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September 13, 2012

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CNSOPB Rec'd	
Date:	SEP 13 2012
Distribution:	KL, ET, EM
Orig to file	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Doc. Reg. No.:	15594
File No.:	75,345.7

Dear Ms. MacDonald:

**RE: Draft Strategic Environmental Assessments (SEAs) for
the Eastern Scotian Shelf and Slope – Middle and
Sable Islands Banks (Phase 1A and 1B)**

Environment Canada (EC) has reviewed the two draft Strategic Environmental Assessments (SEAs) for the Eastern Scotian Shelf and Slope – Middle and Sable Islands Banks (Phase 1A and 1B). As stated in your August 9 invitation to review the documents, the SEAs provide an overview of the existing environment, discuss in broader terms the potential environmental effects associated with offshore oil and gas exploration activities in the study area, identify knowledge and data gaps, highlight issues of concern, and make recommendations for mitigation and planning. Our comments, which are applicable to both the Phase 1A and 1B documents, are offered from that perspective as they relate to the department's mandated interests, primarily with respect to migratory birds.

In the case of the Phase 1 SEA, Figure 1.2 delineates the Gully Marine Protected Area and indicates this area as "Excluded from Project Areas"; however, there is no such exclusion shown for Sable Island. It should be clarified whether petroleum exploration activities are proposed for Sable Island, as we may have additional comments should this be the case.

Migratory Birds as a VEC

As indicated in our May 28, 2012 comments on the scoping document for the SEAs, the term "Species of Special Status" is generally used in environmental assessment to include only species at risk (i.e. species listed under the *Species at Risk Act* or provincial endangered species legislation) and species of conservation concern (i.e. species with provincial or Atlantic Canada Conservation Data Centre rarity ranks). The broad inclusion of migratory birds protected under the *Migratory Birds Convention Act* (i.e. other than species at risk and species of conservation concern) under the Species of Special Status heading can be confusing for regulators and proponents. Instead, we ask that "Migratory Birds", including species protected under the MBCA, be listed as a Valued Ecosystem Component (VEC). Those birds which are species at risk or species of conservation

concern can then be included in either the “Species of Special Status” or preferably as a subcomponent of the “Migratory Birds” VEC. The Migratory Birds VEC should then be added to the list of VECs to be assessed in the SEA (i.e. in addition to Species of Special Status, Special Areas, and Fisheries).

In finalizing the SEAs and informing subsequent project-specific environmental assessments, 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.

The following sections provide further perspective, guidance and references for consideration in each of these factors:

Distribution and Abundance of Species

The Strategic EA should provide a summary of the most recent available information on the population distributions and habitats of migratory birds and species at risk within the Study Area. Any information gaps should be identified.

Section 3.2.6 does not provide an adequate overview of the “key characteristics of the environment” with respect to seabirds. First, there is reference to only one document to describe the rich seabird community of the eastern Scotian Shelf and Slope, and this has been cited incorrectly. The year is incorrect as written and the citation on page 10.6 is incomplete. The correct citation is:

Gjerdrum, C., Head, E.J.H., and Fifield, D.A. 2008. Monitoring Seabirds at Sea in Eastern Canada. AZMP Bulletin PMZA 7: 52-58.

This particular article was reporting the results of an examination into the relationship between Dovekie and their zooplankton prey. The results presented in the article were from just one year of seabird surveys (2006) and therefore inappropriate to use to describe the seabird community on the eastern Scotian Shelf. Further, the surveys described in Gjerdrum et al. (2008) did not cover the eastern Scotian Slope at all, so it is inappropriate to use them to describe the marine bird community of this area. The following are more appropriate documents that should be used to describe the seabird community of the eastern Scotian Shelf and Slope:

Brown, R.G.B. 1986. Revised atlas of eastern Canadian seabirds. Bedford Institute of Oceanography, Dartmouth, NS, and Canadian Wildlife Service, Ottawa, ON.

Brown, R.G.B., Nettleship, D.N., Germain, P., Tull, C.E., and Davis, T. 1975. Atlas of eastern Canadian seabirds. Canadian Wildlife Service, Ottawa, ON.

Fifield, D. A., Lewis, K.P., Gjerdrum, C, Robertson, G.J., Wells, R. 2009. Offshore Seabird Monitoring Program. Environment Studies Research Funds Report No. 183. St. John's. 68p.

Second, a complete description of the seasonal use of the eastern Scotian Shelf and Slope by seabirds is lacking. We recommend a description of the seabird community that is more consistent with the descriptions given for other taxa (e.g. Section 3.2.5 Marine Mammals and Sea Turtles).

This would include a table that lists all the bird species found in the Study Areas and their potential use of the Study Areas (timing, behavior, etc.).

Figure 3.3 - This particular map was produced by the Canadian Wildlife Service – Atlantic and reproduced in the DFO (2011a) document describing the seabird community of Georges Bank. It is however an early draft (produced in 2009) and we now have a more updated version available for use. The new version incorporates more data and improved scaling, better representing the relative importance of the Scotian Shelf to seabirds and needs to be included.

When reproducing this particular map, more explanation is needed to describe what the map is showing and how it needs to be interpreted. The map is highlighting “hot-spots” or areas where large numbers of birds congregate. The pattern shown is strongly influenced by the most common species observed, and therefore under-represents less common species, including those of conservation concern. In addition, areas that are not highlighted as hot-spots do not necessarily mean those areas are not also important habitats for birds. Such information must accompany the map if it is to be used in this context.

Potential Impact Pathways for Migratory Birds

We do not agree that attraction to lights and flares would be the only potential effect on birds (Table 4.3). There are several other potential impact pathways that should be considered in the analysis of seismic surveys and exploration activities on birds:

- 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);
- 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) and the presence of incapacitated/dead prey behind the vessel.

With regard to nocturnal disturbance from light, the following should be considered: increased opportunities for predators, attraction to vessels and subsequent collision or exposure to vessel-based threats, disruption of normal activities.

Clarification should also be provided regarding the following:

- On page 5.4, it is stated that “A study on the effects of seismic surveys on moulting long-tailed ducks in the Beaufort Sea found no effects on the movement or diving behavior”. It should be noted that Lacroix et al. (2003) give the following caution regarding their study “These results should be evaluated carefully, however, as logistical and ecological factors limited our ability to detect more subtle disturbance effects. We recommend additional studies on other bird species to fully understand the effects of underwater seismic testing.”
- On page 5.4, a seismic program in the Davis Strait which showed no effects on marine birds is mentioned. The reference for this study should be provided.
- The OSPAR Commission (2007) document (cited on page 5.5) rather states that “the study calculates that about 10 % of the total bird population crossing the North Sea is impacted in some way by the light emitted from the main deck of offshore installations.” It should also be noted that the document then concludes that “There are significant effects on migrating birds on the Dutch Continental Shelf of the flaring at night and/or the light emitted at the main decks of

platforms.” The bird study mentioned in the OSPAR Commission (2007) document is Dutch, not Norwegian.

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 projects 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.

Mitigation

While project-specific mitigation is best discussed in detail during individual project reviews, there is value in describing in the SEA the range of mitigation measures typically applied by proponents. In particular, commonly applied industry standards and as well as protocols and guidance advocated by regulatory agencies should be identified. For issues of interest to EC, measures should be consistent with the *Migratory Bird Convention Act* (MBCA) and the *Species at Risk Act* (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:

- In Tables 5.3 and 9.1, as a mitigation measure, it is stated “Follow Canadian Wildlife Service mitigation measures when finding a dead or injured bird.” It is not clear whether the authors are referring the Williams and Chardine protocol or other similar protocols (see below), MBCA permit conditions, or other mitigation measures. Further details should be provided.
- Should storm-petrels or other species become stranded on vessels, the proponent is expected to adhere to appropriate handling protocols. The protocol described in Williams and Chardine's brochure entitled, *The Leach's Storm-Petrel: General information and handling instruction* which is mentioned in Table 4.3 should be used for stranded seabirds. The proponent should also develop a similar-type protocol for birds other than seabirds (e.g. landbirds, shorebirds) which may become stranded on vessels. A permit is required to implement the Williams and Chardine protocol or other similar protocols. Proponents should be advised that if they are required to complete a permit application form prior to proposed activities. Permit application forms can be obtained by contacting Environment Canada's Canadian Wildlife Service (email: Permi.atl@ec.gc.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.
- On page 5.16, it is stated that “Due to its importance for migratory birds, precautions should be taken when conducting oil and gas activities in the vicinity of Sable Island National Park.” While we agree with this, it is important that appropriate precautions be taken in the entire Study Area. The range of measures available to minimize or prevent the release of hazardous substances onboard vessels used to undertake the work should be identified (e.g. streamer fluid, chemicals for streamer repairs, fuels, lubricants) into the marine environment. Attention should be paid to impact avoidance and pollution prevention opportunities and contingency planning 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 streamer-associated spill events. This protocol should describe conditions that will allow the exploration program to be conducted without spill incidents (e.g., the range of environmental conditions within which streamers can operate, monitoring to detect leaks or tears).

- A Code of Practice for employees working in the area should be developed.

Data Collection

Further data collection may be required as part of a project-specific environmental assessment (i.e. to address any gaps identified in the SEA) and/or as part of an environmental effects monitoring program once operations begin. The following provides guidance on how this should be done for migratory birds. Bird distribution data should be collected during proposed activities in anticipation of environmental assessment needs related to future activity in the area. As with the testing of impact predictions, a data collection effort should be designed in consultation with EC and be carried out by an individual who is appropriately trained and dedicated to recording marine bird observations. Environment Canada requests the opportunity to review the results of a data collection program.

Environment Canada's Canadian Wildlife Service (CWS) has developed a pelagic seabird monitoring protocol that we are recommending for all offshore projects. Attached is a version of the protocol for experienced observers. It needs to be included in the SEA.

A report of the seabird monitoring program, together with any proposed changes, has to be submitted to CWS on a yearly basis.

In an effort to expedite the process of data exchange, CWS would appreciate that the data (as it relates to migratory birds or species at risk) collected from these baseline surveys be forwarded in digital format to our office following completion of the study. These data will be centralized for our 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. 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, such as spills from damaged seismic streamers. 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, it 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. Any other industry standards that could be used should be referenced.

Editorial comments

- In Table 4.1, it is stated that “*Under the Migratory Birds Convention Act, 1994*, it is illegal to kill migratory bird species not listed as game birds or destroy their eggs or young.” This statement is a bit misleading since it is only legal to hunt game birds during the legal hunting season and within bag limits. And the eggs and young of game birds receive the same level of protection as those of non-game birds. See further details regarding the MBCA below.
- Table 4.1 – The requirements of Section 79 of the *Species at Risk Act* should be added to the text (as amended in July 2012).
- Lacroix et al. (2003) should not be cited from a previous Jacques Whitford document (page 5.4). This scientific article which was published in the Canadian Journal of Zoology is available online at <http://www.nrcresearchpress.com/>
- Merkel and Johansen (2011) in their Introduction specify “Depending on the weather, season, the age of the birds and the lunar phase they appear to be attracted to the light and consequently risk to collide with vessels or oil/gas platforms (Montevecchi, 2006).” On page 5.4, the reference to Merkel and Johansen (2011) should therefore be changed to Montevecchi (2006).

Montevecchi, W.A., 2006. Influences of artificial light on marine birds. In: Rich, C., Longcore, T. (Eds.), *Ecological Consequences of Artificial Night Lighting*. Springer, Berlin, pp. 94–113.

This book chapter can be found on Dr. Montevecchi's website at <http://play.psych.mun.ca/~mont/pubs.html>

Migratory Birds Convention Act and associated regulations (MBCA)

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). Most of these birds are specifically named in the Environment Canada (EC) publication, *Birds Protected in Canada under the Migratory Birds Convention Act*, Canadian Wildlife Service Occasional Paper No. 1.

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 each proponent to ensure that project-related activities are managed so as to ensure compliance with the MBCA and associated regulations.

I trust these comments will be of use to you. Please contact me at 426-9152 or e-mail michael.hingston@ec.gc.ca should you have any questions.

Yours truly,

Original Signed by Stephen Zwicker for

Michael Hingston
Head, Environmental Assessment Unit
Environmental Protection Operations Directorate – Atlantic

cc J. Corkum
R. Gautreau