting wildlife, ECCC's CWS 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, the Wildlife Response requires a Wildlife Emergency Response Plan (WERP) which is a component of the Incident Command System (ICS) for pollution incidents affecting wildlife. The WERP should address all of the various procedures and strategies required to mount an effective wildlife response.

At a minimum, a WERP must include the following information: 1) information on the wildlife potentially at risk in the area, 2) mitigation measures to deter non-affected wildlife from 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 4) the type and extent of wildlife monitoring that would be conducted during and following a pollution incident. The WERP should be developed according to ECCC's CWS guidelines and reviewed by CWS prior to implementation.

It is also important to note that permits issued by ECCC's CWS may be required prior to deterring or relocating migratory birds and species at risk.

Sable Island

Sable Island appears to be included within the project area. As stated in the scoping document, Sable Island is a Migratory Bird Sanctuary and includes critical habitat for species at risk. The proponent should clarify whether any activities are proposed on the island, as well as the closest distance to the island for proposed marine activities.

Colonies of migratory birds and several terrestrial species at risk (including migratory birds) are known to occur on Sable Island. The *Amended Recovery Strategy for the Roseate Tern (Sterna dougallii) in Canada* describes critical habitat for Roseate Tern on Sable Island. The potential effects of the project on these Valued Components should be clearly described in the EA, both in the context of project activities on or near Sable Island, as well as accidental events (e.g. vessel collisions resulting in spills, vessel grounding) and response; and measures to avoid or minimize effects, and a monitoring plan should be proposed.

Parks Canada should also be consulted regarding additional information and requirements regarding Sable Island.

Additional Editorial comments

- Table 4-1 of the Project Description should be updated to include all species at risk that may occur in the project area, including those species occurring on Sable Island.
- Section 6.1 of the Scoping Document: Reword the first sentence of the 2nd paragraph to: “The EA shall evaluate...species listed on Schedule 1 of the SARA and their critical habitat, *species designated as at risk by COSEWIC*, and any migratory birds.”
- Section 6.1 of the Scoping Document: Edit the 2nd sentence of the 2nd paragraph to include all potential impact pathways for migratory birds (as listed in comments above comments).

Effects of the Environment on the Project

Seismic operations will be somewhat sensitive to environmental conditions (e.g., wind, waves, ice). The EA should include considerations on how such conditions acting on the project could have consequences for the environment (e.g., increased risk of spills and impacts on valued ecosystem components). Marine weather information can be found on the Meteorological Service of Canada website at www.weatheroffice.gc.ca/marine. Additional information on regional climatology can be found at www.climate.weatheroffice.ec.gc.ca, or by contacting ECCC Weather Office directly. Also, ice information can be found on the Canadian Ice Service website at www.ice-glaces.ec.gc.ca.

I trust that this information will be of assistance in the completion of the Draft Scoping Document and review of this proposal. If you wish to discuss these comments or have further questions, please do not hesitate to contact me at your convenience.

Yours truly,

Original Signed by Monique Breau

Monique Breau
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Attachments (8)

Cc: M. Hingston, Rachel Gautreau, Joshua Mailhiot