August 10, 2010

To: C-NLOPB

I am submitting the following comments for the Hebron Development Project Draft Comprehensive Study Report.

Regards,

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Comprehensive Study Report: Hebron

Chapter 9 Marine Birds

Pg 9-9; **Provide a reference for the following sentence**, "*but generally in lower densities than on the shelf and slope; the deeper waters away from the shelf and slope are typically less productive*."

Pg 9-22 "*That number is low compared to the numbers of Leach's Storm Petrels seen from ships in the same area, and may have been a result of the tall height of observers off the water and the lack of persistent use of binoculars for scanning. Storm-Petrels are difficult to see because they are dark and fly very low over the water*." **Should reference Ballie et al. 2005**

Pg 9-28, Sections 9.4.1.1, 9.4.1.2, 9.4.1.3 "*Lighting at night throughout the Project may attract marine birds, particularly the Leach's Storm-Petrel, which may strike vessels or platform infrastructure leading to injury, strandings, and mortality*." **Table 9-9, should identify mortality as source of effect from lighting as birds that hit structures can die (thus, infrastructure and lighting must both have mortality, not just infrastructure).**

9-36. Habitat Quality, Offshore, Lighting. **Habitat quality can also be degraded for birds attracted to lights may be exposed to increased risk of predation by gulls.**

9-36 Habitat Quality, Offshore, Lighting. "*Young-of the-year birds appear to be more susceptible to light attraction than are adults, but the extent of Storm-Petrel susceptibility is unclear*." **This issue has been outstanding since the Terra Nova EA in 1997. This is a clear example of the failure of the Regulator and Responsible Authority to address such a critical issue. This project should not be allowed to proceed unless it clearly contributes towards further addressing this issue of attraction to platforms. Salvaging birds does not contribute towards understanding the issue of attraction.**

9-36 Habitat Quality, Offshore, Lighting. "*Other marine bird species, as well as migrating land birds, are also known to be attracted to lights on offshore oil and gas platforms at night, especially during foggy or overcast conditions. Birds could potentially injure themselves by flying into structures on the platform (Avery et al. 1978)."* **Given that Dovekies are one of the most abundant species in the area at certain times of year, this discussion should be expanded to consider evidence from ships in Alaska of closely related Alcids flooding onto boats from lighting levels far lower than that of a platform (Dick and Donaldson 1978, Condor 80:235-236;) and specifically consider dovekies. Further, because Dovekies are highly vulnerable to oil pollution, a two-tiered effect should be considered here: birds attracted to the platform are more likely to experience oil pollution from discharges.**

Pg 9-36 "*Foggy nights seem to attract more birds, and Leach's Storm-Petrels are more common in the Offshore Study Area during late summer to early fall*." **Given that data exist for: 1) the number of foggy nights the project will experience; 2) density of lesp in study area; and 3) past salvage information, a model should be developed to provide estimates of the number of birds which may be salvaged during the lifetime of the project (separate models for both development and production). Further, it**

should be noted that the salvage protocol and the past findings of the numbers of birds represents an underestimate of the number of birds effected by lighting as the salvage protocol only works for birds that hit and fall on the platform; it does not address birds that fall into the water.

Pg 9-37 "*EMCP will develop protocols for regular searches of birds that may become stranded on all vessels and facilities. Recovered birds will be released in accordance with standard protocols (Williams and Chardine 1999; Husky Energy 2008).*" **Given that a new platform is being built, why not instead be at the forefront of new lighting technologies which may reduce the need to recover birds? Such as shielding lights, changing light signature pattern, not having lights projected outwards (See Poot et al 2008, Ecology and Society 13:47; Baccetti, N., Sposimo, P. & Giannini, F. 2005. Avocetta 29: 89–91; Rodriguez and Rodriguez 2009 Ibis 151:299). Workers should be required to cover their windows at night to reduce light pollution and all non-safety lights should be shielded wherever possible. If EMCP chooses not to do to adopt this approach, it must provide a cost-benefit analysis for the basis of the decision.**

Pg 9-41, 9.5.1.4 Potential Mortality. "*The only routine Project construction/installation activity that is predicted to potentially result in mortality of marine birds is blasting in the nearshore*." **Given that birds may hit infrastructure due to lighting or experience predation due to attraction to the platform during installation, can experience mortality, this sentence is incorrect. (Table 9-10 notes potential mortality, therefore appropriate mitigation measures to PREVENT attraction and mortality should be required).**

Pg 9-45, Change in Habitat Quality, Flaring. "*As in the case of lighting (described above), EMCP will develop protocols for regular searches of birds that may become stranded on all vessels and facilities. Recovered birds will be released in accordance with standard protocols (Williams and Chardine 1999; Husky Energy 2008). Stranded bird reports will be provided to the CWS*." **In previous offshore oil and gas EAs in this region, other mitigation strategies have been noted on how to reduce the effects of flaring on marine birds. For example, Husky Oil Ltd (2001) noted they would attempt to "*schedule routine maintenance shutdowns to coincide with the time of maximum Storm-petrel local abundance…*" (pg 15). Assuming that shutdowns mean less chance of flaring, this mitigation should be required. The Regulator should comment on whether this was done. Given that the Hibernia project exceeded their flaring quotas (e.g., C-NOPB 1999 Annual Report), the Hebron project needs to provide evidence that they will make every attempt to minimize flaring and provide details as to how this will be achieved. Further, there should be an analysis of past of flaring for all production projects in the C-NLOPB's jurisdiction, the amount that they flared, when (seasonally) the flaring occurred and whether the flaring occurred at low lighting. A model should be developed to provide estimates of seabird mortality based on these data in conjunction with known seabird (lesp and dove) estimates. Finally, what is the regulator's response if the project exceeds their flaring quotas? I would suggest that the Regulator require the operators to provide funds specific to seabird conservation if they exceed flare quotas in addition to any other requirements in place. The funding model should be based on the time spent flaring over quota at low light levels (e.g., $100/minute).**

9-47, 9.5.2.4 Potential Mortality, "*As described above, the Leach's Storm-Petrel is the most likely marine bird species to be affected*…" **This sentence should include Dovekies as an additional species also affected by gas flaring at night.**

9.5.2.4 Potential Mortality, "*There is currently no known mitigation for this potential effect, but flaring is expected to have minimal impact on marine birds over the duration of the Project*." **See comment above regarding mitigation for flaring.**

9-48, 9.5.2.4 Potential Mortality "*The Environmental Studies Research Find (ESRF) has commissioned a study on the effects of sheens on marine birds that has not yet been published*." **This should not be used as an excuse for not including data collected by operators on the frequency, size and persistence of oil sheens in the C-NLOPB's jurisdiction. At the very least EMCP should be required to present data from Hibernia. Without these data, a worst case scenario must be assumed. Without these data, it is not possible for the public to draw its own conclusions about the potential effects of oil sheens associated with the project and to assess whether the EA is correct in its assessment of the effect.**

With regards to sheens, a published paper, resulting from ESRF funding mentioned above was released in April 2010, prior to the release of the CSR, and should be discussed: O'Hara and Morandin 2010. Effects of sheens associated with offshore oil and gas development on the feather microstructure of pelagic seabirds. Marine Pollution Bulletin 60: 672-278.

General: **in the White Rose Project CSR, an assessment of the level of certainty of the residual effect of the prediction and the likelihood of the effect occurring were provided for each predicted effect (I see EMCP has this step for overall). Why was this not done for this project? These are important steps as they provide the public with a rating of whether the prediction is a best guess, or whether the prediction is relatively certain.**

General: **Despite the definition of a significant residual environmental effect changing from the number individuals in the area (see Husky Oil Ltd 2001) potentially effected to populations, and improved information on marine bird abundance in the study area, there are still no species specific models provided in areas where the impact could be assessed. This continues to be an on-going weakness for oil and gas production EAs.**

Pg 9-53, 9.5.4.3 Potential Mortality "*In June 1979, an oil spill occurred from the Ixtoc I off Texas*…" **Ixtoc was not a spill, it was a blowout (and it was off Mexico, not Texas). This is an important distinction.**

9-53, 9.5.4.3 Potential Mortality "*Birds living in coldwater environments, such as the Study Area, are most likely to succumb to hypothermia (Hartung 1995).*" **Wiese and Ryan 2003 should be cited here as well.**

Pg 9-54, 9.5.4.3 Potential Mortality "*Oiled birds that are cleaned and released might not have high survival rates*." **This section needs to be updated. There has been much discussion in the seabird community on this issue, particularly in the past 3 months. Michael H. Ziccardi is the director of the Oiled Wildlife Care Network at the Wildlife Health Center at UC Davis, is quoted as saying "Even in the**

best of circumstances, many oil-affected animals will die in the rehabilitation center. However, due to the evolution of professional oiled rehabilitation organizations over the past 30 years, survival is much higher than in the past. For spills that my organization, the Oiled Wildlife Care Network, manages for California, we successfully release, on average, 50 to 75 percent of the live animals collected."

http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/06/23/EDFM1E32SQ.DTL#ixzz0rgxFIdJA

Thus, Dr. Ziccardi is suggesting that the situation may not be as dire as we think when it comes to cleaning birds.

Pg 9-57. General. **Given that the EA discusses the lack of relationship between the quantity of oil spilled and the resulting mortality of seabirds in past oil spills, there should be a paragraph which discusses small spills known to originate from all production platforms in the C-NLOPB's jurisdiction, the frequency of these spills *and* follow-up on them especially regarding persistence & size. Information should be provided on whether attempts were made to contain/clean up small spills from platforms and how the impacts of these small spills on seabirds were assessed and by whom (i.e., CWS or operator). If data on estimated mortality associated with small spills were not obtained, it should be discussed why this was not possible. At the very least, EMCP should provide these data from the Hibernia Project. If these data are not presented, it should be stated why they are not presented. Further, there should be a citation on the impact of chronic oil pollution on seabird populations (Piatt et al. 1990. Effects of oil pollution on marine bird populations. In Effects of oil on wildlife, Research, Rehabilitation and general concerns. Proceedings from: The Oil Symposium, Herndon, Virginia, Oct 16-18 1990).**

pg 9-58, Potential Mortality. "*Mitigation for accidental hydrocarbon spills will consist of following the protocols detailed in the spill response plan. The oil spill response plan is under development. Depending on the nature and tiered response required, mitigations include the provision for spill response equipment and the rescue and rehabilitation of oiled marine birds*." **Spill Response plans should be a public document which is included in the EA process prior to permitting the Hebron project. Further, spill response plans should include detailed information as to HOW the impact of all oil spills > 1 bbl will determine the impacts of seabirds in the spill area. These plans should be based on prior experience in the area and describe successes and failures at attempts to clean and contain spills.**

Pg 9-59. Table 9.13. Subsea blowout predicted as reversible to marine bird populations. **A prediction of a blowout which could last 36 months as being reversible to all seabird populations present in the study area is not substantiated. EMCP must discuss the potential effects of a blowout separately and provide details on a worst case scenario and justify and provide species-specific population models which support this prediction.**

9-63. "*A specific EEM program to verify the accuracy of assessment predictions and the efficacy of mitigation measures is not planned for Marine Birds*." **This is unacceptable given that birds are a VEC and the most vulnerable to oil (and light) pollution. The EEM should at the very least include a verification of the accuracy of the assessment predictions for accidental spills. Further, EMCP should be required to contribute to the knowledge base on the effects of light and flares as they pertain to**

attraction. An automated radar system (such as "Merlin" Bird radar; see also Zaugg et al. 2008, Journal of the Royal Society Interface, 5:1041-1053; **Hüppop et al. 2006 Ibis 148) should be required as part of the construction of the platform.**

General – **the primary stakeholder, ExxonMobil is also the lead operator for the Hibernia Project. When members of the public, including NGOs who participated in EA reviews for Hibernia requested important information on oil spill pollutant data ExxonMobil choose not to disclose this information (Fraser, G.S. and J. Ellis 2008. Reply from Gail Fraser and Joanne Ellis to a letter from CNSLOPB. *Journal of Environmental Assessment Policy and Management.* 10 (4): 483). I request a statement from the EMCP that they have a commitment to disclosure, particularly around oil pollutant data.**

Chapter 14. Accidental Hydrocarbon Spill Events

Pg 14-7. Blowouts during drilling. "*The reason for this, according to Scandpower (2000), is that North Sea operators are required by law to always have two barriers during exploration and development drilling, and this is not the case in the US. Regulations similar to the North Sea's apply in Canada (i.e., two barriers), so it is fair to derive blowout frequencies for Canada on the basis of North Sea statistics*." **The specific guidelines for a two barrier requirement in Canada should be referenced in this statement.**

14.1.3 Platform Spills Involving Small Discharges. Table 14.12. **Nowhere in this section does the proponent discuss the accidental spills of synthetic-based drill cuttings or drilling fluids. Yet, spills of these substances, including some in the 50-99 bbl category, have occurred in the C-NLOPB's jurisdiction. Given the exchange with the C-NLOPB over the reporting of these types of spills and how they were not accounted for in past EAs, it is disappointing to see this information is not present (Fraser, G.S. and J. Ellis 2008. Reply from Gail Fraser and Joanne Ellis to a letter from C-NLOPB. *Journal of Environmental Assessment Policy and Management.* 10 (4): 475-481). There must be a section which describes the discharge of these pollutants into the marine environment, even if they cannot be presented in terms of probability of occurrence, there should be a table which presents the spills associated with SBMs. In light of O'Hara and Morandin's (2010) work this is outright negligence by the proponents not include this information and by C-NLOPB to allow the draft CSR to go forward without this information.**