Environmental Stewardship Branch
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November 2, 2006 File No.: 4194-37/H135-5

Ms. Kim Coady
Canada Newfoundland Offshore Petroleum Board
Fifth Floor, TD Place
140 Water Street
St. John's, NF A1C 6H6

Dear Ms. Coady:

RE: Husky Drill Centre Construction & Operations Program, EAS 2006-031B Environmental Assessment Report

As requested in your letter of September 15, 2006, Environment Canada (EC) has reviewed the draft environmental assessment (EA) report for the above-noted project. The document was circulated for review within EC and the following is a consolidated response based on the input of several departmental experts. Editorial comments are provided in Appendix A.

The EC review is founded on the department's mandate under the *Migratory Birds Convention Act* (MBCA) and Section 36 of the *Fisheries Act.* Pertinent EC expertise also originates with the *Canadian Environmental Protection Act* (CEPA), the *Canadian Wildlife Act,* the *Species at Risk Act* and the *Department of the Environment Act.*

POLLUTION PREVENTION AND CONTROL

Chemical Selection and Use

Chemicals used in the offshore will be screened according to the Offshore Chemical Guidelines (NEB *et al*., 1999), but the EA provides no information on the matter. *Offshore Waste Treatment Guidelines* state that "a chemical substances that "passes" (the chemical selection) process is not necessarily automatically accepted for discharge" (p. 3). In addition, *Offshore Waste Treatment Guidelines* also require "operators to evaluate chemical substances used in their operations to ensure that those used are the most environmentally appropriate" (p. 3).

Given the need to understand and communicate the environmental risks associated with the project, and how those risks will be managed, it is recommended that the EA include a description of the types of chemicals that could be employed during various project implementation phases (e.g., drilling, well testing, well completion). How will the proponent demonstrate that the most environmentally appropriate chemicals have been selected?

Identification of chemicals by common name and Chemical Abstracts Service (CAS) number would allow EC to fulfill its role as an expert federal authority. With this information in hand, EC will be in a position to help the CNLOPB in the assessment of environmental effects that could result from chemical releases and help the CNLOPB ensure that appropriate mitigation and follow-up measures related to protection of the environment are identified and put in place.

Section 3.9 Description of Waste Discharges and Treatments

The *Offshore Waste Treatment Guidelines* (NEB et al., 2002) place an onus on operators to review and implement pollution prevention measures that minimize waste generation and discharge. Consideration of pollution prevention measures has important implications for the nature and extent of environmental impacts from offshore activities. Nonetheless, the discussion of pollution prevention opportunities is limited in the EA. Similarly, consideration of alternative means of carrying out the project is essentially restricted to a brief paragraph on rig type and a sentence on the use of vertical wells (p. 10). Examples of pollution prevention opportunities which could be considered in revisions to the EA include the following:

- opportunities to recover water-based mud as opposed to a bulk release at the end of the well;
- alternative means of managing synthetic-based muds such as measures that reduce drilling mud volumes, reduce or substitute the toxic constituents of drilling muds, and other means of managing the resulting waste (e.g., re-injection of cuttings, transport to shore) recognizing that technology is being developed to remove oil from cuttings);
- substitute drilling additives; and;
- options related to the length and/or diameter of the surface-hole section.

Section 3.9.8.1 Cooling Water

The EA states that the target discharge concentration for chlorine in cooling water is 0.5 ppm. Chlorinated wastewater effluent through once-use coolant systems is listed as a toxic substance under CEPA. It is recommended that the EA include a discussion of alternatives to chlorine use and whether these are feasible for the proposed project. If chlorine is to be employed, the proponent should indicate which chlorine product has been selected for use and consider the potential for the dechlorination of cooling water prior to discharge. The Pest Management Regulatory Agency should be contacted with respect to the applicability of the *Pest Control Products Act* and use of chlorine in any non-closed-loop cooling water systems.

Section 7.6.1.7 Atmospheric Emissions

For greater clarity and certainty, the proponent should include the following considerations in an assessment of impacts to air quality:

- emission estimates for SO_2, NOx, H_2S, PM, PM2.5, PM10, and VOCs according to source
- potential local effects and contributions to atmospheric loadings as they pertain to ambient air quality objectives in the immediate area
- a demonstration of how every reasonable effort to adopt best available technologies and best management practices is being taken so as to minimize emissions of air pollutants

Dispersion modeling is the appropriate method for estimating local air pollutant concentrations as a result of the project.

Section 9.3 Monitoring and Follow-up

This section indicates the proponent's commitment to conduct a spill-specific EEM program to test specific hypothesis as part of the oil spill response plan (OSRP). However, the latest version of the OSRP on file at EC (dated 2004 05 20) contains the following elements:

1) the use of aerial surveys although these were found to be inadequate based on responses to recent actual spill events; and
2) activation of the full EEM sampling program for spills >20 m^3 although the annex which describes that program contains only a note that the emergency EEM is to be completed before production.

Therefore, if there is a more recent version of the OSRP, please provide a copy including the EEM annex for review and any revisions in light of recent experience.

MINIMIZATION OF GREENHOUSE GASES

Section 7.6.1.7 Atmospheric Emissions

The project will result in the release of greenhouse gas (GHG) emissions, including emissions from blowdowns, maintenance activities, leaks, and accidents and malfunctions. The current federal government has committed to developing a plan to reduce GHGs and ensuring clean air, land, water and energy for Canadians.

Several GHGs contribute to climate change. The main anthropogenic contributor is carbon dioxide (CO_2) and the second major contributor is methane (CH_4). Methane is also the primary component of natural gas. Although annual anthropogenic emissions of methane are less than CO_2, methane is a more effective heat-trapping gas. Each kilogram of methane warms the earth about 23 times more than the same mass of carbon dioxide.

Minimizing GHG releases is important from an environmental and economic perspective. It is generally easier to reduce emissions by implementing best practice options at the project planning and design stage rather than after project construction. Estimates of the quantity and composition of GHG emissions can provide a basis for comparing the project with industry profiles, evaluating reduction opportunities and verifying the effectiveness of the measures implemented.

GHGs are a cumulative, global issue and reducing GHG emissions from all sources, both large and small, should be considered. Environment Canada continues to encourage consideration of best practices in an effort to reduce GHGs.

The proponent is encouraged to take the following steps in planning the project:

- estimate GHG emissions from all project phases (e.g., installation, commissioning, operation, maintenance) and sources; and
- consider and implement best practices available for GHG emissions reduction and verify the effectiveness of these efforts.

EFFECTS ON MIGRATORY BIRDS

Environmental Assessment Requirements under the Species at Risk Act

As you are aware, the *Species at Risk Act* (SARA) amends the definition of “environmental effect” in subsection 2(1) of the *Canadian Environmental Assessment Act* (CEAA) to clarify, for greater certainty, that EAs must always consider impacts on a listed wildlife species, its critical habitat or the residences of individuals of that species.

SARA also requires that the person responsible for a federal EA must, without delay, notify the competent minister(s) in writing if the project being assessed is likely to affect a listed wildlife species or its critical habitat. Notification is required for all effects, including adverse and beneficial effects, and the requirement to notify is independent of the significance of the likely effect. The person must also identify adverse effects of the project on listed species and their critical habitat. And if the project is implemented, the person must ensure that measures are taken to avoid or lessen adverse effects and that effects are monitored. Mitigation measures must be consistent with recovery strategies and action plans for the species.

The complete text of SARA, including prohibitions, is available at www.sararegistry.gc.ca. For guidance on SARA and EA, the proponents may wish to make use of the *Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada* available at: http://www.sararegistry.gc.ca/virtual_sara/files/policies/EA%20Best%20Practices%202004.pdf

Section 5.7 Marine Birds

It is stated in the EA that there are increased bird numbers along the continental shelf edge from July to September (p. 90), however, Figure 5.33 does not support this conclusion. There is an increasing pattern of effort from July to September, but comparisons between blocks for which there is both summer and winter data, for example, show similar patterns of abundance along the shelf edge.

It should be noted that Baccalieu Island is not only the largest Leach's Storm-Petrel colony in Atlantic Canada (p. 90), but is the largest in the world.

Section 7.6.4.3 Lights (Marine Birds)

The report states that birds in one area would not be attracted to other areas where offshore operations would be present. The proponent should indicate if there is any evidence to support the claim that birds present in one area are not attracted to others. The draft EA also indicates that the extent of the effects of light on birds is 1-10km^2. The rationale for using this range should be explained, as it is likely that flares and lights would be visible at distances greater than 10km.

Section 7.6.4.14 Monitoring and Follow up (Marine Birds)

The Canadian Wildlife Service (CWS) of EC has developed a pelagic seabird monitoring protocol that is recommended for all offshore oil and gas projects. Two versions of the protocol and a blank data sheet have been provided under separate cover. One version of the protocol is for individuals who have experience conducting seabird surveys. A guide sheet to the pelagic seabirds of Atlantic Canada is available through the CWS office in Mount Pearl.

The protocols are a work in progress and we would appreciate feedback from the observers using them in the field. A report of the seabird monitoring program, together with any recommended changes, should be submitted to CWS upon completion.

Section 7.6.7 Species at Risk

The Ivory Gull is listed as a species of special concern on Schedule 1 of SARA. However, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has recently assessed the Ivory Gull as endangered. In the event that the Ivory Gull is uplisted to endangered on Schedule 1 of SARA during construction or operation of the proposed new drill center, the applicable SARA requirements and regulations must be considered.

Section 8.7.5 Marine Birds

Even small spills of oil can have very serious effects on migratory birds. Therefore, every effort should be taken to ensure that no oil spills occur in the area. The proponent should ensure that all precautions are taken by the contractors to prevent fuel leaks from equipment, and that a contingency plan in case of oil spills is prepared. Furthermore, the proponent should ensure that contractors are aware that *section 5.1* of the *Migratory Birds Convention Act* prohibits persons from depositing harmful substances in waters or areas frequented by migratory birds.

EFFECTS OF THE ENVIRONMENT ON THE PROJECT

Section 4.0 Physical Environment

The EA references a detailed report by Oceans Ltd (2005) provided in Appendix 1. Sections 1 and 2, and Appendices A and B of this Oceans Ltd report, are nearly identical to the wind and wave information presented in Section 4.2, Climate, and Appendices A&B, in LGL (2005a) [*Husky Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area Environmental Assessment*, prepared by LGL Ltd in association with Oceans Ltd, Canning and Pitt Assoc., Inc,and PAL Environmental Services, for Husky Oil Operations Ltd, dated 10 June 2005]. It would be clearer to refer to LGL (2005a) in the EA report rather than Oceans Ltd (2005),, since the wind and wave information in LGL (2005a) has been more widely distributed and reviewed..

EC review comments #6-20 and #42 on the wind and wave climate and its effects on the project, described in LGL (2005a), and the responses to those comments are contained in Section 4.2, 4.4, and 6.2, and Appendix 1 of LGL (2006) [*Husky Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area Environmental Assessment Update*, prepared by LGL Ltd in association Oceans Ltd, Canning and Pitt Assoc., Inc, and PAL Environmental Services, for Husky Oil Operations Ltd, dated 1 March 2006]. These comments and responses should be incorporated into the current EA.

The EA did not include any mention of long-term or decadal climate variation or change as it relates to the marine climate in this area, even though this project includes a production program scheduled out to 2020. Most climate studies to date have not yet definitely shown an increasing trend in winds and waves over the Grand Banks or the Scotian Shelf. In fact, some studies have shown a flat or slightly decreasing trend. However, projections from coupled atmosphere-ocean climate models show that an increasing trend is expected in the future. While the effects of long-term climate change may or may not impact the area by that date, the time period is long enough to include variations due to inter-annual or decadal variability. It is recommended that current atmospheric circulation patterns, such as the North Atlantic Oscillation or the Pacific-North America pattern, how they vary over a decadal scale, and how they relate to marine climate over the Grand Banks, be discussed.

Section 4.2.3 Marine Climate Data Sources

This section lists the databases used to derive the marine climate statistics in recent assessments of the Project Area. In addition to the AES40 hindcast database, it lists the marine weather and sea state observations by ships and platforms archived by ICOADS; marine weather observations from Husky programs on the Grand Banks during the 1980s and 1990s; and wind observations, waverider buoy data, and ocean current data, from a number of drilling programs on the Grand Banks from 1980-1989. It does not appear that any of the databases of observations or measurements were used in the derivation of the wind and wave climate, despite what is suggested in this section. The EA report itself contains almost no specific information on climatological wind

and wave statistics for the area. Instead it refers to Oceans Ltd. (2005), contained in the Appendix. The wind and wave information in Oceans Ltd. (2005) is based entirely on the AES40 dataset of hindcast values.

The assessment of the physical environment would be much enhanced by the analysis of the observations mentioned in this section. ICOADS observations are available directly from the ICOADS website, which allows downloading of subsets of data defined by specific areas. Waverider data are available directly from the MEDS website.

The wind sources listed in this section come from marine reports, which include a 10-minute mean wind. However aviation observations include a 2-minute mean wind, which is of more use for design (platform selection) and operational considerations. Aviation reports and other instrument measurements, including waverider data, would be available from industry archives. Specifically, the Hibernia platform has been in place and transmitting 3-hourly marine reports, since November 1997. The Henry Goodrich and the GSF Grand Banks semi-submersible platforms have been operating in the area for the past several years, and have sent marine reports on a 3-hourly basis. As mentioned in this section, a waverider has usually been located near a drilling platform. The Terra Nova FPSO has been operating in the area since January 2002 and the Sea Rose FPSO has been on site at White Rose since August 2005. While these FPSOs have not sent marine reports, they would have aviation observation programs in support of helicopter operations to each ship, and this data would be available in industry archives.

It is recommended that recent aviation and marine observations of winds and waves from platforms and waverider buoys operating in the area in recent years also be analyzed and results presented and compared to the AES40 hindcast results. This would be of particular value as there have been a number of very extreme storms in the last 10 years, and given that the AES40 hindcast wind is a somewhat different quantity than what is observed by platforms.

Section 4.2.4 Winds

This section requires elaboration. Even if the physical environment is described in a separate report, pertinent details should be summarized in the EA report. As it stands, the EA does not provide specific values, other than that maximum monthly wind speeds exceed 30 m/s in February. This value represents the maximum one-hour mean wind speed at 10 m, but this was not stated. The kind of wind speed should be defined in terms of averaging period and equivalent anemometer height as it makes a significant difference, as noted below.

The anemometer height affects the mean wind speed value, and higher peak values are expected for shorter averaging periods. The AES40 hindcast winds represent a one-hour mean wind speed. Peak values from one-hour mean winds will be lower than peak values from the 10-minute means in marine reports and lower than the peak values from the one to two-minute means used for aviation. Anemometers are generally well above 10 m, around 80 m for drilling platforms, as indicated in Section 4.2.3, or as high as 139 m at Hibernia. The 2005 reports gives 10-minute and 1-minute mean equivalents to the 1-hour mean, for the extremal analysis winds. These are determined by increasing the one-hour maximum values by 1.06 and 1.22, respectively. A maximum one-hour mean wind speed of 30 m/s (58 kt) would correspond to a maximum 10-minute mean wind of (31.8 m/s) 61 kt, for example. References to the adjustment factors should be given. There are also methods to adjust the winds for height. The accuracy of these statistical or empirical adjustment methods is uncertain and dependent on actual conditions in the marine surface layer. The 2005 Oceans Ltd. report indicates that the wind speeds are based on gridded data at 6-hourly intervals, and may be slightly underestimated, and that it is highly probable that some of the peaks in the wind speed have been missed by the hindcasting methodology.

It would be prudent to analyze winds that have been measured for marine reports and for aviation, by platforms located near the area of interest for more than 2 decades, in some cases. These results, including description of peak events, should be presented..

There does not appear to be any consideration of extreme winds and waves that might be experienced during passage of a tropical, transitioning, or post-tropical cyclone during the summer and fall. This analysis should be conducted or previous studies applicable to this area should be referenced and summarized. Although the passage of tropical, transitioning, or post-tropical cyclones over this area is relatively rare, the EA should include some consideration of the possible conditions should one occur.

Description of the climate typically includes descriptions of the means, maximum values, and some indication of the frequency distribution of the field of interest. Wind roses, frequency distribution (percent exceedance) plots, and joint frequency distribution tables of wind speed and direction, on an annual and monthly basis, are provided in Appendix 1 of the EA report. These are useful ways of describing typical climate conditions. However the wind roses, frequency distribution plots, and joint frequency distribution tables are not usually adequate to describe the top 10 percent or so of the wind speed distribution. The extreme values occur too infrequently to appear on diagrams or in tables giving percent frequency of occurrence to the hundreths decimal place. These will not show the most extreme values.

For any additional analyses of wind climate that may be undertaken for this EA, such as for observed data, it is recommended that additional means of showing the frequencies of the more extreme values be explored. For example, this could include box plots showing the 75^{th}, 90^{th}, and 99^{th} percentile values, and peak values, of wind speed, by wind direction.

Section 4.2.4.1 Wind-generated Waves

There is no quantitative information presented in the main body of the EA. The relevant information should either be presented in this section or summarized from the appendix or other sources.

The EA should include an analysis of hourly significant wave height and peak period measurements made by waverider buoys in the area. This should include presentation of means, peak values, and frequency distributions. This may show useful wave information for the local area that cannot be obtained from the AES40.

As recommended for the section on wind, any additional analyses of wave climate that may be undertaken for this EA, such as for measured waves, should explore methods of showing the frequencies of the more extreme values of the wave height and period distributions.

Section 4.4.1 Wind and Wave Extreme Analysis

This section should be retitled as either Wind and Wave Extremal Analysis or Wind and Wave Extreme Value Analysis. The EA only refers to the analysis in LGL (2005a), but does not include a summary. Pertinent results should be summarized. There is no reference to the extremal analysis presented in the appendix (as noted, it is the same as in LGL 2005a).

The appendix gives extremal analysis results for one-hour mean wind speeds, and gives those values adjusted to 10-minute mean and 1-minute mean equivalent extreme values. For 10-minute mean winds, at 10-m, the 1-yr, 10-yr, 25-yr, and 100-yr return period wind speeds are 50 kt, 57 kt, 60 kt, and 64 kt, respectively. However observed wind speeds during extreme storms in recent years have exceeded these values. Examination of storm summaries for the North Atlantic in the Mariners Weather Log, produced by NOAA (US National Oceanic and Atmospheric Administration) shows

that the Hibernia platform winds have reached or exceeded 75 kt in each of the last 5 autumn/winter seasons, when the anemometer height was 139 m. If an adjustment factor of .77 is used to reduce these winds to 10 m (assuming neutral stability and a logarithmic profile), that corresponds to a wind at 10 m of 58 kt. This is more than the AES40 10-yr return period value. A sustained southwest wind of 97 kt was measured at the Hibernia platform on 11 February 2003. Reduced by 0.77, this would correspond to a 10 m wind of 75 kt. This exceeds the AES40 100-yr return period value. Reports from the Henry Goodrich semi-submersible platform or other platforms, when available, tend to confirm the validity of these extreme values. As indicated in the Mariners Weather Log, these very high wind speeds are also sometimes confirmed by QuikScat satellite-sensed wind speeds.

Summary values from the extreme value analysis of AES40 hindcast data should be given in the body of the EA report and compared to the extreme wind speeds measured by platforms in recent severe storms over the Grand Banks. The wind comparison should include adjustment of values to a standard reference height, using air and sea temperature observations if possible. Peak one-hour mean hindcast wind values should be adjusted to be equivalent to the shorter averaging periods corresponding to observed peak values, using the best methods available.

Standard adjustment methods for wind, to account for height and averaging period, are empirical and/or statistical. Research and analysis of continuous wind measurements obtained and archived by the offshore industry at various heights from various platforms under extreme conditions might result in improved adjustment methods that could be tailored to the conditions and the platforms on the Grand Banks. In addition, analysis of continuously measured winds speeds would allow assessment of the frequency of rapid wind direction changes at high wind speeds, a particular concern for FPSOs (the kind of vessel planned for use in the production phase of this project). This kind of analysis of rapid wind changes is not possible from 3 or 6-hourly values. Both of these types of research would make valuable contributions to improved understanding of the severe climate in the area and its effects on offshore structures.

During the 11 February 2003 storm mentioned above, a waverider in the area measured a significant wave height of 14.66 m. This is close to the AES40 50-yr return period wave height of 14.5 m. Peak significant wave heights from other recent extreme storms have been measured between 7 and 13 m, which were in the same ball park as the AES40 hindcast values. It is recommended that the EA present peak significant wave heights measured by waverider buoys, and compare them to AES40 hindcast waves, and to the extreme value analysis wave heights.

Section 4.5 Ice and Icebergs

The information on ice and icebergs is a succinct summary of what was used in previous reports on Jeanne-d'Arc Basin. In section 4.5.1, it is stated that sea ice cover occurs for an average of four weeks once every three years. Based on the Canadian Ice Service (CIS) report, "Sea Ice Climatic Atlas East Coast of Canada 1971-2000", there have been occurrences of ice in the area 1-15% of the years from the end of January to the end of April, and 16-33% of the years between the end of February and the end of March.

In section 4.5.2, the first sentence mentions that in the "last ten years" an average of 900 icebergs reached the Grand Banks each year. It should be specified what period is implied by "the last ten years" (not 1997-2006).

In section 8.3.4, it is stated that a "detailed discussion of pack ice distribution" is found in Appendix 1. No reference to ice can be found in Appendix 1.

Section 6.8 Effects of the Environment on the Project

This very short section states that wind, ice, waves, and currents, particularly extreme events, that have effects on the Project, are described in detail in Section 4. This is an incomplete statement, since there is very little information in Section 4 itself. The details are in the Appendix. As it stands, section 4 of the EA does not even include a summary of specific significant values likely to affect the project.

There is no description of how the environment could impact on the project, and there is no justification for the statement that effects of the environment on the Project are expected to be not significant. EC has prepared a short document entitled, "Guidance on the Consideration of the Effects of the Environment on a Drilling Project", which could provide some guidance in developing the appropriate justification for EA conclusions.

In the EA, the assessment of effects of the environment on the project should include a very brief description of threshold and extreme values likely to impact operations, both in the drilling phase and in the production phase. This would allow assessment of potential downtime. Environmental conditions would have more impact on the production phase, since this would include the wind and wave sensitive offloading from the FPSO to shuttle tankers. Also, FPSOs are more sensitive to severe wind and wave conditions than semi-submersibles, so different thresholds would be required.

The assessment of this factor should also include description of weather and wave impacts and methods to mitigate against impacts, under various worst case scenarios for the different platforms and vessels to be used for the project. For example, in the rare event of a blow-out, severe winter weather could hamper or delay efforts to cap a well. Weather at the thresholds of normal operating conditions could increase the risk of a collision between the shuttle tanker and the FPSO. Severe sea states could impact on the ability of the platform to disconnect safely from the well.

I trust that this information will be of assistance in your 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 Glenn Troke

Glenn Troke
Environmental Assessment Coordinator
Environmental Protection Operations Directorate - Atlantic.

Attachment

cc K. Power B. Jeffrey

Appendix A - Editorial Comments

Table 5.8
Some of the scientific names are missing from the table:
Sooty Shearwater – *Puffinus griseus*
Red-necked Phalarope – *Phalaropus lobatus*

It is not clear how the categories Common, Uncommon, Scarce and Rare occurrence are designated. These categories should be quantified.

Figure 5.33
Please provide a reference for this figure.

Section 4.5.1
The following sentence requires clarification and/or rewording: "The thickness of most of the sea ice that occurs on the Grand Banks ranges from 30 to 100 cm, based on CIS ice chart data for periods of ice coverage (1985-2001) **that exceeded four weeks duration**"

Section 5.7
In the fourth paragraph on page 90, the last sentence describing what an IBA is should be moved up to follow the first sentence in that paragraph where the term IBA is introduced.

Section 5.7.1.2
The correct spelling for the title of this section should be Hydrobatidae.

Section 5.7.1.6.1
The Dovekie breeding area listed as "Nova Zemlya" is spelled incorrectly. The correct spelling is Novaya Zemlya. Other breeding sites that could be added to the list include Severnaya Zemlya and Svalbard.

Section 5.7.2.2
Storm-Petrels also feed on fish (myctophids, cod, rockfish), squid and octopus.

Section 7.6.4.3
In the second paragraph, Storm-petrels should read Storm-Petrels.

Section 8.7.5.4
In the third paragraph, it should be noted that adult alcids are also flightless during moult.

Section 8.7.8
The document states that any effects of an accidental spill event on the Ivory Gull may be significant, but will be reversible over time at the population level. Evidence or a reference for this statement should be provided.

Section 5.3
Although the Ivory Gull is still legally listed as Special Concern, it has been upgraded by COSEWIC to Endangered.

Figure 5.1
The Important Bird Area at Quidi Vidi is Quidi Vidi Lake, not Quidi Vidi Harbour as stated in the document.

Table 5.1
The Fin Whale is COSEWIC-listed as Special Concern, and should be included in the table. Also the scientific name for the Ivory Gull is *Pagophila eburnea*, the `n` should be removed from *eburnean* in the table.

Section 5.7
In paragraph 2 on page 87 the first letter of each word should be capitalized when spelling Programme Intégré de Recherches sur les Oiseaux Pélagiques out in full.