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BAB 3990-10

May 6, 2010

Mr. Darren Hicks
Environmental Analyst
Canada-Newfoundland and Labrador Offshore Petroleum Board
5th Floor TD Place
140 Water Street
St. John's NL A1C 6H6

Dear Mr. Hicks:

Subject: ExxonMobil Canada Properties- Jeanne d'Arc Basin Hebron Field Geohazard Survey Program, 2010 Environmental Assessment.

Fisheries and Oceans Canada (DFO) has reviewed the document entitled '*ExxonMobil Canada Properties- Jeanne d'Arc Basin Hebron Field Geohazard Survey Program, 2010 Environmental Assessment Report*', dated March 2010 and offer the following comments for your consideration.

General Comments

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.
- The 30-minute ramping up is a recognized mitigation measure for seismic surveys within the Statement of Canadian Practice with Respect to The Mitigation of Sound in the Marine Environment. However, it should be noted that some uncertainty still exists as to the efficacy of this strategy as there have been no formal field studies of this ramp-up procedure to date that address past recommendations (DFO 2004) for further analysis and evaluation of the effectiveness of these mitigation measures. For example, the possibility remains that ramp up may actually have the opposite effect in some cases (e.g., see Gordon et al. 2004; Lawson and McQuinn 2004).
- 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

Specific Comments

Section 4.3.2 Wind Climate

Page 17

Table 4.1 – 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.

Section 4.3.3 Air and Surface Temperature

Page 19

Table 4.3 – 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.

Section 4.3.9 Currents

Page 21

1st para- These ocean currents are “off Eastern Canada” not “in Eastern Canada”.

Page 22

Table 4.4 – 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*’.

Section 4.4.1 Sea Ice

Page 25

1st para - 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.

Section 5.2 Species at Risk

Page 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.

Section 5.2.1.2 Atlantic cod (Newfoundland and Labrador Population)

Page 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.

Section 5.2.2 Marine Mammals

Page 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.

Section 5.2.5 Candidate List

Page 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.

Section 5.3.3 Benthos

Page 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.

Section 5.7 Sensitive Areas

Page 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.

Section 5.7.1 Ecologically and Biologically Significant Areas

Page 96

1st para- 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.

*Section 5.7.2 Northwest Atlantic Fisheries Organization Vulnerable Marine Ecosystems
Page 96*

It should be noted that Vulnerable Marine Ecosystems (VMEs) are candidate areas. Please refer to the Appendix below 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.

*Section 6.5 Environmental Effects Assessment Criteria
Page 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.

Thank you for providing DFO the opportunity to comment on this EA document. If you have any questions or comments regarding the above, please contact Elizabeth Bennett, Senior Biologist, Marine Section by phone at 772-0853 or by e-mail (elizabeth.bennett@dfo-mpo.gc.ca).

Yours truly,



Carole Grant
Section Head – Marine Habitat
Habitat Protection Division
Oceans, Habitat and Species at Risk Branch

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Appendix

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' 10.2" N	46° 18' 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)

