

GENERAL COMMENTS

For completeness, please include in ExxonMobil's response to these review comments the information provided to the C-NLOPB on April 21 and April 29, 2010 regarding the extension to the proposed program's Project Area. This information was provided in addition to the March 17, 2010 EA report and included an extension beyond the Hebron SDLs into the adjacent SDL1042 to accommodate the survey vessel's turning radius.

Seabird Data Collection

This survey provides a good opportunity to collect additional seabird data from the area, as committed to by the proponent in the EA Report in Section 3.1. It should also be indicated in Section 6.11, Monitoring and Follow-up.

In an effort to expedite the process of data exchange, the Canadian Wildlife Service (CWS) would appreciate that the data (as it relates to migratory birds at risk) collected from these surveys be forwarded in digital format to the CWS office following completion of the study. These data will be centralized for the internal use of CWS to help ensure that the best possible natural resource management decisions are made for those species in Newfoundland and Labrador. Metadata will be retained to identify source of data and will not be used for the purpose of publication. The CWS 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 prior express written consent.

Marine Navigation

The proponent should promulgate actual work locations as per Navigation to Ship notices (NOTSHIPS) as the Department of National Defence will be transiting through the area en route to northern latitudes during the timeframe provided by ExxonMobil.

Based on the information that Marine Forces Atlantic, also known as MARLANT, currently holds, there are no concerns with shipwrecks or unexploded ordnates (UXO) in this area.

Fisheries

The proposed project is tentatively scheduled to take place during shrimp and snow crab fisheries. These fisheries are expected to involve approximately 300 commercial fishing vessels fishing and/or transiting through the general offshore area during this time. As there is no temporary exclusion area from fishing in the area that ExxonMobil proposes to conduct their survey, the deployment of an FLO onboard the survey vessel, as noted in the EA Report, could effectively reduce any potential conflicts with fishing vessels or gear during the survey program. The FLO will serve as a communication link for the fishing industry during the geohazard program.

To avoid excess duplication in relation to the description of the biological and physical environment, the environmental assessment (EA) report often refers to earlier more extensive reports by LGL and Jacques Whitford. This is reasonable unless the information is critical in relation to ranking of risks.

Fish and Shellfish

It is recognized that geohazard surveys are quite small in terms of their geographic magnitude and duration and any effects on fish or shellfish during such surveys would likely be quite limited or insignificant. However, this report should have noted that there are still major uncertainties surrounding the risks associated with these activities in the absence of data. Questions remain regarding monitoring programs in relation to seismic and similar programs where airgun, multibeam and side scan sonar surveys of sound will be employed, and this point has been further highlighted in a European report on marine noise.

It is understood that little can be gained in relation to addressing knowledge gaps for biological effects under the conditions of most surveys and also that this particular survey is quite small in nature. However, the following paper, which found no evidence of acute mortalities in monkfish larvae exposed to seismic, may be of general interest in relation to potential larval effects: *Payne, J.F., J. Coady and D. White. 2009. Potential effects of Seismic airgun discharges on monkfish eggs (Lophius americanus) and larvae. Environment Studies Research Funds Report No 170, 32 p.*

Marine Mammals

In the description of marine mammals in the Project Study Area, it should be noted that sperm whales are attracted to fishing operations on the Grand Banks and therefore may approach other vessels as well. Additionally, the EA report does not mention that there are frequent sightings of fin whales on the Grand Banks during all seasons, and that blue whales (a SARA species) have also been sighted in the offshore area every year. There also seems to be an assumption within the EA report that there are no known special feeding areas or sensitive areas related to marine mammals in the area. This assumption cannot be completely warranted based on the lack of research effort in this area.

Also in the description of marine mammals, the report states that “*The best available abundance estimates for each of the marine mammal species in the Northwest Atlantic, as well as for eastern Newfoundland, are provided in Table 5.6 (Page 73).*” It should be noted that there is an updated set of abundance estimates for cetaceans on the Atlantic Canadian coast by Lawson and Gosselin (2009) (*Lawson, J.W., and Gosselin, J.-F. 2009. Distribution and preliminary abundance estimates for cetaceans seen during Canada’s marine megafauna survey - a component of the 2007 TNASS. DFO Canadian Science Advisory Secretariat Research Document 2009/031. iv + 29 p.*), which should be referenced where appropriate throughout the report. This report provides

abundance estimates for the more common cetacean species in the northwest Atlantic.

The operational mitigation measures (small operating area of 1 x 1 km survey area plus 2.5 x 2 km flow line route; 7 to 12 days for data acquisition, dependent on weather) will help to reduce any potential impacts on marine mammals. However, marine mammals and sea turtles will certainly be able to detect the variety of sound sources proposed. For this reason, the following comments have been put forward:

- It is recommended that the proponents employ multiple Marine Mammal Observers (MMOs) to monitor operations during daylight operations, rather than a single Fisheries Liaison Officer (FLO) or “Environmental Observer” which has been used in some other more extensive seismic surveys (and as is proposed within). Notably, the decreased horizontal visibility in the summer months due to fog, and during nighttime operations, reduces the efficacy of MMOs significantly.
- Specific to sea turtles, there is a possibility that the loss of streamer fluid could taint marine invertebrate food sources of leatherbacks in a localized area. In the absence of this information, careful monitoring to ensure this does not take place, to the extent practicable, is important since the streamer fluid can disperse or evaporate rapidly and could otherwise go unnoticed upon release.

SARA

Throughout the report there is mention of species being listed by COSEWIC. However, it would be more appropriate to state that species are assessed or designated by COSEWIC and reserve the use of "listed" for species that are actually listed on Schedule 1 of SARA.

Consultation

Although there was agreement that the proponent consult with the FFAW, the largest single allocation in the 3LNO area is Ocean Choice International (OCI) yellowtail (most activity takes place in 3NO). OCI does 'prospect' harvest for yellowtail flounder in other areas of the 3LNO allocation zone. This group can be consulted by contacting Mr. Bruce Chapman at the following address:

Mr. Bruce Chapman, Executive Director, Canadian Association of Prawn Producers/ Groundfish Enterprise Allocation Council, 1362 Revell Drive, Manotick, ON K4M 1K8, Tel: 613-692-8249, Fax: 613-692-8250, E-Mail: bchapman@sympatico.ca

The harvesting of multiple species occurs within the planned study area; therefore, it is important that consultations with representatives of fish harvesters' operating within the project area are continued. This is needed to ensure

minimal impacts to fishing operations and appropriate mitigation measures are employed.

Specific Comments

§3.0 Stakeholder Consultation, pg 17 - Please provide the list of regulatory agencies and stakeholders that were contacted regarding the proposed project. It appears that the only regulatory agency that was contacted was Environment Canada.

§4.3.2 Wind Climate, Table 4.1, pg 17 – As pointed out, the wind variability changes with the height above sea level. Please provide the height where the measurement is collected at the two platforms.

§4.3.3 Air and Surface Temperature, Table 4.3, pg 19 - The information contained in this table may not be reliable. They present that the minimum sea surface temperatures in winter are -2.8 degree °C, based on information from the ICOADS data.

§4.3.9 Currents, 1st para., pg 21 - These ocean currents are “off Eastern Canada” not “in Eastern Canada”.

Table 4.4, pg 22 – The largest near-bottom current should be in fall and winter.

3rd para - Additionally, the word ‘mean’ should be inserted after largest in the sentence the *‘largest near-surface current speeds reached 0.25 m/s, with an associated maximum speed of 0.96 m/s in September at a depth of 18 m’*.

§4.4.1 Sea Ice, 1st para, pg 25 - The description of ice-edge positions should be improved. Clarification is also required as to whether this paragraph is explaining the features in Fig. 4.4.

§5.2 Species at Risk, pg 28 - In a few places Schedules 2 and 3 of SARA are mentioned. It would be useful to explain that Schedule 1 is the official list of species at risk, while Schedules 2 and 3 are lists of species to be re-assessed by COSEWIC. In addition, it would be useful to add the dates that each species were given their respective designations.

§5.2.1.2 Atlantic cod (Newfoundland and Labrador Population), pg 33 - It should be noted that Atlantic cod are up for re-assessment by COSEWIC this month. On the COSEWIC website there is a link to Status Reports in preparation that will give an indication of upcoming species assessments.

§5.2.2 Marine Mammals, pg 39 - Should specify that the two species of marine mammals listed on SARA which are being referred to are actually the Blue Whale and Fin Whale. This section also indicates that the North Atlantic Right Whale is

excluded from the assessment, as it is not likely to occur in the study area. The accuracy of this statement should be verified, as it appears that by looking at the maps in the Recovery Strategy it would seem possible that, although rare, they could occur in the study area.

§5.2.5 Candidate List, pg 49 - Although it is useful to consider the COSEWIC candidate list of species, it would also be useful to look at the list of Status Reports in preparation. This is a list of species for which status reports are being developed and gives an indication of the upcoming COSEWIC assessments (*i.e.* these species are further along in the process than those on the candidate list). For example, cod and redfish are both up for assessment by COSEWIC this month.

§5.3.3 Benthos, pg 52 - The following documents may provide more information on corals. The status report, for example, has information on the NAFO Coral Protection Zone.

Gilkinson, K., and Edinger, E. (Eds.) 2009. The ecology of deep- sea corals of Newfoundland and Labrador waters: biogeography, life history, biogeochemistry, and relation to fishes. Can. Tech. Rep. Fish. Aquat. Sci. 2830: vi + 136 p.

Campbell, J.S. and Simms, J.M. 2009. Status Report on Coral and Sponge Conservation in Canada. Fisheries and Oceans Canada: vii + 87 p.

§5.7 Sensitive Areas, pg 94 - The Site Survey project area falls within Canada's Newfoundland-Labrador Shelves Marine Ecoregion. This is important to note, as two primary uses of this biogeographic classification system are: i) assessing and reporting on ecosystem status and trends, and ii) spatial planning for the conservation of ecosystem properties and management of human activities. In addition, these areas and associated information will be useful in guiding the selection of future representative marine protected areas.

1st para- It states that '*Some EBSAs are put forward...*' it may be better to reword as '*Some EBSAs may be put forward...*' and other EBSAs may be considered for protection under other management tools. It should also state that EBSAs are tools for highlighting an area that has a particularly high ecological or biological significance and that this may facilitate provision of a greater than usual degree of risk aversion in the management of activities within these areas.

2nd para. – The “Placentia Bay-Grand Banks LOMA” is not illustrated in Figure 5.30.

§5.7.1 Ecologically and Biologically Significant Areas, 1st para., pg 96 - One of the conservation objectives within the Northeast Shelf EBSA is missing, namely Coral concentrations north of Tobin's Point. It is important to mention this, as the very next sentence states that '*.... the area is also not considered*

particularly sensitive to disturbance as compared to other slope areas occurring in the region’.

1st para - Within this paragraph DFO 2007d (*Placentia Bay-Grand Banks Large Ocean Management Area Conservation*) is referenced stating that the Northeast Shelf and Slope is ranked ninth of eleven EBSAs in this LOMA. While this is true, it is important to note that if the authors are referring to how the EBSAs are ranked in accordance with the conservation objectives, then the following document should also be referenced:

Placentia Bay-Grand Banks Large Ocean Management Area Science-Based Conservation Objectives. Canadian Science Advisory Secretariat Science Advisory Report 2007/042.

Within this document, the Northeast Shelf and Slope are ranked eighth in the Placentia Bay Grand Banks: EBSA Conservation Priority Matrix.

§5.7.2 Northwest Atlantic Fisheries Organization Vulnerable Marine Ecosystems, pg 96 - It should be noted that Vulnerable Marine Ecosystems (VMEs) are candidate areas. Please refer to the end of this document for the list of candidate VMEs along with the Image of coral/sponge closed areas, which were announced in Sept 2009 and implemented in Jan 2010.

§6.5 Environmental Effects Assessment Criteria, pg 102 - The scales used for “magnitude” of potential effects, while arbitrary should include at least a note stating that an impact that might affect only 1% of individuals in a project area, might still be extremely important if the species is SARA-listed, or particularly vulnerable. Readers should be referred to Section 6.7.1.

§6.6 Mitigation Measures, Table 6.2, pg 103 – Please ensure that all mitigation measure identified in the report is included in this table.

§6.7 Residual Environmental Effects Significance Criteria, pg 104 – Please finish the first sentence.

§6.8.4 Accidental Events, pg 124 – A sentence should be included in the first paragraph reminding readers that interactions were evaluated in Section 6.8 between accidental events (i.e. loss of streamer fluid) and marine fish and fish habitat, commercial fisheries, and marine mammals and sea turtles and deemed impossible or extremely remote and not considered further and therefore not included in this section.

§6.11 Monitoring and Follow-up, pg 129 – Observations of seabirds should be included as part of the monitoring activities.

List of candidate Vulnerable Marine Ecosystems (VMEs)

Area	Description	Point No.	Latitude	Longitude
1	Tail of the Bank	1.1	44° 02' 53.88" N	48° 49' 9.48" W
		1.2	44° 21' 31.32" N	48° 46' 48" W
		1.3	44° 21' 34.56" N	48° 50' 32.64" W
		1.4	44° 11' 48.12" N	48° 50' 32.64" W
		1.5	44° 02' 54.6" N	48° 52' 52.32" W
2	Flemish Pass/ Eastern Canyon	2.1	44° 50' 56.4" N	48° 43' 45.48" W
		2.2	46° 18' 54.72" N	46° 47' 51.72" W
		2.3	46° 25' 28.56" N	46° 47' 51.72" W
		2.4	46° 46' 32.16" N	46° 55' 14.52" W
		2.5	47° 03' 29.16" N	46° 40' 4.44" W
		2.6	47° 11' 47.04" N	46° 57' 38.16" W
		2.7	46° 40' 40.8" N	47° 03' 4.68" W
		2.8	46° 24' 24.12" N	46° 51' 23.04" W
		2.9	46° 07' 1.56" N	47° 30' 36.36" W
		2.1	45° 49' 6.24" N	47° 41' 17.88" W
		2.11	45° 19' 43.32" N	48° 29' 14.28" W
		2.12	44° 53' 47.4" N	48° 49' 32.52" W
3	Beothuk Knoll	3.1	45° 49' 10.2" N	46° 06' 2.52" W
		3.2	45° 59' 47.4" N	46° 06' 2.52" W
		3.3	45° 59' 47.4" N	46° 18' 8.28" W
		3.4	45° 49'	46° 18'

			10.2" N	8.28" W
4	Eastern Flemish Cap	4.1	46° 48' 35.28" N	43° 20' 51.72" W
		4.2	47° 03' 58.68" N	43° 20' 51.72" W
		4.3	47° 03' 58.68" N	43° 34' 16.32" W
		4.4	46° 48' 35.28" N	43° 34' 16.32" W
5	Northeast Flemish Cap	5.1	47° 37' 42.24" N	43° 37' 29.64" W
		5.2	47° 58' 30.72" N	43° 44' 47.04" W
		5.3	48° 29' 52.44" N	44° 14' 42.72" W
		5.4	48° 27' 19.44" N	44° 21' 7.92" W
		5.5	47° 51' 14.4" N	43° 48' 35.64" W
		5.6	47° 35' 57.48" N	43° 43' 9.12" W
6	Sackville Spur	6.1	48° 18' 51.12" N	46° 37' 13.44" W
		6.2	48° 28' 51.24" N	46° 08' 33.72" W
		6.3	48° 49' 37.2" N	45° 27' 20.52" W
		6.4	48° 56' 30.12" N	45° 08' 59.99" W
		6.5	49° 00' 9.72" N	45° 12' 44.64" W
		6.6	48° 21' 12.24" N	46° 39' 11.16" W
7	Northern Flemish Cap	7.1	48° 20' 29.76" N	44° 54' 38.16" W
		7.2	48° 25' 2.28" N	44° 54' 38.16" W
		7.3	48° 25' 2.28" N	45° 17' 16.44" W
		7.4	48° 20' 29.76" N	45° 17' 16.44" W
8	Northern Flemish Cap	8.1	48° 35' 56.4" N	45° 05' 35.52" W
		8.2	48° 40' 9.84" N	45° 05' 35.52" W

		8.3	48° 40' 9.84" N	45° 11' 44.88" W
		8.4	48° 35' 56.4" N	45° 11' 44.88" W
9	Northern Flemish Cap	9.1	48° 34' 23.52" N	45° 26' 18.96" W
		9.2	48° 36' 55.08" N	45° 31' 15.96" W
		9.3	48° 30' 18.36" N	45° 39' 42.48" W
		9.4	48° 27' 30.6" N	45° 34' 40.44" W
10	Northwest Flemish Cap	10.1	47° 47' 17.16" N	46° 17' 27.96" W
		10.2	47° 58' 42.24" N	46° 06' 43.92" W
		10.3	48° 01' 6.6" N	46° 12' 3.96" W
		10.4	47° 49' 41.52" N	46° 22' 48" W
11	Northwest Flemish Cap	11.1	47° 25' 48" N	46° 21' 23.76" W
		11.2	47° 30' 1.44" N	46° 21' 23.76" W
		11.3	47° 30' 1.44" N	46° 27' 33.12" W
		11.4	47° 25' 48" N	46° 27' 33.12" W

Image of Coral and Sponge Closed Areas (Implemented January 2010)

