BERR | Department for Business Enterprise & Regulatory Reform

APPROPRIATE ASSESSMENT

Consultee Responses

APRIL 2008

24TH OFFSHORE OIL AND GAS LICENSING ROUND - BLOCK 17/3 (INNER MORAY FIRTH)

APPROPRIATE ASSESSMENT WITH REGARD TO 24TH OFFSHORE OIL AND GAS LICENSING ROUND BLOCK 17/3 (INNER MORAY FIRTH)

Responses specifically on the draft Appropriate Assessment[1] were received from:

1. Professor Paul Thompson (University of Aberdeen)
2. Scottish Natural Heritage
3. Joint NGO response – Whale and Dolphin Conservation Society, Care for the Wild, Friends of the Earth Scotland, World Wildlife Fund, Marine Conservation Society
4. Scottish Environment Link – Hebridean Whale and Dolphin Trust, Marine Conservation Society, Scottish Wildlife Trust, Whale and Dolphin Conservation Society, WWF Scotland
5. Greenpeace
6. Scottish Wildlife Trust
7. Mrs Ginny Battson
8. Alan Airey
9. Margaret Hunter

[1] In addition, a number of expressions of general concern about hydrocarbon exploration in the Moray Firth were received

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12 February 2008

Dear Sir Madam,

Comments on Appropriate Assessment: 24th Offshore Oil and Gas Licensing Round – Block 17/3 (Inner Moray Firth)

Please find enclosed my response to the BERR Appropriate Assessments for Block 1713 in the Inner Moray Firth.

Over the last 20 years, I have conducted research on marine mammals in the Moray Firth for a number of stakeholders with an interest in this Appropriate Assessment. However, this response is made independently as a result of my concern that these important decisions are made using the best available science. As such, the comments in this covering letter and Annex I represent my own view, and should not be attributed to the University of Aberdeen or any of the bodies funding or collaborating in my research. To ensure transparency, I include a brief CV and list of funding bodies and organisations with whom I've worked on related issues in Annex II.

My main concern with the proposal relates to the contrasting recommendations in the Appropriate Assessments for the Moray Firth and Cardigan Bay Blocks. The Moray Firth Appropriate Assessment argues that this development is acceptable because there is a better knowledge of the bottlenose dolphin population using this area. However, the Appropriate Assessment fails to adequately review the strengths and weaknesses of data available from the Moray Firth population, and the extent to which these studies could detect responses to previous oil and gas activities or other anthropogenic stresses. In addition, the report fails to fully explore the potential for cumulative effects given the variety of other human activities carried out in this area.

As a result, I have serious concerns regarding the Appropriate Assessment's interpretation of existing studies. In several cases, the interpretation of the data is incorrect or important information sources are not discussed. In others, the Appropriate Assessment misrepresents studies that are cited to support key arguments. Importantly, the Appropriate Assessment fails to appreciate the uncertainty underlying certain data sets, which can result in very low statistical power to detect effects. As a consequence, statements suggesting that there is no evidence for a particular effect cannot be used as evidence that there is certainty (within the meaning of the Waddenzee judgement) that there is no effect.

In Annex I, I provide examples that illustrate and expand on these points. Please note that this list is not exhaustive, and I have not attempted to identify all points in the report that might be challenged on scientific grounds. Instead, I have selected examples that illustrate that the Appropriate Assessment does not currently represent the best available science, and highlight the risk that the Appropriate Assessment's conclusion would fail to stand up to expert review in the European Court.

Yours sincerely,

Professor Paul Thompson

Enclosures:

Annex I – Detailed comments on the Appropriate Assessment for Block 17/3
Annex II – CV/register of interests

cc – this document has been copied to colleagues and stakeholders who have approached me for my opinion on this Appropriate Assessment.

Annex I

SPECIFIC COMMENTS ON APPROPRIATE ASSESSMENT: 24TH OFFSHORE OIL AND GAS LICENSING ROUND – BLOCK 17/3 (INNER MORAY FIRTH)

1. Contrasting recommendations for the Moray Firth and Cardigan Bay Blocks

The underlying advice from SMRU for the Moray Firth and Cardigan Bay bottlenose dolphin populations is similar, but the two Appropriate Assessments make completely different recommendations; licensing being recommended only in the Moray Firth, on the basis of better knowledge of this population. The basis for the difference in these recommendations seems flawed on two grounds.

First, as detailed below, incomplete and uncertain data sets mean that neither the continued presence of dolphins in the Moray Firth, or a lack of obvious trend in abundance estimates, provide evidence of a lack of impact of previous oil and gas activity in the area.

Second, on the basis of existing ecological knowledge, the Moray Firth population is potentially ***more*** vulnerable than the Cardigan Bay population to any direct or cumulative effects of oil and gas activity. As outlined in the SMRU report, current abundance estimates are lower in the Moray Firth (129 [95% CI = 110-174] Wilson et al. 1999) than in Cardigan Bay (213 [95% CI = 183-279] Baines et al. 2002). Available distribution data also indicate that the Moray Firth population is more isolated from adjacent populations than the Cardigan Bay population, where there is potential interchange with nearby populations in SW Britain, Ireland, W. Scotland and offshore Atlantic waters. This difference is also supported by genetic data, which suggest that Moray Firth animals have lower genetic diversity than those found on the UK's west coast (Parsons et al. 2002).

2. Cumulative effects

The Appropriate Assessment states that:

> *"In carrying out this AA so as to determine whether it was possible to authorise the plan under Article (6)3, second sentence, the Department:*
>
> - *Considered whether, on the basis of the precautionary principle it could be concluded that the integrity of relevant European Sites would not be affected by the plan. This impact prediction involved a consideration of the cumulative and in-combination effects". (page 3)*

The Moray Firth supports a wide range of human activities which have the potential to affect the bottlenose dolphin population through a variety of mechanisms. As the Moray Firth SAC and its management procedures have been developed over the last few years, these potential impacts have been reviewed (eg. Curran et al. 1995; Nautilus 2001) and measures to mitigate or minimise impacts have been considered

in the SAC Management Plan. However, none of these documents have been considered in the Appropriate Assessment.

In particular, it is questionable whether the Appropriate Assessment can fully consider the cumulative effects of oil and gas activity on this population without careful consideration of the SAC Management Plan.

The Appropriate assessment also states that

> *"BERR is not aware of any projects which are likely to cause cumulative or synergistic effects that when taken in-combination with the activities discussed above would adversely affect the integrity of the relevant European Sites". (Page 13)*

This statement reflects both a lack of consideration of the SAC Management Scheme, and a lack of consultation with stakeholders. Either should have highlighted a range of current or proposed activities that have the potential to result in discharges or disturbance effects that should be considered in combination with the proposed oil and gas development (eg. Offshore renewables; current proposals for marinas and other coastal developments).

Crucially, the SMRU report states that *"An assessment of cumulative effects is dependent on knowledge of other plans or projects involving human activity, which is beyond the scope of this document" (page11).* Given this, the scientific basis underlying the Appropriate Assessment's conclusion that it is certain that there will be no cumulative effects is unclear and open to challenge.

3. Incorrect interpretation of data

> *"Over the last 15 years a significant amount of research has been carried out on the bottlenose dolphin population in the Moray Firth and there is now extensive knowledge of the size and distribution of the dolphin population within the SAC (mostly in the inner Moray Firth and along the south shore)." (Page 12)*
>
> *"In the localised areas of the European Sites designated for marine mammals, acoustic disturbance associated with seismic is intermittent and there is no evidence that cumulative effects of previous survey effort have been adverse. Despite considerable scientific effort, no casual link, or reasonable concern in relation to population viability has been found (see assessment in Appendix F)". (Page 12)*

Whilst there are good estimates of the size of the dolphin population, quantitative assessments of the population's distribution are constrained by patchy survey effort in both space and time. The difficulty of surveying even the 1000 km^2 of the SAC means that most work has been focussed in the inner Moray Firth and along the coastal fringe, with relatively little survey effort further offshore. Moreover, most surveys have been conducted in summer, and understanding of winter distribution

patterns (when abundance in the inner Moray Firth is known to decrease [Wilson et al. 1997]) is poor.

This can be illustrated by the surveys carried out by the University of Aberdeen's Lighthouse Field Station. Surveys designed to collect photo-identification data within the SAC's coastal fringe were carried out on over 500 days in 19 different years, with most of these focussing on the inner Moray Firth. In contrast, surveys designed specifically to determine distribution across the whole SAC (Bailey 2006), were conducted on just 27 days over 2 years. This means that survey effort in an area such as Block 17/3 totals only a few hours during this whole period. These data, together with anecdotal reports and opportunistic surveys (eg. Hastie et al. 2003), support the suggestion that the summer distribution of bottlenose dolphins within the SAC is indeed primarily coastal. However, there are too few quantitative data to confirm this with a high degree of certainty.

Information on the distribution of dolphins in the wider Moray Firth has only become available since 1989, over ten years after the initial development of oil and gas activities in this area. This lack of data prior to oil and gas developments means that it is impossible to assess whether the dolphins' distribution has changed in response to the extensive seismic survey activity that has subsequently occurred in the Moray Firth. Similarly, the following statement should not be interpreted as meaning that we can be certain that oil and gas activities have not affected dolphins in this area.

> *"The evidence shows that there has been no clear increase or decrease in the population over that period in an area where there has been extensive oil and gas activity, including seismic surveys". (page 12)*

This is because, first, annual abundance estimates for bottlenose dolphins have a high coefficient of variation, and the statistical power to detect trends is low (Gerrodette 1987). As shown in Wilson et al. (1999) and further developed in Thompson et al. (2000a), this means that it would take around 20 years to have a high (>95%) probability of detecting a 2% annual decline in the population. Consequently, the lack of a clear trend in annual abundance estimates as presented in Thompson et al. (2006) cannot be taken as certain evidence of no change in population size. Attempts to account for some of this uncertainty have included the development of a Bayesian state space model, which indicates that there is a slightly higher chance of this population declining than increasing (Corkrey et al. In Press). As Corkrey et al (In Press) explain, one caveat with this conclusion is that the range of this population has expanded during the study period (Wilson et al. 2004), and survival estimates may have been depressed due to emigration out of the main East Scotland study area. However, if this is the case, it could be argued that emigration itself could be a response to declines in environmental conditions within the Moray Firth.

Secondly, the photo-identification techniques underlying these analyses have been used to determine trends in the ***number*** of dolphins using a particular study area (eg. Fig 4 of the SMRU report, taken from Thompson et al. 2006). It remains possible that the population size remained fairly constant, but that each animal spent progressively less time within the SAC. For example, in 1990 a population of 130 dolphins might have spent most of their time within the SAC, but 15 years later a similar number of

dolphins may visit the area each year, but spend only a very small percentage of their time within the SAC. This could, for example, be a response to natural changes in environmental conditions or increased disturbance within the SAC; but in either case could represent a serious decline in the integrity of the SAC. Studies are now being developed to provide an estimate of "usage" of key areas for SAC Condition Monitoring. Currently, however, there are no data available to assess trends in the usage of the whole SAC (although it is clear that use of certain core-areas such as the Kessock Channel has declined during this period (Thompson et al 2000b).

4. Misrepresentation of supporting studies

> *"Available evidence (largely based on acoustic monitoring, (Clark & Charif, 1998, Swift et al 2002) does not suggest that broadscale marine mammal distribution patterns have been influenced by seismic activity to date." (Page 85)*

It is misleading to suggest that the Swift et al. (2002) study, on which I was an author, included studies that were able to assess whether or not broadscale marine distribution has been influenced by seismic activity. I am aware of no study worldwide that has attempted to do this. A comparison of dolphin distribution and abundance in the Moray Firth in relation to temporal and spatial patterns of seismic activity would be an important first step here, although the issues outlined above may constrain the inferences that could be made from analyses of existing data.

> *"A recent report produced by the Sea Mammal Research Unit (SMRU), University of St Andrews, summarises the research to date on marine mammals in the Moray Firth". (Page 85)*

This statement seriously misrepresents the SMRU report. Whilst the original scope of this report is not stated, it is disingenuous to suggest that it "summarises research to date on marine mammals in the Moray Firth". This is perhaps best illustrated by the 8 lines of text included on harbour seals; a population that has been the subject of >30 peer-reviewed papers and many other unpublished reports, EIAs etc.

5. Uncertainty underlying existing data sets

> *"While it is clear that seismic survey noise may be detectable by marine mammals, there is no evidence that noise arising from seismic surveys presents a risk to the viability of populations in UK waters; and specifically not within designated European Sites". (Page 12)*

> *"Although hydrocarbon production platforms are sources of semi-continuous noise, they have not been observed to result in adverse effects on marine mammal occurrence in the vicinity of an installation". (Page 12)*

> *"Mortality of seabirds has not been observed during extensive seismic operations in the North Sea and elsewhere". (Page 81)*

Whilst these statements may be correct, I question whether there have been any studies worldwide that could reliably detect such evidence. If there have, the results should be evaluated more critically, and information presented on the power of the statistical tests used.

6. Mitigation & Oil Spill Contingency Planning

The Appropriate Assessment discusses the important role of mitigation in reaching its recommendations. Mitigation measures are now well established for certain activities (eg. JNCC Seismic Survey Guidelines). However, it must be remembered, first, that the success of these measures remains untested and, second, that these measures are restricted to the more direct potential impacts of oil and gas activity. Mitigation measures for potential cumulative effects are more difficult to design and implement due to uncertainty about the nature of these impacts.

The Appropriate Assessment also highlights the importance of oil spill contingency planning.

> *"Following licensing, specific activities considered to present a risk to European Sites would be evaluated by the Department under mandatory contingency planning and Appropriate Assessment procedures. In all cases, rigorous spill prevention, response and other mitigation measures are implemented for offshore exploration and production". (Page 73)*

However, the Appropriate Assessment neglects to highlight the findings of studies that were carried out specifically to develop better measures for dealing with cetaceans into oil spill contingency plans (Gubbay & Earl 1999, 2000). Gubbay and Earl (1999) stress the importance of forward planning for adequately considering the protection of cetaceans in Oil Spill Contingency Plans. Nearly ten years later, there is limited evidence that these recommendations have been taken forward. Crucially, there have been no oil spill exercises that have tested and evaluated these recommendations in a scenario involving cetaceans in an SAC such as the Moray Firth. There needs to be considerable development and demonstration of best practice before spill response can be considered rigorous enough to ensure safe development of oil and gas activities within NATURA sites.

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ANNEX II

CURRICULUM VITAE PAUL MICHAEL THOMPSON

Current Position: Professor in Zoology and Director,
University of Aberdeen Lighthouse Field Station.

Profile

Key research and teaching interests are in the ecology and conservation of marine systems, with a particular focus on marine top predators. This research has focused on understanding how natural and anthropogenic environmental change influences the behaviour and dynamics of marine mammals and seabirds. Studies have been underpinned by the development and maintenance of long-term studies of harbour seal, bottlenose dolphin and fulmar populations in the North of Scotland, with comparative studies conducted at a range of overseas sites. A primary aim of the work has been to directly support regional conservation and management programmes, and through this to develop generic understanding and best practice case studies that provide insights into marine resource management issues elsewhere in the world. My research group currently contains 1 PDRA, 1 PGRA, 6 PhD students, a Research Technician and several seasonal staff. 19 previous post-graduate research students have all successfully completed their thesis, and most have continued in related scientific work in the EU and North America.

Publications >90 peer-reviewed journal articles

Key External Appointments (since 2000):

- 2005 - **Associate Editor**, *Journal of Applied Ecology*
- 2004 - Committee of Scientific Advisors for the **Society for Marine Mammalogy**
- 2000 – Scientific Advisor to the **Moray Firth SAC Management Group**
- 1991- Member of the **IUCN** Seal Specialist Group.
- 2002 - 2007. Council Member, **Scottish Association of Marine Science**
- 1993 – 2007. Member of **NERC Special Committee on Seals**

Funding Sources (since 2000)

Scottish Government, Knowledge Transfer Partnerships, Scottish Water Solutions, Scottish Natural Heritage, European Union, Talisman Energy (UK) Ltd, The Leverhulme Trust, Atlantic Frontier Environmental Network, NERC, Whale & Dolphin Conservation Society, Chevron-Texaco, Ross & Cromarty Enterprise, Cromarty Arts Trust, HDH Wills Trust, University of Aberdeen Development Trust, The Royal Society, International Water Ltd., Mammals Trust UK.

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12th March 2008

Dear Sir/Madam

Comments on Appropriate Assessment: 24th Offshore Oil and Gas Licensing Round - Block 17/3 (Inner Moray Firth)

Thank you for providing Scottish Natural Heritage with the opportunity to comment on this appropriate assessment.

SNH understands that the purpose of this consultation is to invite comments on the appropriate assessment undertaken by the Department for Business, Enterprise and Regulatory Reform (BERR) for the licensing of block 17/3 in the Inner Moray Firth. It is not a consultation on a licence application for block 17/3. Should BERR decide to offer block 17/3 for license in the future, SNH understands that it would be given the opportunity to comment on any licence application and associated proposed developments at that time. If this is not the case then SNH would wish to be consulted further.

SNH agrees with the appraisal that there is likely to be a significant effect on a number of the SACs and SPAs identified, but on the basis of the appropriate assessment considers that the effect on the integrity of these sites is currently unknown. In particular, the appropriate assessment:

- **does not cover all SACs and SPAs and their interest features;**
- **does not focus on the conservation objectives of the SACs and SPAs;**
- **does not take the current condition of interest features into account;**
- **does not adequately assess all activities likely to be associated with exploration;**
- **concludes no adverse effect on integrity without demonstrating that the evidence is available to reach that conclusion; and**
- **does not address likely indirect or cumulative effects.**

SNH's view is that, as a consequence, BERR is required to revise the appropriate assessment of the implications of the proposal for these sites in view of the sites' conservation objectives for their qualifying features. Until this work is undertaken it will not be possible to ascertain with certainty that the proposals will not adversely affect the integrity of these designated sites.

General comments on the AA are provided below. SNH's detailed comments have been divided into sections which focus on: the scope of the AA; sections 1 to 3 of the AA containing information on the background to the AA and the process used; the Moray Firth SAC; the Dornoch Firth SAC; Special Protection Areas; and future production activity. Where appropriate, annexes have been used to provide more detailed comment.

General comments on the Appropriate Assessment

The current AA consists of both an appraisal of whether an AA is required for any specific site (i.e. determination of likely significant effect) and an AA, which has led to the production of a document with a very broad focus. The appraisal has taken the approach of attempting to include all SACs and SPAs with a marine or coastal location from Shetland to the Tay for consideration of likely significant effects (though note comments regarding significant omissions). Similarly, the appraisal has attempted to consider all exploration and production related activities associated with licensing.

The AA proper should include the subset of those sites where likely significant effect has been identified and an assessment on them of the effects of the activities which might follow from the issue of the licence in question. There is currently a mismatch between the sites/activities for which likely significant effect has been identified in the tables in the annexes and further consideration of effects in the text as part of the AA.

The conservation objectives are listed in the annexes to the AA but not subsequently used as the basis for ascertaining that there will not be an adverse effect on integrity of any site. Using conservation objectives in this way is essential for providing the focus of an AA.

Similarly, the Waddenzee judgement is referred to, but the wording used in the AA in a number of sections does not give confidence that the degree of certainty required by this judgement has been taken into account. This may be due to the wording used in some instances, but in many cases it does appear that the supporting evidence is not available and there is genuine uncertainty of effect.

The AA draws the conclusion in relation to every feature of every SAC and SPA where there is considered likely to be a significant effect that there will be no adverse effect on integrity, but it is difficult to find the evidence in the AA upon which these conclusions are based. This is partly because of a lack of quantitative analysis in the AA and also, a lack of references to sources of evidence used to substantiate the analysis. It also appears in some parts of the AA that there is uncertainty over the effects of some of the activities on qualifying interest features which would mean that the conclusion of no adverse effect on site integrity could not be drawn with scientific certainty.

The consideration of in-combination effects and mitigation measures are fairly brief. SNH recognises that without further details of the precise activities including locations and timings, these aspects are difficult to assess. However, the AA should clearly set out the cumulative effects which it can address and those which can only be assessed through project-specific AA. Similarly, potential indirect effects on features dependent on the inner Moray Firth deserve further consideration.

In summary, the document provides a good starting point from which an AA can be undertaken, but requires to address sites and features omitted, as well as providing greater focus, more in-depth analysis and reference to relevant evidence to ensure that the conclusions of the AA can be drawn with the certainty required by the Waddenzee judgement. It is not clear to SNH whether the evidence exists to support the conclusion of no adverse effects on site integrity from the licensing of block 17/3 for those SACs and SPAs considered, and the sites and features omitted have not been addressed at all.

Scope of the Appropriate Assessment

The AA takes as its starting point all SACs and SPAs with a marine or coastal qualifying interests between the Firth of Tay and Shetland. Whilst SNH believes that it is reasonable to take this approach in determining likely significant effect (and hence whether an appropriate assessment of the proposal is required), the focus of the AA itself should be only on those sites where it is considered that there is likely to be a significant effect.

At present there are inconsistencies between the information provided in the appendices on the sites and their features, and the sites which are then considered further in the AA. In addition, it is not always clear as to why 'likely significant effect' has been concluded for some sites and qualifying interest features and not others. Annex 1 provides detailed comments on Appendices A, B and C.

The AA attempts to consider all activities likely to be associated with both exploration and production activity. SNH's view is that the AA would be better to consider all activities likely to be associated with exploration (principally seismic survey and drilling of exploration and appraisal wells) and that there are too many uncertainties likely to be associated with trying to predict which production-related activities might take place and where, for these to be satisfactorily assessed at this stage. This does not mean that SNH has no concerns about the potential effects of production-related activities (see *Future production activity* below).

Summary, Introduction & Background and Process (sections 1-3)

It is SNH's understanding that the appropriate assessment should be carried out under the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (as amended). It should not be carried out under the Offshore Marine Conservation (Natural Habitats &c.) Regulations 2007 because these specifically exclude application to '*the giving of any Petroleum Act approval, Petroleum Act authorisation, Petroleum Act consent, or Petroleum Act licence*' (see regulation 25(6)(c)). Furthermore, it is SNH's understanding that the assessment should also be carried out under the Conservation (Natural Habitats &c) Regulations 1994 (as amended in Scotland) (hereinafter referred to as the Habitats Regulations). In the event that the Habitats Regulations do not apply, SNH's comments should be interpreted in terms of meeting the requirements of the Habitats Directive as clarified by the Waddenzee judgement.

For interpretation of terminology we suggest you use the EC Article 6 guidance (EC 2000) . If more specific reference is required, the relevant guidance for use in Scotland reflecting Scots law (including territorial waters out to 12nm) is Revised Guidance Updating Scottish Office Circular 6/1995 (SEERAD June 2000) rather than those quoted in the AA for the following reasons:

- Planning and Policy Statement 9 was produced by ODPM and only applies within England as its introduction makes clear.
- English Nature Habitats Regulations Guidance Note (1997) is not linked to Scots law and associated guidance. While much of the content may be analogous to Scottish guidance it does not cover the numerous amendments made to the Habitats Regulations since 1997.

The tests relating to consideration of development proposals in relation to SACs and SPAs are very specific. The wording that should be used is set out below:

- determine whether the proposal is directly connected with or necessary to site management for conservation; and, if not,
- determine whether the proposal is likely to have a significant effect on the site either individually or in combination with other plans or projects; and, if so, then
- make an appropriate assessment of the implications (of the proposal) for the site in view of that site's conservation objectives.

In addition, the purpose of the AA is to 'ascertain that the plan or project will not adversely affect the integrity' of any Natura site (see Regulation 48 of the Habitats Regulations).
SNH's view is that the wording used in the AA in a number of places means that the tests within the AA are not being applied as required:

- There are references (pages 1 & 3) to assessing whether licences issued 'will have any adverse effects on the integrity of Natura 2000 sites'. This effectively reverses the burden of proof. The requirement is to ascertain that there will *not* be an adverse effect on integrity.
- There are references (pages 1 & 7) to *minimising* adverse effects. Minimising adverse effects would mean that some adverse effects would still occur and therefore the requirements of the Habitats Directive would not be met. The requirement is not to adversely affect the integrity of any site.
- There are references to application of the precautionary principle throughout this section, but the precautionary principle is inbuilt to the AA process and therefore there is no need to invoke it separately.
- There are references (pages 6) to considering 'potential for a significant effect'. The test is to consider whether there is 'likely to be a significant effect'.
- There are references (pages 6 & 7) to being 'reasonably foreseeable'. This is acceptable in relation to determining the types and levels of activities that may be undertaken within block 17/3, but not in relation to adverse effects on integrity where it must be ascertained that adverse effects will not result.

The discussion of site integrity (page 6) states that 'an adverse effect on integrity is likely to be one which prevents the site from making the same contribution to favourable conservation status as it did at the time of its designation'. This statement from EN guidance is not appropriate to this context . In Scotland, Scottish Executive guidance, Circular 6/95 updated 2000 should be used instead. It is essential that the AA be carried out "in view of the conservation objectives for the site" (as required by Article 6.3). This is particularly important with respect to the bottlenose dolphins as a feature of the Moray Firth SAC. The bottlenose dolphin population was not considered to be favourable at the time of designation and so the conservation objectives for the bottlenose dolphin feature relate not just to maintenance, but also to restoration (i.e. ensuring that the relevant attributes are '*established* then maintained in the long term').

Consideration of the Moray Firth Special Area of Conservation

The two qualifying features of the Moray Firth Special Area of Conservation are bottlenose dolphins and 'sandbanks which are submerged by seawater all the time'. Sandbanks are listed as a 'secondary' feature in the AA. Whilst it is correct that the bottlenose dolphins were the primary reason for site selection, the status of the sandbank feature in terms of the way in which it should be considered within an AA should be no different from that of the bottlenose dolphins. The current wording appears to suggest that sandbanks are not being subjected to the same level of consideration.

The bottlenose dolphins as a feature of the Moray Firth SAC were not considered to be favourable at the time of designation and, following assessment as part of SNH's programme of Site Condition Monitoring this interest was assessed as unfavourable (recovering) in the first reporting cycle. The detailed conclusions of the assessment are included at annex 2. This should provide useful background information to the appropriate assessment.

SNH would also recommend the Moray Firth SAC Management Scheme as a useful source of reference, in which many of the activities likely to affect the bottlenose dolphin population and 'sandbanks which are slightly submerged by sea water all the time' have been considered. The primary aim of the management scheme is to achieve the conservation site's objectives and it should therefore be particularly useful for undertaking an AA, the purpose of which is to ascertain the effect on site integrity as defined by the conservation objectives. Given its detailed

consideration of the range of activities likely to affect the features of the Moray Firth SAC, the Management Scheme should also help in considering likely in-combination effects.

Section F4 of the AA contains the most detailed assessment of the effects on bottlenose dolphins as a feature of the Moray Firth SAC. The focus of this section is on potential acoustic effects. SNH has the following comments to make on section F4:

- The SMRU report does not 'summarise the research to date' on this population, it provides a general assessment of the potential effects of oil and gas development on marine mammals, with a summary of ecological information.
- Although there is 'no clear trend apparent in the numbers of dolphins using the inner SAC' from the reference quoted, more recent work suggests that there is a slightly higher chance of this population decreasing than increasing (Corkrey et al. In Press.).
- Related to the above, studies in the inner Moray Firth have shown that the use of certain core areas of the SAC, such as the Kessock Channel, has declined (Thompson et al 2000).
- The following sentence does not meet the requirements of the Habitats Directive in terms of ascertaining that there will not be an adverse effect on site integrity with the certainty required by the Waddenzee judgement: 'The exact effects which this may have are unknown, although available evidence suggests that significant effects at a population level are unlikely.'
- Much of this section focuses on *damage* that might be caused to small odontocetes, whilst the focus of the AA should be on the conservation objectives, which includes 'no significant disturbance of the species'. This is important because the AA discusses the use of mitigation measures to *minimise* disturbance, when the requirement is to ensure that there will not be any significant disturbance.
- There is no quantification of source levels, frequencies or distances over which sound is likely to travel in relation to bottlenose dolphins using the SAC and the effects that this may have on site integrity as defined by the conservation objectives.
- Our knowledge of the way in which dolphins use the SAC is focussed mainly on their use of core areas during the summer. There is very little information on distribution in the northern part of the SAC (including within block 17/3) and on winter distribution across the whole SAC. The uncertainties in statements such as 'given our current knowledge of the distribution of the dolphins within the SAC' need to better recognise the limitations of this knowledge.
- There is no consideration of the effects of seismic survey on the prey species of bottlenose dolphins in the Moray Firth.

SNH also notes the response to this consultation submitted by Professor Paul Thompson from the University of Aberdeen on 12 February 2008. In particular, SNH supports the comments made in sections 3, 4 and 5 of Annex 1 to his letter relating to: incorrect interpretation of data; misrepresentation of supporting studies; and uncertainty underlying existing data sets. SNH recommends that these issues are given further consideration to ensure that the AA meets the requirements of the Habitats Directive.

The AA should also consider other exploration-related activity, including:

- The likely effects of drilling exploration and appraisal wells within the SAC, including the effects of chemicals associated with the drilling process.
- The likely risk of an oil spill resulting from drilling of exploration and appriasal wells and effects on the bottlenose dolphin population.
- The likely effects of traffic/vehicular activity associated with exploration.

The assessment states that 'sandbanks which are slightly submerged by sea water all the time' are not present in block 17/3 as a feature of the Moray Firth SAC. This interpretation needs to be checked. Note that prior to 2007 'sandbanks' were interpreted as being features largely present in water depths of 20m or less. The European Commission has more recently (July 07) slightly amended the definition of this habitat to include areas below 20m in certain circumstances. SNH would be happy to discuss this further.

Consideration of the Dornoch Firth and Morrich More Special Area of Conservation

The common seal population as a feature of the Dornoch Firth and Morrich More SAC was considered to be unfavourable (recovering) in the first reporting cycle. In the first cycle counts of common seals were undertaken during the moulting season in three separate years. Counts varied from 405 seals in 2000, 220 seals in 2002 and 290 seals in 2003, although it should be noted that the survey in 2002 was undertaken more than 2 hours after low tide and is considered to be an undercount. The decline in the number of common seals within the SAC led to the development of the Moray Firth Seal Management Plan, which is underpinned by a Conservation Order under the Conservation of Seals Act. The conclusions of SNH's Site Condition Monitoring are included in Annex 3 and provide further information on site management.

Also of relevance is the status of the wider common seal population. The following is an extract from the advice produced by the Scientific Committee on Seals in 2007:

Results from surveys carried out in 2006 found a decline in apparent abundance in Orkney and Shetland of 42% (95% confidence intervals 10%-62%) compared with 2001. A partial survey of the Outer Hebrides did not show a similar decline. However, results from all three areas are consistent with a gradual decline in moult counts since the late 1990s. The data suggest that these areas may be undergoing a major population decline. Surveys of the east coast populations in 2006 also showed continuing declines in both the Tay and the Wash populations (SCOS-BP 07/3) and no recovery in the Moray Firth. This is in contrast to the apparent rapid growth in populations in the nearest European population in the Wadden Sea.

Section 5.4 *Conclusions for European sites vulnerable to acoustic disturbance* does not mention common seals as a qualifying feature of the Dornoch Firth and Morrich More SAC. The AA recognises that any seismic survey likely to be undertaken within block 17/3 is likely to be audible to seals 'within some submerged areas of the SAC and over a large proportion of the Moray Firth'. It then goes on to state that 'the exact effects of this are unknown, although available evidence suggests that significant effects at a population level are unlikely'. These statements do not meet the requirements of the Habitats Directive in that they relate consideration of effects to 'the population level' rather than to the relevant conservation objectives and they conclude that significant effects are 'unlikely' rather than ascertaining whether or not there will be an adverse effect on integrity. Section F4 recognises that common seals associated with the Dornoch Firth SAC 'are more sensitive than small cetaceans to low frequency sound and continued seismic activity in favoured foraging sites could therefore potentially result in animals being excluded from important areas'. Yet, without identifying foraging areas used by seals associated with the SAC and quantifying the effect, goes on to conclude that activity is 'unlikely to impact foraging and therefore the integrity of the site'.

SNH's advice is that in order to address these issues, the following factors should be considered/identified as part of the AA:

- The distance between likely seismic activity and the SAC.
- The distance between likely seismic activity and feeding areas within the Moray Firth known to be used by common seals which form part of the SAC feature.
- The levels of sound likely to be received by seals using the SAC and using feeding areas, as well as levels likely to be received by those travelling between the SAC and feeding areas.
- The known effects of these levels of sound on common seals.
- The known effects of these levels of sound on prey species.
- The uncertainties in making the assessment of seismic survey on common seals.

It should be noted that the AA should focus on these sound frequencies likely to be detected by/to cause disturbance to common seals and their main prey species in the Moray Firth. The general comments on mitigation measures made above apply here to the suggested use of the JNCC Guidelines.

Consideration of Special Protection Areas

The general comments made about the appropriate assessment apply. The main issue of concern in the exploration phase relates to seismic survey and associated disturbance by vessels and other transport and there is very little detail provided on this.
The appropriate assessment would need to consider and quantify where possible the effect on birds (particularly diving species) and important prey species in the Moray Firth. Uncertainties in undertaking this assessment should be highlighted. The potential for adverse effects resulting from accidental spillages during the drilling of exploration and appraisal wells should also be assessed.

The list of SPAs (and birds related to these) which could be affected needs to be critically considered. In particular greater emphasis should be given on the use of water areas by SPA birds for feeding and other activities. While much of this takes place close to the SPAs, many species use waters over a considerable distance from their breeding sites - terns and gannets for example; hence origins of birds in the Moray Firth area cannot be assumed to be local. Existing data will be limited, possibly necessitating contemporary work. Some targeted work is already ongoing i.e. work led by JNCC is in train to identify the most important feeding areas for red-throated diver (see below).

Some species which breed on inland SPAs also feed at sea. In particular, red-throated divers and skuas (great and Arctic) should be considered. In relation to this, two sites have been omitted: Caithness and Sutherland Peatlands for red-throated diver; and Ronas Hill – North Roe and Tingon for great skua. A broadscale database of seabird distribution (European Seabirds at Sea - ESAS) already exists under the auspices of JNCC who is currently addressing the analysis of the UK dataset.

Thirty one coastal SPAs in Scotland have been identified for marine extensions of up to 4 km seaward. Many of these are in the area of this appraisal but have not been specifically identified (see Annex 4 for details).

In addition, JNCC is currently also carrying out work with a view to identifying any additional areas which would qualify as most suitable territories for non- breeding aggregations of birds. A number of locations, or search areas, around the coasts of Scotland are known to be potentially important for non-breeding waterfowl and seabirds. The greater Moray Firth is known to be important for these, holding large populations of wintering waterbirds as well as providing important feeding areas throughout the year. There are other known concentrations in the Pentland Firth/South Orkney Islands. While no specific sites have been yet identified within the area affected by this proposal, the potential for such sites should be noted.

Although SNH's advice in relation to the scope of the assessment is that the focus should be on the exploration phase, the potential risks and effects which may be caused as a result of oil spills are SNH's major concern in relation to adverse effects on integrity of Special Protection Areas in the Moray Firth and the wider area. This is discussed further below.

Future production activity within block 17/3

There are a number of activities likely to be associated with future production activity in block 17/3 which SNH is raising as issues which would require careful consideration as part of any project-specific AA. This includes undertaking seismic survey, oil spills and contingency planning, pipelaying activity, vessel activity and decommissioning.

Seismic survey during the exploration phase is an activity limited in duration, however, SNH understands that during the production phase additional seismic work is undertaken, principally to determine the condition of the reservoir. The effects of this on the bottlenose dolphin population associated with the Moray Firth SAC, the common seal population associated with the Dornoch Firth and Morrich More SAC and on prey species of dolphins, seals and of birds associated with SPAs that are likely to be feeding in the wider area would need to be assessed.

The likely effects of oil spills associated with production in block 17/3 should also be assessed. This should taken into consideration the risk of an oil spill occurring, the type of oil, methods for dealing with oil spills and their effectiveness in relation to the features of the designated sites likely to be affected. This should include the likely effects of the use of dispersants on the sandbanks feature of the Moray Firth SAC. Note that SNH would expect an appropriate assessment to be undertaken on any contingency plans that were subsequently developed.

Pipelaying using 'anchor handling' or dynamic positioning vessel would also need to be assessed. The former is more likely to be an issue in relation to the 'sandbanks' features of the Moray Firth SAC whilst the latter more likely for the bottlenose dolphin feature.

Related to all of the above is the level of boat and other vehicular traffic (e.g. helicopters) likely to be associated with production activity in block 17/3 and the effects that this may have on features of designated sites.

Any assessment of production activity should also include an assessment of the effects of decommissioning any seabed infrastructure. This should include an assessment of the effects of the use of explosives on features of designated sites and their prey.

Please also note that whilst the AA considers the integrity of sites, it does not consider the effect on European Protected Species, which would also need to be done as part of any licence application process.

Conclusion

SNH's view is that BERR is required to revise the appropriate assessment of the implications of the proposal for the designated sites discussed above in view of the sites' conservation objectives for their qualifying features. Until this work is undertaken it will not be possible to ascertain with certainty that the proposals will not adversely affect the integrity of these designated sites.

Please contact Katie Gillham on 01463 238 481 or katie.gillham@snh.gov.uk if you have any queries relating to the advice contained in this letter.

Yours sincerely

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Annex 1 Comments on Appendices A, B & C of the Appropriate Assessment

There are a number of relevant European sites omitted from Appendix A, including all of the SACs in the area of search between the Tay and Shetland in which salmon are a qualifying interest, and most of those which support the vulnerable freshwater pearl mussel which is dependant on migratory salmonid fish. This includes the River Thurso SAC, River Naver SAC, Berriedale and Langwell water SAC, River Evelix SAC, River Oykel SAC, River Spey SAC, River Moriston SAC, River Dee SAC, River South Esk SAC and the River Tay SAC. Inland SPA sites such as Caithness and Sutherland Peatlands and Orkney Mainland Moors have been excluded from consideration but have qualifying interests that are water birds that could winter around the coast. Sites such as peatlands which have breeding red-throated divers may be particularly affected since these birds feed at sea.

The use of 'potential effects' in the title of Appendix B is confusing. It appears that these tables are being used to determine the test of likely significant effect. If so, the title should reflect this. The sites listed in the paragraph above that have to date been omitted should be included as part of the determination of likely significant effect.

Whilst it is correct that some features are identified as having been the primary reason for SAC site selection, it does not follow that the other qualifying features are therefore in some way 'secondary'. The use of the term 'secondary' also seems to imply some kind of lesser status in relation to undertaking the appropriate assessment and it is important to ensure that this is not the case.

The conservation objectives for species within SACs in Appendix C are not all quite right. For example, for the Dornoch Firth and Morrich More SAC the conservation objective for seals is given as 'To ensure for the qualifying species that the following are established then maintained in the long term'. This is important because for species, such as the bottlenose dolphin features of the Moray Firth SAC, the conservation objective is as stated above because the feature was not considered to be in a favourable condition at the time of designation. For other species the conservation objective should be 'To ensure for the qualifying species that the following are maintained in the long term.'

Details of the qualifying interests and relevant conservation objectives for sites in Scotland are available through SiteLink part of SNH's web-based information service SNHi (www.snh.org.uk/snhi).

Annex 2 Bottlenose dolphin SCM results for the Moray Firth SAC

Annual estimates of the number of dolphins using the SAC show considerable variability from year to year, but the overall trend suggest a reduction in the number of dolphins observed in the late 1990s followed by a slight increase in the years 2000-2004. These observations are complicated by the identification of two distinct bottlenose dolphin social groups, one of which may have modified its range, resulting in the observed change in use of the SAC. It is presently unclear whether recent changes in observed dolphin numbers and the usage of the SAC are due to long-term large scale environmental variability (change) or local anthropogenic effects. Moreover, broader natural or human-influenced factors, such as the presence or absence of food supplies may also influence dolphin distribution patterns over the short, medium and long term.

It is also important to note that the current condition assessment is wholly based on survey observations collected in the summer months and largely concentrated on core areas constituting approximately 30% of the entire SAC area. There is very little information for the remaining 70% of the site.

Although there are a range of confounding factors, the analysis and modelling of population data covering a period between 1990 to 1998 indicate a downward trend in the observed numbers of bottlenose dolphins in the Moray Firth SAC. However, annual observations between 2000 and 2004 suggest a subsequent small increase and possible stabilisation of numbers.

While it is recognised that this trend may be influenced by sampling limitations and social group migration, it should also be noted that the current estimated population size remains below previous estimates and may still represent a level at which the population remains vulnerable. An optimum population size for a viable and stable population has yet to be established. For these reasons the present condition of the bottlenose dolphin "feature" is judged as Unfavourable (recovering) on a precautionary basis, despite the addressable monitoring targets having been superficially met .

The attributes and targets presented here are still under development and may be reviewed and revised at a later stage to reflect additional collected data and to incorporate future advances in statistical analysis and modelling techniques.

Management Measures are described in the Moray Firth SAC Management Scheme and components such as the Dolphin Space Programme. These are regularly reviewed.

At present there is no conclusive evidence for any anthropogenic impacts on the dolphin population, but there are concerns for the following:

Disturbance/boat traffic - It is known that cetacean behavioural changes may occur in the presence of boats. Studies within the Moray Firth have detected effects, but the relationship between short-term behavioural responses and long-term impacts is not known.

Water quality/contamination - There are known small inputs of organic contaminants from local industries and sewage outlets, together with point source discharges of trace metals and PCBs. In addition, dredging of navigation channels and the presence of a dump site contribute to increased levels of contaminants in the water column. At present, the levels of organic and metal contaminants found in bottlenose dolphins are comparable to those found in other cetacean species throughout Scotland.

Fishing activity - Fishing may be directly implicated in the reduction of bottlenose dolphin food resources, while entanglement in fishing gear will cause injury or death. To date, there have been no substantiated reports for the latter, and data to allow an assessment of the former are not yet available.

These are currently being monitored at a local level and a review of their overall impacts will be assessed in future monitoring reports. Other potential impacts are discussed in Curran et al. (1996).

Annex 3 Common seal SCM results for the Dornoch Firth and Morrich More SAC

The common seal feature of the Dornoch Firth and Morrich More SAC is considered to be unfavourable recovering. This is because the number of common seals within the SAC during the moulting season has declined over the reporting cycle, combined with the fact that the number of seals within the area adjacent to the SAC has not increased correspondingly. The distribution of seals within the SAC was considered stable in that there were seals present in each section of the site, but see comments in paragraph below relating to this. The extent and distribution of suitable haul-out sites within the SAC is considered to be stable. In addition, a management plan is now in place that is addressing the main reasons behind the decline in seal numbers during the moulting season within the SAC.

The main activity that is believed to have affected the number of common seals within the Dornoch Firth and Morrich More SAC is shooting of seals by the District Salmon Fisheries Boards to protect salmon and sea trout fisheries. Between 1994-2002 the DSFB shot an average of 300 common seals a year over the wider Moray Firth, although much of the shooting was concentrated on the Inner Firth. Additional common seals were also shot by netsmen. Numbers of moulting seals along the north coast of the Moray Firth increased from 110 to 241 between 1993 and 1997. Along the south coast of the Moray Firth they increased from 58 in 1994 to 111 in 2000. It may be that individuals that were not shot were sufficiently disturbed by the activity that they chose to move to new haul-out sites or, possibly, that new individuals may have been recruiting to the adult population in the wider Moray Firth. It should be noted that during this reporting cycle common seals have been reported breeding in parts of the Inner Firth that were not previously used e.g. Loch Fleet.

In response to concerns over the effect that an outbreak of Phocine Distemper Virus might have, combined with concerns over the effect that shooting was having on the common seals within the Moray Firth and the Dornoch Firth SAC, the Scottish Executive put a Conservation Order under the Conservation of Seals Act 1970 in place from September 2002 for a period of two years. This effectively extended the close seasons for common and grey seals within the Moray Firth to year round. (Common seals were also covered by the Conservation order throughout the rest of Scotland.) Therefore no shooting by the DSFB could take place except under licence from the Scottish Executive.

In response to these concerns, the Association of District Salmon Fisheries Boards has worked with the Scottish Executive, the Scottish Society for the Prevention of Cruelty to Animals, Fisheries Research Services, the Sea Mammal Research Unit and Scottish Natural Heritage to develop the Moray Firth Seal Management Plan (the Plan). A new Conservation Order was put in place in September 2004 for the Moray Firth to extend the close season for both grey and common seals year round. A licence was issued on 15 April 2005 by the Scottish Executive under the Conservation of Seals Act to manage seals as described in the Plan. Effectively the Plan restricts shooting and other methods of predator control to tightly defined management zones around the main salmon rivers within the Moray Firth. A Potential Biological Removal calculation was carried out by SMRU to assess the number of common seals that might be able to be removed without having an adverse impact on the seal population within the wider Moray Firth and the Dornoch Firth and Morrich More SAC in particular. Each DSFB now has a maximum number of seals that may be shot to prevent damage to the fisheries. The combined total for the whole Moray Firth (50 common seals) has been set at a level below the level suggested might be taken by the PBR calculation. The Plan is being underpinned by a research project to help improve our understanding of the interaction between seals and salmon in the Moray Firth. The project is being seen as a pilot which, if successful, may be applied to other areas throughout Scotland.

Annex 4 Extensions to coastal Special Protection Areas

Colonies	Type	Regional Sea	Extension proposed on current data	Species involved in extension											
				Guillemot	**Manx** shearwater	Razorbill	Puffin	Gannet	Fulmar	Shag	Sandwich tern	Roseate tern	Common tern	Arctic tern	Little tern
Marwick Head	Seabird assemblage	Scottish Continental Shelf	**1km**	*											
Buchan Ness to Collieston	Seabird assemblage	Northern North Sea	2km	*					*	*					
Calf of Eday	Seabird assemblage	Scottish Continental Shelf	**2km**	*					*						
Copinsay	Seabird assemblage	Scottish Continental Shelf	**2km**	*					*						
East Caithness Cliffs	Seabird assemblage	Northern North Sea	2km	*		*	*		*	*					
Fair Isle	Seabird assemblage/tern	Northern North Sea	2km	*		*	*		*	*				*	
Fetlar	Seabird assemblage/tern	Northern North Sea	2km						*					*	
Foula	Seabird assemblage/tern/petrel	Scottish Continental Shelf	2km	*		*	*		*	*					*
Fowlsheugh	Seabird assemblage	Northern North Sea	**2km**	*		*			*						
Hermaness, Saxa Vord & Valla Field	Seabird assemblage	Scottish Continental Shelf	2km	*			*	*	*	*					
Hoy	Seabird assemblage	Scottish Continental Shelf	**2km**	*			*		*						
North Caithness Cliffs	Seabird assemblage	Scottish Continental Shelf	**2km**	*		*	*		*						
Noss	Seabird assemblage	Northern North Sea	**2km**	*			*	*	*						
Rousay	Seabird assemblage/tern	Scottish Continental Shelf	2km	*					*					*	
Sule Skerry & Sule Stack	Seabird assemblage/petrel	Scottish Continental Shelf	2km	*			*	*		*					
Sumburgh Head	Seabird assemblage/tern	Scottish Continental Shelf	2km	*					*					*	
Troup Head	Seabird assemblage	Northern North Sea	**2km**	*		*			*						
West Westray	Seabird assemblage	Scottish Continental Shelf	**2km**	*		*			*						

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Thursday 13th March 2008

Dear Kevin

Comment on BERR Appropriate Assessment: Block 17/3, Inner Moray Firth (and general comments on Blocks 106/30, 107/21 and 107/22, Cardigan Bay)

We appreciate BERR undertaking these Appropriate Assessments and welcome the opportunity to provide comments to the public comment period.

SUMMARY
The undersigned conservation organisations reject the conclusion of the Appropriate Assessment for the Moray Firth bottlenose dolphin Special Area of Conservation (SAC). We believe that both Appropriate Assessments for the Moray Firth and Cardigan Bay fail to meet the tests set under the EU Habitats Directive (92/43/EEC) and fail to demonstrate that there will be no adverse impact on the integrity of relevant Natura 2000 interests, or to satisfy the site's Conservation Objectives. These include the following:

- Failure to make accurate and full use of 'the best scientific knowledge in the field' as required, including acknowledgement of significant knowledge gaps

- Failure to take adequate account of cumulative and in-combination effects

- Failure to support the conclusion that mitigation measures can exclude adverse impacts to site integrity

- Resulting failure to reach the correct conclusion under the terms of the EU Habitats Directive

- Failure to consider all the necessary licensing blocks to meet EU Habitats Directive obligations

Based on these failings and the requirements after the European Court of Justice Waddenzee judgment clarifying the need for certainty (paragraph 61), we believe that the proposal to allow licensing of oil and gas exploration in the Moray Firth SAC should not be authorised on the basis of this Appropriate Assessment. Our underlying reasons are detailed in this response.

Under the requirements set out by the Habitats Directive, the Appropriate Assessments have not ascertained that they will not adversely affect the integrity of the sites in either the Moray Firth or Cardigan Bay. As the scientific evidence provided in the Appropriate Assessments of the impacts of proposals on the bottlenose dolphin populations is flawed, the basis upon which the government has proposed the decision to allow oil and gas exploration and development in the Moray Firth SAC is also flawed.

The European Court of Justice Waddenzee judgment has clarified the need for certainty as follows "…all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities, taking account of the appropriate assessment of the implications of … for the site concerned in the light of the site's conservation objectives, are to authorise such an activity **only if they have made certain that it will not adversely affect the integrity of that site**. That is the case where **no reasonable scientific doubt remains** as to the absence of such effects."

The integrity of the site applies to the bottlenose dolphins and is directly linked to the conservation objectives for the site. There is a direct link to the obligation in Article 6.2 of the EU Habitats Directive to avoid deterioration of natural habitats and significant disturbance of species. If the conservation objectives cannot be met, then the integrity of the site would be adversely affected. Again this view is supported by the ECJ Waddenzee judgment. However, after full review of the AA's and supporting documents we are seriously concerned that the Conservation Objectives are not discussed in any detail in the Appropriate Assessments and the Special Area of Conservation (SAC) Management Plans are not even mentioned.

Further, the Appropriate Assessment does not consider critical knowledge gaps on the effects of oil and gas developments or how different factors might interact together (i.e.

cumulative impacts) to affect animals and habitat. Indeed, cumulative impacts are not reviewed at all in the Appended scientific report from the Sea Mammal Research Unit.

We believe that the Appropriate Assessment has not applied the precautionary principle or adequately assessed impact predictions, failings repeatedly noted in the SEA Environmental Reports. Mitigation measures are relied upon in the Appropriate Assessment but this is very vague and it is not possible to determine exactly what methods are being referred to. Hence, we cannot properly comment on what is proposed but note, that there are no adequate methods available to protect dolphins from the loud noise and other threats associated with oil and gas activities.

Research on this population of bottlenose dolphins has been undertaken by the Lighthouse Field Station at the University of Aberdeen since 1989. They have a contract requiring ongoing monitoring of the population to determine the Favourable Conservation Status of the population under the EU Habitats Directive. That the University were not consulted in developing the Moray Firth Appropriate Assessment is unacceptable. We draw your attention to the letter submitted by Professor Paul Thompson highlighting some of the serious scientific flaws and data gaps in this Appropriate Assessment.

The Appropriate Assessment does not represent the best science available and does not, and cannot, clearly demonstrate that significant disturbance will not occur to the populations of bottlenose dolphins, *Tursiops truncatus*, in Cardigan Bay and the Moray Firth. Based on the available information, we believe that oil and gas exploration and development will be a substantial threat to the resident bottlenose dolphin populations and has the potential to adversely affect the integrity of the sites. Therefore we state that licensing should not be allowed to occur within, or adjacent to, these Special Areas of Conservation (SAC's).

The notion that the knowledge base for Cardigan Bay when compared to the Moray Firth makes these situations substantially different and the latter more suitable for licensing without considering critical knowledge on effects of oil and gas developments or cumulative impacts is illogical and unscientific.

In addition, we do not believe the Assessments cover all the necessary blocks to enable BERR to meet its obligations under the EU Habitats Directive. Blocks adjacent to both SACs should also be included, along with Lleyn Peninsula SAC, which we note BERR included in the 25th licensing round despite that Bottlenose dolphins are a qualifying feature for this site.

In this letter we focus our comments on the Moray Firth Appropriate Assessment as licensing has been supported at this site. In addition, we agree with the conclusion intention for the Cardigan Bay AA, to withhold these blocks from licensing, but our concerns on AA process and content detailed in this letter on Moray Firth, apply equally to the Cardigan Bay AA. We discuss the major failings in the Appropriate Assessment below.

BOTTLENOSE DOLPHINS AND THEIR PROTECTION IN THE UK

Both populations of bottlenose dolphins in Cardigan Bay, Wales and the Moray Firth, Scotland are small, resident and vulnerable, with estimates in the range of 150-200 animals in Cardigan Bay and 130 animals in the Moray Firth. We therefore consider, from a conservation perspective, that an impact on any individual may be significant for the population.

Despite many years of dedicated research on these populations, there remains considerable uncertainty surrounding their numbers, habitat needs and ranges. The Moray Firth and Cardigan Bay SACs were designated with these Annex II listed populations of bottlenose dolphins as primary features. Bottlenose dolphins are also protected in the northern part of Cardigan Bay in the Pen Llyn ar Sarnau candidate SAC. The importance of these small protected areas for this species in UK waters itself is a significant point that is not acknowledged in the Appropriate Assessments. SACs are also meant to be part of a coherent European network.

The Conservation Objectives of both the Cardigan Bay and Moray Firth SACs include amongst other things that the distribution and extent of habitats supporting bottlenose dolphins are maintained in the long term, including no significant disturbance of the species. Oil and gas activities are counter to the SAC Management Plans, indeed the Cardigan Bay SAC Management Plan specifically states that oil & gas is an activity likely to be a negative impact on the integrity of the site, and therefore should not go ahead.

The conclusion of the SMRU report is that 'the considerations of whether the integrity of the site would be compromised and whether disturbance would be caused by OGED are the same (in Cardigan Bay) as for the Moray Firth SAC' (page 11). Yet, the Appropriate Assessment states that there is enough information on the distribution and foraging patterns of bottlenose dolphins in Moray Firth to allow licensing to occur but that this is not the case in Cardigan Bay. Abundance estimates are lower for the Moray Firth than the Cardigan Bay population and distribution data indicates that the Moray Firth animals are more isolated (Thompson, 2008). However, at populations of around 130 and 150-200 animals respectively, both populations are very small.

The report seems to rely on there being a perceived sufficiency of information relating to the animals themselves in the Moray Firth but without considering critical knowledge on effects of oil and gas developments or cumulative impacts. The Appropriate Assessment has concluded that development in the Moray Firth can go ahead within the context of: '*Applying the precautionary principle and taking into account impact predictions, the mitigation measures and evidence from other sites, under the provisions of the Habitats Directive this assessment supports the case for licensing of block 17/3….*'.

We contest this. We do not believe that licensing should be allowed to occur within, or adjacent to, these SACs. This conclusion has not taken into account the potential long term impacts of oil and gas exploration and development within the SAC. Significantly, the scope

of the SMRU report did not extend to the in-combination effects that are a requirement under the EU Habitats Directive.

VALUE OF THE MORAY FIRTH SAC

Distribution of dolphins within and without the Moray Firth

The most recent population data for the bottlenose dolphins in the Moray Firth shows that the population is more likely to be in decline than increasing (Corkrey et al. in press). It appears that during the AA production no consultation was undertaken with the field research team at Aberdeen University, where research on this population has been undertaken since 1989.

Almost no research data has been collected in block 17/3 and so the usage of the immediate area by the bottlenose population is largely unknown. Whilst the movements of the majority of the population may appear to be usually restricted to within a few miles of the coast, bottlenose dolphins have been observed in deeper waters in the Moray Firth and their use of this area and its potential importance to them is not well investigated. Further, most surveys have been conducted during summer months and the distribution of the animals in winter months is much less certain. It has not taken into account that there remains few data from the winter months, when dolphin abundance in the inner Firth is lower (Wilson *et al.,* 1997) or the latest publication on distribution of dolphins within the SAC that states further work is required in offshore areas to determine which areas are used at these times of year (Hastie *et al.,* 2003). Concerns regarding the incorrect interpretation of distribution data have been raised (Thompson, 2008). Indeed, survey effort within the proposed license block 17/3 extends to just a few hours and whilst the distribution appears to be primarily coastal, there are too few quantitative data to confirm this with the required degree of certainty (Thompson, 2008).

Furthermore, activities do not have to be in close proximity to the dolphins to be of significant concern. Waste and oil spills can not be contained. Noise travels far better in water that in air and effects created at distance are very difficult to observe and to monitor. Further, it is difficult to demonstrate that effects are caused by one particular industry when the threats faced are numerous. For example, since research into the dolphins' movements has begun, the range of some animals appears to have changed and now includes the Aberdeenshire and Fife coasts, with animals that have been photographed in the SAC being also regularly observed well outside the SAC. Is this a natural range expansion or is it perhaps related to changes in prey concentrations, climate change or the increase in disturbing activities such as oil and gas activity within the Moray Firth? The oil and gas industry developed in the Moray Firth in the 1960s and yet dolphin research did not begin until 1989. Hence there may have been impacts that cannot now be determined. There have also been various developments since the research began, including 2D seismic surveys in the SAC and 3D seismic surveys in the outer Moray Firth. We can not know that the animals' movements have not been affected by the industry, this simply has not been monitored. Although no statistical analysis has been conducted, Figure 1 documents the

seismic activities that have been conducted in the Moray Firth and we have overlaid this with dolphin sightings. Note the distinct lack of sightings where seismic has been conducted.

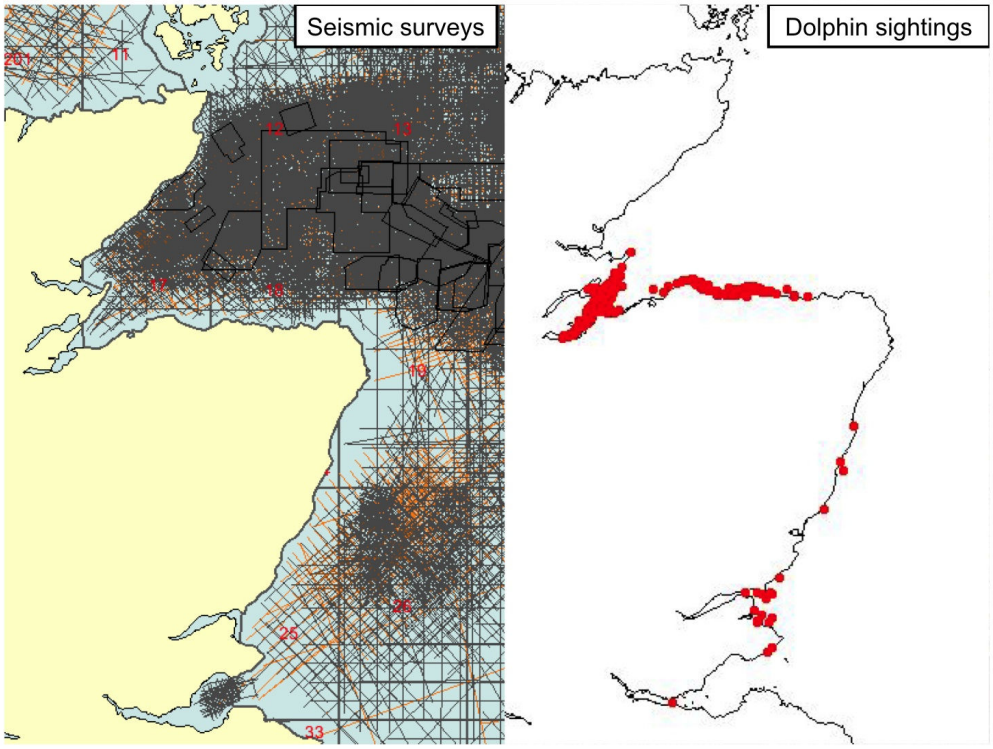

Figure 1. Map of North Sea, Scotland displaying distribution of 2D/3D seismic surveys from www.ukdeal.co.uk alongside bottlenose dolphin sightings from coastal waters of the inner Moray Firth to the Firth of Forth

Despite considerable research efforts, the reasons for the dolphins' distributional changes remain unknown and extremely difficult to investigate. It is not possible to produce unequivocal evidence: hence the requirement for a precautionary approach. However, it is well established that dolphins can be displaced by disturbance, and it has even been acknowledged in previous SEA's that disturbance does occur.

Other species

The data provided on the diversity of species within the SAC is scant despite it being home to a number of European Protected Species and other marine wildlife. As a prominent example, a study by Clark *et al.* (2006) showed that harbour porpoises, *Phoceona phoceona*, another Annex II protected species, in the outer firth seem to be in decline. Harbour porpoises are regularly encountered in the outer section of the SAC. Minke whales, *Balaenoptera acutorostrata,* common seals, *Phoca vitulina,* and numerous internationally important sea birds are also found in the waters of the SAC seasonally or year round, yet barely any

consideration was given in the AA to these species. That harbour seals are decreasing in numbers both within the SAC and within Scotland more widely is a significant concern and the reason for the declines are unknown, but could be a combination of predation, prey reductions and shooting (Thompson *et al.,* 2007). Otters, *lutra lutra,* are another species on the Annex II of the EU Habitats Directive and they are not considered in the Appropriate Assessment.
Bottlenose dolphins themselves are a European Protected Species (EPS) as well as a qualifying interest of an SAC and so it must be addressed both as a qualifying interest of the site and separately as an EPS.

Seismic surveying has also been shown to influence fish species. This is reflected in Appendix F of the Assessment which states that exposure to high sound pressure levels has been shown to cause long-term damage to sensory cells in fish ears, threshold shifts, stress responses and other behavioural alterations, displacement of fish and reduced catch rates. Impacts on the dolphin's prey species is thus another potential impact and one that warrants further consideration.

SPECIFIC COMMENTS ON THE BERR MORAY FIRTH AA

General comments

Overall, the Moray Firth Appropriate Assessment was somewhat confusing and difficult to read. In particular it was difficult to follow some key arguments because pertinent information was tucked away in appendices and not appropriately cross referenced. Overall, we do not believe that the conclusions are scientifically supported.

The Appropriate Assessment concludes there is enough information on the distribution and foraging patterns of bottlenose dolphins in the Moray Firth, but not in Cardigan Bay, to allow development in the first but not the second SAC. The report seems to rely on there being a sufficiency of information relating to the animals themselves but without considering critical knowledge on effects of oil and gas developments or cumulative impacts. The report is not an adequate consultation document, and does not effectively fulfill obligations under the Aarhus Convention for open public consultation

Specific concerns

Environmental Assessment

The potential impacts on Natura 2000 interests include activities related to the 'drop-or-drill' license applied for. Overall, however, there is too high a reliance on the 'regulatory regime' and the fact that there is an 'expectation' that adverse effects would be evaluated within Environmental Assessments (EAs). We have to date, despite asking, not been given any concrete examples of where regulations have prevented expected adverse effects. Given the

recent independent EIA review (conducted by Manchester University), the analysis of the overall quality of the sample of 35 Environmental Statements indicated that 49% were of an unsatisfactory quality (Jones *et al.,* 2007), it was alarming to note that inadequacies included alternatives, mitigation and (most importantly in this case) impact identification and evaluation. The weakest areas being the treatment of alternatives and mitigation (section 4.2). This poor standard of EIAs leads us to a subsequent lack of confidence in decision making. Nevertheless these projects still received consent.

We are therefore not convinced that consideration of possible adverse effects can, or indeed should, be left until the EA stage, especially where reliance on the regulatory regime has been shown to offer inadequate protection. If licenses are granted there will be an expectation by both the licensees and the licensers that some form of project will be allowed to proceed, and so all possible adverse effects should be addressed at the Appropriate Assessment stage.

Lack of evidence of harm

'The competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the SAC concerned'…'That is the case where no reasonable scientific doubt remains as to the absence of such effects' (European Court of Justice Waddenzee judgment).

The Appropriate Assessment continually confuses lack of data as evidence of lack of harm. Absence of evidence is not evidence of absence of the potential impacts of oil and gas activities within the SAC. As stated above, the oil and gas industry developed in the Moray Firth decades before dolphin research began. We simply can not know that the animals' biology and movements have not been affected by the industry. Yet, the Appropriate Assessment states '*there has been no clear increase or decrease in the population over the period in an area where there has been extensive oil and gas activity, including seismic surveys'.* Since there has been a movement out of the Firth, there would seem to have been a decline in the population inside the Firth and, in fact, with some caveats, Corkrey et al. (in press) who consider the matter of status, state that there is greater probability of a population decline that an increase. However, the estimates for abundance estimates have a high coefficient of variation (Thompson, 2008), therefore the power to detect trends remains low (Gerrodette, 1987; Figs. 3 & 4 of the report).

Further, whilst there is no evidence that small odontocetes are influenced by drilling noise (page 3), there is no scientific evidence of which we are aware to demonstrate that small odontocetes are not influenced by drilling noise. Whilst drilling noise might produce lower levels of noise pollution than seismic surveying or pile driving, its on-going nature may lead to a local increase in ambient noise levels and hence longer term chronic impacts for the animals.

Currently environmental assessment methods largely rely exclusively on assessment of physical damage to cetaceans to predict and assess the potential impact of (mainly noise producing) activities, such as seismic surveying and use of explosives. Mounting data and

expert opinion show that these assumptions are erroneous and that behavioral responses at much lower sound levels and at considerable distances may potentially have a range of detrimental effects (see for example, Madsen ***et al***., 2006; Lusseau ***et al***., 2006; Williams ***et al.,*** 2006; Wright ***et al.,*** in press), including those considered to result in injury or death. There is no scientific analysis of possible effects of physical damage but a reliance, again unproven, that the 'regulations' will prevent damage. Much more careful consideration of possible effects is required. Given the absence of evidence documented within this letter, the precautionary concepts that are imbedded in the EU Habitats Directive should undoubtedly be implemented.

Despite the Conservation Objectives detailed in the SAC Management Plan requiring that habitats supporting bottlenose dolphins are maintained in the long term and that there is no significant disturbance of the species, this is not adequately considered in the Appropriate Assessment. We understand the difficulties involved in monitoring and understanding the abundance, distribution and status of any cetacean population, and the considerable challenge inherent in investigating and attributing habitat displacement or tying a population decline to a particular impact. However, it is a requirement none the less but not attempted in the report.

Mitigation measures

Mitigation measures cannot be relied upon to protect animals from harm. Other than the complete exclusion of activities from the SAC, and adjacent waters (Habitats Directive, Annex 12), there are no mitigation measures that have been scientifically proven to protect animals from short term observable behavioural effects of oil and gas activities.

Section 2 of the SMRU report fails to reference significant recent papers that discuss the higher frequency components of seismic surveying (Madsen *et al.* 2006), that are likely to be relevant to bottlenose dolphins. It also fails to reference the results of the largest analysis of data collected during seismic surveys (Stone and Tasker, 2007). The section continues that mitigation measures are designed to avoid air-gun operation when cetaceans are in the vicinity, yet it fails to mention that these mitigation measures are untested (Weir and Dolman, 2007). Further, that mitigation of seismic surveys only covers 'ramp-up' or 'soft-start' under the JNCC guidelines and that there is no mitigation for animals that may approach the source once surveys are underway. We concur that repeated surveying could become important if potentially disturbing activities are repeated and/or intensified, as we understand happens over the decades that are the life-span of a production facility.

There are no known mitigation measures to protect animals from long term impacts, including from little documented effects such as stress and displacement. The Appropriate Assessment relies upon mitigation measures as a method of '*obviating and minimizing adverse effects'*, yet no mitigation measures are identified in the report. Hence the reader has no clear idea of what is being referred to.

In addition, the report states that seismic surveys have occurred during the period covered by the lack of trend in abundance of the bottlenose dolphin population inhabiting this area

(section 5.2.1). However, we state again that oil and gas activities in the Moray Firth began decades before dolphin surveys and so it is not possible to assess impacts effectively.

Such confidence in mitigation measures to protect these populations is not scientifically demonstrated, nor is it defendable and certainly should not cloud the clarity required in effectively identifying and assessing impacts for significance.

Oil spills

The Appropriate Assessment report concludes that '*an oil spill will not result in an adverse effect on the integrity of the SAC*'. We are very concerned by this conclusion, which appears to be based upon notional mitigation measures. However, an oil spill in the centre of the inner Firth has the potential to cause considerable and devastating damage to the surrounding habitats and species. We note that oil spills as a result of direct mortality due to contaminant exposure associated with major oil spills has been reported (Matkin *et al.,* 1994). Whilst the risk of a major oil spill in the Moray Firth may be '*moderate or low',* the consequences could be devastating and should not be contemplated with the core protected habitat of this bottlenose dolphin population, where a significant percentage of the population can be found in 1 km^2 at any given time. That 'there have been no specific studies on the direct acute or chronic toxicity of oil dispersants to seals and cetaceans' (page 4 of SMRU report) is a further concern. In addition, the growing marine eco-tourism industry in the firth, providing opportunities for appreciating marine wildlife in the vicinity of the SAC (not to mention valuable employment opportunities), would also be significantly adversely impacted.

It is not possible for the Appropriate Assessment to be confident that an oil spill will <u>not</u> cause an adverse effect on the SAC.

Seismic surveying

We are not aware of the extent of seismic surveying that has taken place within the SAC. This information, which seems critical to the Appropriate Assessment, is not included.

There is almost no scientific data about the use of block 17/3 by the population of bottlenose dolphins and there is a considerable lack of data concerning their sensitivity to low frequency sound. Further, the Appropriate Assessment correctly states that '*Seismic survey occurring in Block 17/3 will be audible to dolphins within the majority of the SAC and over a large proportion of the Moray Firth*'.

The AA goes on to state that: '*The exact effects that this may have are unknown, although available evidence suggests that significant effects at a population level are unlikely'*. We strongly take issue with this statement. Firstly, that the exact effects are unknown is key given the requirements for protection within the SAC under the EU Habitats Directive and the Waddenzee judgment requirement for proof of no effect. Secondly, there has been little or no research into the long term impacts of seismic surveys on any odontocete species, and

particularly not within a designated protected area. Finally, with such a small population of bottlenose dolphins significant effects start at the level of the individual.

While we do not agree with the assertion that seismic presents no threats to the dolphin populations, we agree with the overall conclusion that there is insufficient knowledge of both the cetacean populations and the effects of oil and gas development (and not just relating to acoustic matters) to be sure of no detrimental effect on the populations.

Again, absence of evidence is not the same as evidence of absence – whilst the Appropriate Assessment report correctly states 'there is no evidence that noise arising from seismic surveys presents a risk to the viability of populations in UK waters, and specifically within European Sites', this is not due to gathered evidence but reflects lack of data.

Further, the report fails to cite a number of important scientific references and in particular Madsen et al. (2006) which documents noise at high frequencies at considerable distance from the source. It is no longer defendable to consider a small area around the source of the sound when considering management of potential impacts to marine mammals.

It is not possible for the Appropriate Assessment to be as confident as it is about seismic surveying not causing an adverse effect on the SAC.

In-combination effects (cumulative impacts)

Despite the requirement to consider *'Either individually or in combination with other plans or projects'*, the Appropriate Assessment sweeps aside concerns regarding cumulative impacts or in-combination effects. It states that '*in any case, there are effective regulatory mechanisms in place to ensure that operators and BERR take such considerations into account during permitting activity'*. We strongly challenge this section of the report. It is likely that cumulative effects will be highly significant for this small population of animals.

Firstly there is the potential in combination effect of new oil & gas with existing oil & gas that we opposed licensing due to its adverse impacts on the SAC. Whilst undoubtedly difficult to monitor and to measure, the combined effects of increased vessel activity, placement of various rigs, ongoing drilling and the associated installations such as pipelines, ongoing discharges of produced waste to sea and then decommissioning, add to the long term cumulative impact on the site. Such in-combination effects are not considered in the report, which further bolsters our considered opinion that the report is plainly inadequate.

In addition, the development of other sites in the vicinity (which is not restricted to oil and gas activity), is also important to consider and these are decisions that are outside the realm of Operators or BERR. There is increasing concern over cumulative effects of noise and other disturbance from leisure boating, fishing, seismic and military activities and other industrial developments; such activities cannot simply be written off as not relevant to potential oil and gas development within the SAC. In particular, marine renewable energy is an important topic in Scotland and the adjacent Beatrice wind development may expand considerably to include up to 200 turbines in the future.

Climate change is another area of impact where receptors are being affected in ways we just do not understand. This impact on top of all other threats stated and the threat of licensing could mean these small populations pass the viability tipping point. Such cumulative impacts should be considered over the decades for which potential developments may be *in situ*.

Again, we conclude that it is not possible for the Appropriate Assessment to be confident about 'in-combination effects' not causing an adverse effect on the SAC.

Conclusion of the Report

Despite all of the concerns and issues listed, the report confidently concludes in a short closing paragraph that licensing within the SAC will not affect the integrity of the Moray Firth SAC. We disagree. All of the information provided in this letter contests this conclusion.

Moreover, the only 'new' evidence for this Appropriate Assessment when compared to its predecessor appears to be Appendix G – the SMRU 2007 report. Curiously it is not clear who the authors are of the SMRU report. In the way that it is presented it appears to represent a whole university department which we think is most unlikely. The Appropriate Assessment does not present any information that was not available at the time of the SEA or earlier Appropriate Assessment, and does not appear to have utilised up to date information, such as that presented at the recent annual CCW marine monitoring workshop. Presentations on recent research showed us much more about the movement of bottlenose dolphins around Cardigan Bay and beyond, re-enforcing need for wider protection.

In conclusion, under the requirements set out by the EU Habitats Directive, the Appropriate Assessments have not ascertained that they will not adversely affect the integrity of the sites in either the Moray Firth or Cardigan Bay. As the scientific evidence provided in the Appropriate Assessments of the impact of the proposals on the bottlenose dolphin populations is flawed, the basis upon which the government has proposed the decision to allow oil and gas exploration and development in the Moray Firth SAC is also flawed.

The European Court of Justice Waddenzee judgment has clarified the need for certainty (paragraph 61) as follows "…all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities, taking account of the appropriate assessment of the implications of … for the site concerned in the light of the site's conservation objectives, are to authorise such an activity **only if they have made certain that it will not adversely affect the integrity of that site**. That is the case where **no reasonable scientific doubt remains** as to the absence of such effects."

The Appropriate Assessment does not represent the best science available and does not, and cannot, clearly demonstrate that significant disturbance will not occur to the populations of bottlenose dolphins, *Tursiops truncatus*, in Cardigan Bay and the Moray Firth. Based on the available information, we believe that oil and gas exploration and development will be a

substantial threat to the resident bottlenose dolphin populations and therefore that licensing should not be allowed to occur within, or adjacent to, these Special Areas of Conservation (SACs).

Important habitats under offer in the 25th Licensing Round

Further, we are appalled that the 25th licensing round has been opened up and includes protected and other important habitats. Whilst blocks within the Cardigan Bay and Moray Firth SACs may not be included, the ranges of the bottlenose dolphins in Cardigan Bay and the Moray Firth extend beyond the SACs and some of their ranges are included in this latest round: the 25th licensing round. This includes blocks along the southern Moray Firth and Aberdeenshire coasts and in the Irish Sea, including northern parts of Cardigan Bay. Remarkably, another European designated SAC, the Pen Llyn e Sarnu in Northern Cardigan Bay (which has bottlenose dolphins amongst the primary features that should be protected) is included in this latest licensing round and so is the Pembrokeshire Marine SAC, another important site for cetaceans (although they are not listed as a feature here). Our understanding is that the Appropriate Assessment process that the government has undertaken as part of the 24th licensing round should extend to plans or projects outside of the boundary of these SACs in order to determine their implications for bottlenose dolphins protected within the site.

BERR is required to prove beyond a doubt that it is not impacting the bottlenose dolphins even by actions outside of the SAC. The Conservation (Nat. Hab. &c) Regulations, section 48, requires that an Appropriate Assessment be undertaken, even outside the SAC, if the project is to have a significant effect on a European Site. This is detailed in paragraph 48 thus:

Assessment of implications for European site

48.—(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which-

(a) is likely to have a significant effect on a European site in Great Britain (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of the site, shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives.

Recently, the ECJ Waddenzee Judgment has clarified and tightened the definition outlined in the "Likely significant effect" paper. Paragraph 45 of the Waddenzee judgment states that "…any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects." Furthermore paragraph 49 of the same judgment adds "…where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on that site. The assessment of that risk must be made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project." Assessing and evaluating the conservation status of habitats and species

within the Natura 2000 network is therefore not always enough, especially when the occurrences of habitats or species are only partly covered by the network, maybe even in some cases only to a relatively small extent (European Commission, 2007). We hence believe Appropriate Assessments need to be re-done to include these areas.

These comments are made without prejudice to any comments that the undersigned organisations may provide on specific proposals in future.

Yours sincerely

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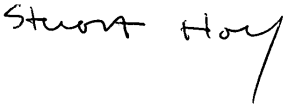

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14 March 2008

Dear Mr O'Carroll

Response to BERR Appropriate Assessment: Block 17/3, Inner Moray Firth

As convenor, I am writing on behalf of the Scottish Environment LINK Marine Task Force to voice our rejection of the conclusion of the Appropriate Assessment for oil and gas licensing in Block 17/3, which overlaps the Moray Firth European marine Special Area of Conservation (SAC) for bottlenose dolphin and sandbanks. We believe that the Appropriate Assessment fails to meet the tests set under the EU Habitats Directive (92/43/EEC). It fails to demonstrate that there will be no adverse impact on the integrity of relevant Natura 2000 interests or to satisfy the site's Conservation Objectives. These failings include the following:

- Failure to make accurate and full use of 'the best scientific knowledge in the field' as required, including acknowledgement of significant knowledge gaps
- Failure to take adequate account of cumulative and in-combination effects
- Failure to support the conclusion that mitigation measures can exclude adverse impacts to site integrity
- Resulting failure to reach the correct conclusion under the terms of the EU Habitats Directive
- Failure to consider all the necessary licensing blocks to meet EU Habitats Directive obligations

Based on these failings and the requirements after the European Court of Justice Waddenzee judgment clarifying the need for certainty (paragraph 61), we believe that the proposal to allow licensing of oil and gas/

exploration in the Moray Firth SAC should not be authorised on the basis of this Appropriate Assessment.

The Scottish Environment LINK Marine Task Force member bodies below also support the detailed submissions provided by Whale and Dolphin Conservation Society (WDCS, co-signed by Friends of the Earth Scotland, MCS, Care for the Wild and WWF) and the Scottish Wildlife Trust in addition to those submitted by Professor Paul Thompson of the University of Aberdeen.

Yours sincerely

Calum Duncan
Convenor, Scottish Environment LINK Marine Task Force
Scottish Conservation Manager, Marine Conservation Society

cc Richard Lochhead MSP

The following organisations are signatories to this letter:

Hebridean Whale and Dolphin Trust
Marine Conservation Society
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Friday 14th March 2008

Comments on BERR Appropriate Assessment: Block 17/3, Inner Moray Firth (and general comments on Blocks 106/30, 107/21 and 107/22, Cardigan Bay)

Summary

- There is considerable evidence that the marine environment is under strain from climate change and from pollution, including from oil and gas exploration
- Special Areas of Conservation (SAC's) are part of a network of marine reserves that need to be maintained for the integrity of marine ecosystems. The one in the Moray Firth is home to an important population of bottle-nose dolphins
- There is considerable scientific evidence, as well as political commitments, that should commit the UK to a network of marine reserves, off-limits to most human activities, that is larger than the sites currently identified
- The challenge of climate change means that we have to seek to change our energy system rather than endlessly seeking further sources of hydrocarbon
- This thinking needs to apply to the enormous proposed expansion of exploration activity in 25th Round
- Greenpeace opposes oil and gas developments in Moray Firth

Fulfilling obligations for protected areas

Greenpeace is grateful for the opportunity to respond to the Appropriate Assessments. We welcome the intention to withhold blocks from Cardigan Bay from licensing, and believe the same conclusion is necessary for the Moray Firth.

The Moray Firth is designated as a Special Area of Conservation (SAC), established under the Habitats Directive, forming part of the Natura 2000 network.

However, the Habitats Directive has key weaknesses, and a narrow focus in terms of the species and habitats it refers to. Crucially, even though the Habitats Directive in theory requires the strict protection, management, surveillance and monitoring of particular species and habitats in designated sites, its effectiveness is severely compromised by its limited powers to restrict harmful activities. One especially significant weakness is that the Directive allows for potentially damaging

developments to progress for reasons of *'overriding public interest'* including that of *'a social and economic nature'*. Some discussion of the balancing of public interest and social and economic benefits with marine biodiversity protection and the imperatives of climate change is carried out later in this submission.

The SAC designation mechanism, established through the Habitats Directive, sits within a broader political landscape of the Convention on Biological Diversity (CBD) which mandates the establishment of a network of marine protected areas (MPAs) by 2012, and the OSPAR Convention which similarly obliges its signatories, including the UK, to implement a joint network of marine protected areas by 2010. To date the political will to meet these obligations has been lacking although the UK Government now has the opportunity to rectify this situation through the forthcoming Marine Bill.

By establishing a framework for Marine Reserves in the forthcoming Marine Bill the UK can move towards meeting its international obligations to deliver a large-scale network of fully-protected Marine Reserves. A growing body of scientific evidence is showing that the establishment of large-scale networks of Marine Reserves, in addition to being urgently needed to protect marine species and their habitats, is also key to reversing global fisheries decline and restoring our oceans.

Marine Reserves are not just about preventing overfishing, they are increasingly seen as an essential global tool to protect the marine environment from a range of threats, including pollution. Large-scale marine reserves are areas that are closed to all extractive uses, such as fishing and mining, as well as disposal activities. Within these areas there may be core zones where no human activities are allowed, for instance areas that act as scientific reference areas or areas where there are particularly sensitive habitats or species.

The Moray Firth SAC has a resident population of bottlenose dolphins, approximately 130 strong. The SAC was designated with this Annex II listed population as a primary feature, and the SAC contains a Conservation Objective whereby the distribution and extent of the habitat supporting the bottlenose dolphin population is maintained in the long term, including no significant disturbance of the species. Oil and gas activities are counter to the SAC Management Plan; it is difficult to conceive of licensing of further oil & gas activity that could possibly maintain these objectives. The application of the precautionary principle to such a designated and small population would in itself inevitably lead to the conclusion that licensing should not proceed. Further discussion of potential impacts and necessary protection continues below.

Greenpeace calls for a moratorium on extractive activities (including new oil and gas exploration, fisheries, and sand & gravel extraction) within Special Areas of Conservation, to be implemented through national legislation and the Common Fisheries Policy.

Oil and gas industry impacts

The oil and gas industries have a profound environmental impact on the marine environment in the North Sea, and elsewhere. Firstly the process of extracting fossil fuels in UK seas carries a number of environmental risks, particularly with regard to pollution and the associated, often severe, damage to marine and coastal biodiversity and landscape.

In addition to the well-known and often catastrophic impacts of oil spills, there is a body of evidence, outlined in the Greenpeace report 'Rescuing the North and Baltic Seas: Marine Reserves – a key tool'

http://www.greenpeace.org.uk/MultimediaFiles/Live/FullReport/6448.pdf, outlining damaging impacts associated with standard exploration and production operations. The discharge of drill cuttings and chemicals during such operations has had significant impacts on the chemistry and biology of the marine environment surrounding test, operational and redundant wells, even at distances of several kilometres from well sites. In some cases, effects have been reported to persist for many years. Many existing piles of drill cuttings contaminated with old oil-based formulations remain on the seabed, acting as potential long-term sources of marine pollution. Remarkably few have been properly characterised. It is estimated that as much as 1,600km^2 of the seafloor of the North Sea may have been affected by drill cuttings discharges over the last 30 years.

Although stricter controls on the use of oil-based drilling fluids and increasing use of synthetic and water-based alternatives have been introduced, discharges of these fluids can also have significant impacts on benthic ecosystems. The levels of oil released in produced water (ie water from the formation which is produced with the oil) have increased in recent years as a consequence of many oil fields nearing the end of their commercial life. Despite some technical improvements, it remains difficult for operators to keep dispersed oil levels below the 40mg/l standard set by OSPAR. Control of more soluble, in some cases more toxic, components is yet more difficult; the impacts of such discharges remain under investigation.

Secondly, the processes and products of the extractive activities of the oil and gas industries are major drivers of climate change, which amongst many other serious and well-understood impacts, is bringing about damaging changes to marine and coastal biodiversity.

The Intergovernmental Panel on Climate Change (IPCC) warns that climate change will bring about several significant marine ecosystem impacts:
• changes in the distribution and abundance of organisms;
• changes in productivity levels; and
• changes to the structure of communities and marine food-webs.

Generally speaking, these are the consequence of:
• predicted increases in sea level, sea-surface temperature, wave climate and ocean circulation;
• predicted decreases in sea-ice cover; and
• predicted changes in the salinity and alkalinity of the water.

It is evident that it is not only the bottlenose dolphin population that is at risk. The entire ecosystem is under increasing and extreme stress, through climate change impacts and more directly through human extractive activity.

For an account of climate change impacts on marine ecosystems see the Greenpeace report ‘The Heat Is On: The role of marine reserves in boosting ecosystem resilience to climate change’ http://www.greenpeace.org.uk/files/pdfs/oceans/HeatIsOnfinal.pdf.

Future Steps: Depletion, Decarbonisation and Marine Reserves
Clearly, with regard to fossil fuels, the transition to a low-carbon economy will not be delivered overnight, even with the progressive and urgent policy shifts that Greenpeace and many other NGOs have been urging the Government to adopt for many years. It is important to recognise in this context that the widely touted panacea

of carbon capture and storage (CCS) isn't close to being commercially viable yet, and may well not be for at least another decade, if at all.

Greenpeace recognises that there will be continued but generally declining oil and gas exploitation in the rapidly depleting fields in and around the North Sea. Given that these fields are nearing the end of their productive lives other routes must be found to deliver energy security such as widespread installation of decentralised energy, expansion of renewable energy, and the most cost-effective energy investment of all - energy efficiency. There exists a fundamental contradiction at the heart of Government policy, which permits the fossil fuel industry to continually explore for new reserves while ministers claim to be actively combating climate change.

In delivering the necessary transition to a low-carbon economy the UK Government cannot fail to recognise the inevitable shift away from offshore exploitation of fossil fuels. Rather than opening up ever more areas of the marine environment to the rapidly diminishing energy returns available as proposed in the BERR Appropriate Assessment, it should instead seize the opportunity to recognise and protect the full potential of the marine environment by establishing Marine Reserves, to form part of a global network of Reserves that would cover 40% of the world's seas.

Greenpeace's plan to set aside 40% of UK waters as no-take Marine Reserves would provide much-needed protection for the North Sea as well as other UK waters; in doing so the UK can become a world leader in establishing Marine Reserves as a powerful tool to protect marine biodiversity and underpin a sustainable future for UK fisheries by promoting recovery and reproduction of exploited species.

Until this network of Marine Reserves is established, Greenpeace calls for a moratorium on extractive activities, including fisheries, new oil and gas exploration and sand and gravel extraction, within Special Areas of Conservation and the proposed Marine Reserve areas, to be implemented through national legislation and the Common Fisheries Policy.

In conclusion, Greenpeace cannot support further licensing of oil and gas exploration and development in the Moray Firth or other areas considered within this consultation, particularly within, or adjacent to Special Areas of Conservation. Instead the Government must establish further SACs, with no extractive activities permitted and devote its efforts to meeting its CBD and OSPAR obligations in establishing Marine Reserves that protect 40% of the UK sea area.

References

A full account of the need for large-scale Marine Reserves can be seen in these Greenpeace reports:

- **Roadmap to Recovery**
  http://oceans.greenpeace.org/raw/content/en/documents-reports/roadmap-to-recovery.pdf

- **Rescuing the North and Baltic Seas: Marine Reserves – a key tool**
  http://www.greenpeace.org.uk/MultimediaFiles/Live/FullReport/6448.pdf

- **The Heat Is On: The role of marine reserves in boosting ecosystem resilience to climate change**
  http://www.greenpeace.org.uk/files/pdfs/oceans/HeatIsOnfinal.pdf

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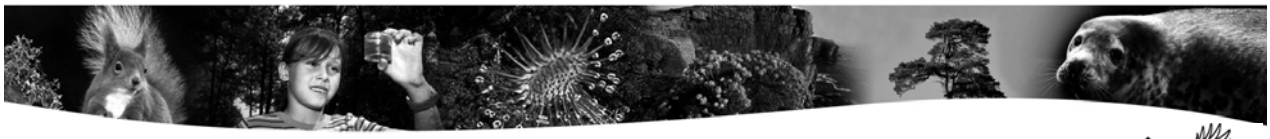
Appendix A

Renewable energy developments in Marine Reserves
In general, Greenpeace believes there should be a presumption against any human activities in the core zones of marine reserves. However, given the urgent threat posed by climate change it may be necessary to develop renewable energy facilities in such locations subject to the following conditions:

1. There is no feasible alternative.
2. Potential impacts are subject to both a Strategic Environmental Assessment and an Environmental Impact Assessment.
3. Severe ecological impacts of renewable energy developments should be mitigated and/or compensated for as much as reasonably possible.

The development of renewable energy facilities in core zones should never be taken as a precedent for any other kinds of development in these areas. It is only the extreme seriousness of the climate crisis that means that a broad ecological analysis will sometimes favour renewable energy developments in core zones. There should be no automatic renewal of development permission at the end of a facility's life.



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Dear Mr O'Carroll

Scottish Wildlife Trust response to consultation on Appropriate Assessment with regard to 24th Offshore Oil and Gas Licensing Round
Block 17/3 (Inner Moray Firth)

Summary

The Scottish Wildlife Trust (SWT) disagrees with the conclusions of the Appropriate Assessment (AA) and considers that it substantially fails to demonstrate that there will be no adverse impact on the integrity of relevant Natura interests. Our main issues with the AA are that it:

1. fails to make accurate and full use of 'the best scientific knowledge in the field';
2. fails to take adequate account of cumulative and in-combination effects;
3. fails to support the conclusion that mitigation measures can exclude adverse impacts to site integrity;
4. fails overall to reach the correct conclusion under the terms of Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna ('the Habitats Directive')

SWT believes that the proposal should not be authorised on the basis of this Appropriate Assessment.

Comments

Scope of the Appropriate Assessment (AA) and tests under the Habitats Directive

The tasks set for Appropriate Assessment (AA) are as follows:

Article 6(3) of the Habitats Directive requires an Appropriate Assessment to assess the implications of oil and gas licensing on the conservation objectives of relevant European sites in light of the fact that this plan or project is believed *'likely to have a significant effect thereon, either individually or in combination with other plans or projects'*

Article 6(3) also states that '*in the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the*

plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned…'

The main focus of this Appropriate Assessment (AA) is on the Bottlenose dolphin population, the priority feature of the Moray Firth SAC, within which the majority of Block 17/3 lies. Only brief consideration is given to possible impacts on common seal, one of the priority features of Dornoch Firth and Morrich More SAC. The other Annex II Natura marine mammal at this site, the otter, is not considered in the AA.

For the purposes of this AA the potential impacts on Natura interests under consideration include all activities related to the 'drop-or-drill' licence applied for. According to the AA these include physical damage to the seabed, marine discharges, acoustic effects and oil spill (presumably from test drills and associated vessels).

The AA identifies 24 Natura sites in the area (including Moray Firth SAC) as threatened by major oil spill from the further development of Block 17/3, but asserts that mitigation is possible and therefore does not include them further in the analysis of impact.

Scottish Wildlife Trust's comments on this AA relate to the potential impacts of the 'drill-or-drop' licence applied for. We emphasise that we believe that the licensing of further development of Block 17/3 for oil and gas exploration would be likely to be associated with unacceptable risks for the biodiversity of the area, including the interests of the 24 Natura sites identified in AA.

Scottish Wildlife Trust's comments are concerned with the inherent weaknesses of the AA, in this case in relation to the assessment of impacts on the bottlenose dolphin.

Appropriate Assessment and Moray Firth SAC

The conservation objectives for Bottlenose dolphin in the Moray Firth SAC are:

To avoid deterioration of the habitats of the qualifying species (bottlenose dolphin *Tursiops truncatus*) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying interest.

To ensure for the qualifying species that the following are established then maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within the site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

The Moray Firth Bottlenose dolphin population is small, (129 [95% CI = 110-174] genetically isolated (Parsons et al. 2002) and vulnerable. Risk is an assessment of hazard, exposure and vulnerability, so the risk of human activities having an adverse impact on the population is high, even where exposure and hazard may be relatively low.

In order for the proposal to be authorised, the AA must demonstrate that there will be **no adverse effects** on the integrity of the site in light of the above conservation objectives. Site integrity is a broad term, which includes the overall health of the ecosystem supporting the site interest (the dolphins). Short-term effects are considered as important as longer-term effects on site integrity.[1] Given the

[1] EU guidance states that '*a site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required. When looking at the integrity of the site it is therefore important to take into account a range of factors, including*

isolation and vulnerability of the population, damage to an individual dolphin can be considered damage to site integrity.

The AA must demonstrate this by considering **all the aspects** of the project, **cumulative or in-combination effects**, drawing on the **best scientific knowledge in the field.** Where there is any **reasonable scientific doubt** as to the absence of effects, the plan or project cannot be authorised. (ECJ C-127/02 para 61)[2]

This AA (carried out for licence applicant BERR, which is also the competent authority), concludes that it has demonstrated no adverse effects: that *'there is certainty, within the meaning of the ECJ Judgement in the Waddenzee case, that the plan [oil and gas licensing] will not adversely affect the integrity of relevant European sites taking account of the mitigation measures that can be imposed before any activity starts.'*

Failure to make accurate and full use of 'the best scientific knowledge in the field'

Population
The AA asserts that '*there is now extensive knowledge of the size and distribution of the [bottlenose] dolphin population within the SAC (mostly in the inner Moray Firth and along the south shore*) (5.4)

- In fact data sets for the Moray Firth bottlenose dolphin population are incomplete and uncertain. Most survey effort has focussed on the inner Moray Firth and along the coast. There is poor understanding of winter distribution. Survey effort in block 17/3 totals only a few hours over two years (Bailey, 2006). Indeed one report on dolphin distribution in the SAC referenced in the AA concludes that further work is required in offshore areas to determine seasonal changes in distribution (Hastie et al. 2003). This conclusion appears not to be acknowledged in the AA.

The AA asserts that *'the evidence shows that there has been no clear increase or decrease in the population over that period in an area where there has been extensive oil and gas activity, including seismic surveys'*

- In fact it is impossible to assess whether dolphin distribution or abundance has changed as a result of seismic activity. All detailed data on dolphin distribution and abundance post-dates intensive seismic activity by a decade. Furthermore, the available data on abundance is subject to too much variance to state with certainty that there has been no population change (Wilson et al 1999, Thompson et al.2000). Indeed the latest research which attempts to reduce this uncertainty indicates that there is a slightly higher chance that this population is declining rather than increasing-(Corkrey et al. in press). Furthermore the distribution of the population is currently in flux such that individuals now range and forage more widely than was the case in the early 1990s. Though poorly understood, this change effectively results in an ongoing reduction in population density over the population's Moray Firth range (Wilson et al., 2004).

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the possibility of effects manifesting themselves in the short, medium and long term. EC(2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Office for official publications of the European Communities, Luxembourg.

[2] The European Court of Justice in the Waddenzee case (C-127/02) states that:
*'an appropriate assessment of the implications for the site concerned of the plan or project implies that, prior to its approval, **all the aspects** of the plan or project which can, by themselves **or in combination with other plans or projects**, affect the site's conservation objectives must be identified in the light of the **best scientific knowledge in the field**. The competent national authorities, taking account of the appropriate assessment of the implications [of the activity] on the site concerned in the light of the site's conservation objectives, are to authorise such an activity only they have made certain that it will not adversely affect the integrity of that site. That is the case where **no reasonable scientific doubt** remains as to the absence of such effects'* [my emphases para 61]

Impact of noise

The AA states that '*Seismic survey occurring in Block 17/3 will be audible to dolphins within the majority of the SAC and over a large proportion of the Moray Firth'*.

The AA asserts that, *Available evidence (largely based on acoustic monitoring*, (Clark & Charif 1998, Swift et al. 2002) *does not suggest that broadscale marine mammal distribution patterns have been influenced by seismic activity to date'* (Appx F3)

And, '*While it is clear that seismic survey noise may be detectable by marine mammals, there is no evidence that noise arising from seismic surveys presents a risk to the viability of populations in UK waters, and specifically not within European Sites*' (5.4)

- Lack of evidence of noise impacts is a reflection of lack of information, not lack of impact. The AA appears to claim certainty of no acoustic impacts whereas the data can only support lack of certainty of no impact. The 'Swift et al.' paper referred to above does not, in fact, make the assessment claimed for it by the AA. While it is difficult to design research to assess the extent of specific and localised impacts, the distance at which marine mammals can sense sound and the existence of impacts both on marine mammals and on their prey is well-evidenced. The oil and gas industry measures only low frequency sound, so information on high frequency sound, which also accompanies oil exploration, is lacking. The AA does not provide adequate analysis of available information on historic and ongoing seismic activity against dolphin distribution data. The maps in Annex I provide a preliminary comparison of bottlenose dolphin distribution against a seismic activity in the Moray Firth (from the BERR-sponsored UK Deal website). Placed together they suggest that the possibility of a link between the two. This indicates that a more thorough analysis of existing data on this relationship is necessary if the assertions of the AA are to be supported, and if adverse impacts on site integrity are to be excluded with the required certainty.

Failure to take adequate account of cumulative and in-combination effects

The AA states that BERR '*considered whether, on the basis of the precautionary principle, it could be concluded that the integrity of relevant European sites would not be affected by the plan. This impact prediction involved a consideration of the cumulative and in-combination effects'*

It further states that, '*BERR is not aware of any projects which are likely to cause cumulative or synergistic effects that when taken in-combination with the activities discussed above would adversely affect the integrity of the relevant European Sites'.*

The SMRU report on potential impacts on cetaceans and other marine mammals states that *'an assessment of cumulative impacts is dependent on knowledge of other plans or projects involving human activity, which is beyond the scope of this document'*

EU guidance states that '*the content of an assessment should address the potential for 'in-combination' effects to arise from a specific plan or project under consideration in an approval procedure and other plans or projects not under consideration in the same approval procedure*.'[3]

- The AA fails to take account of existing work on a range of potential cumulative and in-combination effects. The SAC Management Plan considers a range of potential impacts, which have been reviewed and mitigation measures considered (Curran et al. 1995, Nautilus 2001). The AA does not consider these documents. The conclusion of the AA that adverse impacts from cumulative and in-combination effects have a) been considered and can b) be excluded is not supported by the AA itself. Not only is the AA internally inconsistent but it fails to meet the tests set for it.

[3] EC(2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Office for official publications of the European Communities, Luxembourg.

Failure to support the conclusion that mitigation measures can exclude adverse impacts to site integrity

For the purposes of this AA the potential impacts on Natura interests under consideration include all activities related to the 'drop-or-drill' licence. According to the AA these include physical damage to the seabed, marine discharges, acoustic effects and oil spill. The AA identifies 24 Natura sites that could suffer damage as a result of a major oil spill, stating in each case that '*mitigation would be possible'.*

The AA concludes that, *'there is certainty, within the meaning of the ECJ Judgement in the Waddenzee case, that the plan [oil and gas licensing] will not adversely affect the integrity of relevant European sites, taking account of the mitigation measures that can be imposed before any activity starts.'*

Given the need to exclude adverse impacts on site integrity before authorising a plan, it seems clear that the '*primary aim of the mitigation of an option should be to cancel out any adverse effects fully. Where it is not possible to eradicate negative effects completely, there should be a sufficient reduction so that an adverse impact on the integrity of the European site can be nullified...'* [4]

- The AA does not provide adequate evidence that the potential impacts of OEGD can, in fact, be mitigated to the point of nullifying their effects on site integrity. Recommendations on improvements to oil spill contingency planning have not been put into practice (Gubbay & Earll 1999, 2000). Given the considerable uncertainty surrounding seismic impacts, the perforce reactive response to oil spill, and the possibility that even small-scale oil spill from a vessel fuel tank could affect the site's conservation objectives, it is open to question whether mitigation could ever be a reliable means of excluding adverse impacts in this case.

Failure to reach the correct conclusion under the terms of the Habitats Directive

In this case BERR both grants the 'drop-or-drill' licence and is the competent authority for the Habitats Directive.

The conclusion of the AA, prepared by BERR, is that, *'there is certainty, within the meaning of the ECJ Judgement in the Waddenzee case, that the plan [oil and gas licensing] will not adversely affect the integrity of relevant European sites, taking account of the mitigation measures that can be imposed before any activity starts.'*

Article 6(3) of the Habitats Directive states that '*in the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned...'*

The Waddenzee ruling states that, '*where doubt remains as to the absence of adverse effects on the integrity of the site linked to the plan or project being considered, the competent authority will have to refuse authorisation'* (C-127/02 para 57)

It is the view of the Scottish Wildlife Trust that the AA does not meet the tests set for it by the Habitats Directive. It does not consider in adequate detail all the aspects of the project, it fails to address adequately cumulative or in-combination effects, and it fails to make accurate and full use of the best scientific knowledge in the field.

[4] DCLG (2006) Planning for the Protection of European Sites: Appropriate Assessment, Guidance for Regional Spatial Strategies and Local Development Documents, Consultation document, http://www.communities.gov.uk/archived/publications/planningandbuilding/planning2 , para. 5.17-5.19.

Given these weaknesses, the evidence supplied in the AA is insufficient to conclude, beyond reasonable scientific doubt, that there will be no effects on site integrity. On the basis of this AA according to the terms of the Habitats Directive, the plan or project should therefore have a negative assessment and should not be authorised.

Yours sincerely

Rebecca Boyd
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Scottish Wildlife Trust

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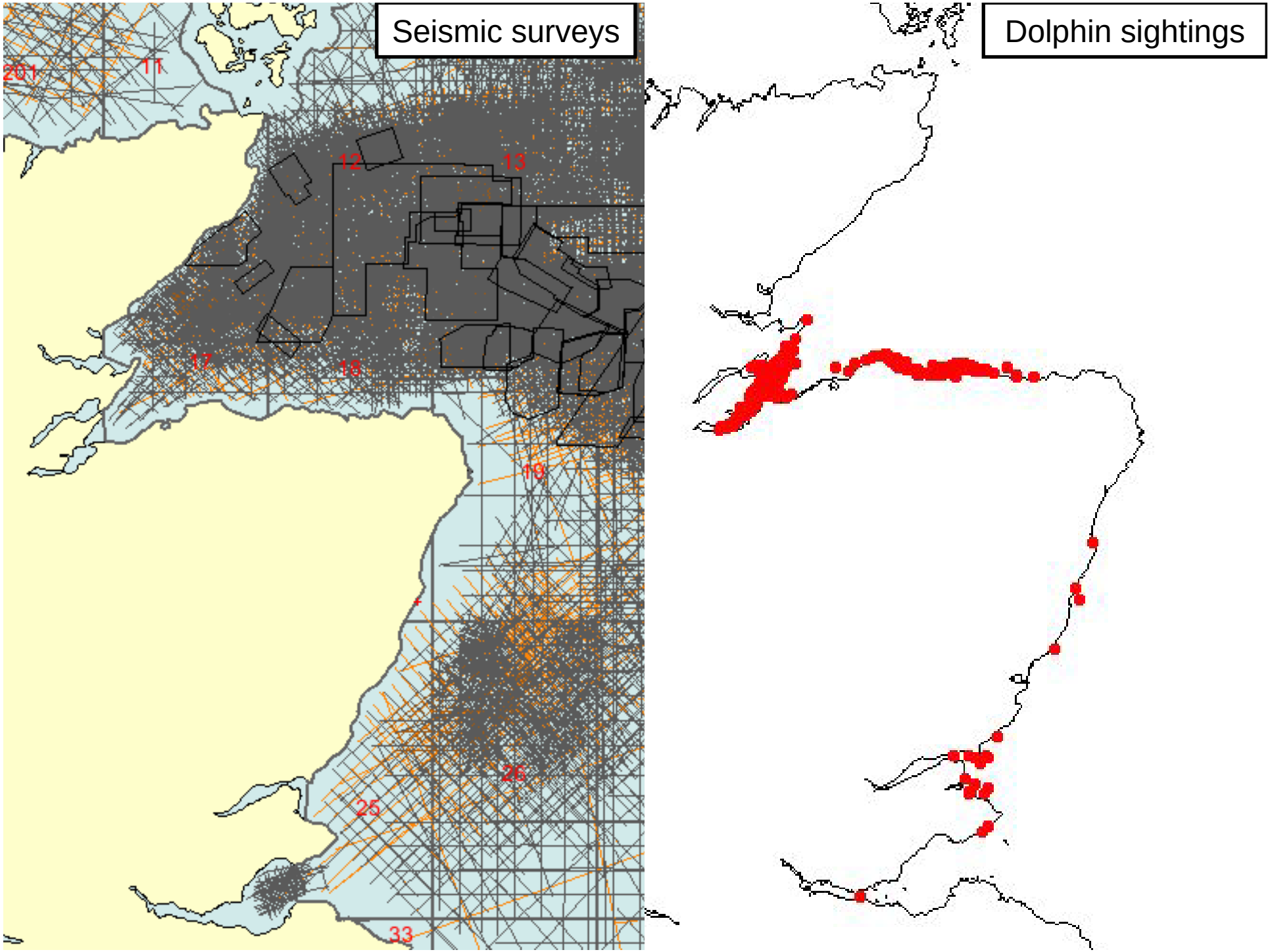
Annex II: Maps of seismic activity and bottlenose dolphin distribution



The Cottage
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HR4 8BT

TO: BERR SEA Offshore Energy Licensing

14 March 2008

Dear Sirs,

Following my signing of the Whale and Dolphin Conservation Society (WDCS) petition against oil and gas exploration and drilling in UK coastal waters, I would like to submit further in the consultation process to the assessment, following an invite from Shelley Torey, BERR Ministerial Correspondence Unit.

The UK's resident populations of bottlenose dolphins are supposedly afforded some protection by Special Areas of Conservation (SAC) in Cardigan Bay and Moray Firth, although not exclusively these species. All cetaceans are European Scheduled Protected Species. As such, there is a very high level of protection afforded to them all, including resident, migratory and transient species.

It is with great disappointment, therefore, that I understand the Ministry is minded to award extensive petroleum and gas exploration and drilling licenses (related to this SEA), to the commercial sector, particularly in the Moray Firth Basin, for there is no way of properly mitigating the detrimental effects to cetaceans of noise and chemical pollution from marine geophysics exploration and drilling operations.

Scientific concerns:

The main concern is with noise pollution. WDCS and many other scientific organizations nationally (e.g. Seawatch Foundation, Marine Connection), and across the globe (e.g. World Wildlife Fund, IUCN), continue to collate evidence that noise pollution is hazardous to populations of cetaceans[1] and other wildlife. Scientific understanding in this area is developing, but evidence suggests that high resolution seismic and sonar surveys conducted from geophysical survey vessels cause stress to cetaceans, provoking them to move away from habitats. There is a risk of audial tissue damage, strandings, death and/or extirpation. I have included an extract by Kathy Heise for Fisheries and Oceans Canada. She writes,

"Acute Noise[2]

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[1] ICES Impact of Sonar on Cetaceans - http://www.acousticecology.org/sciencereports.html

[2] Recovery Strategy for the Transient Killer Whale (Orcinus orca) in Canada (Consultation Draft) 2007-2012 March 2007 - Fisheries and Oceans Canada: http://www-comm.pac.dfo-mpo.gc.ca/pages/consultations/TransientKillerWhales/Document/TKWRS%20March%202007%20V14%20Final%20Public%20Consult1.htm

Sources of acute noise in the marine environment include military sonars, seismic surveys, commercial sonars and underwater explosions usually associated with construction. Many of these intense impulsive sounds have the potential to travel large distances underwater (>10-100+ km). Recent evidence suggests that such sounds may have significant impacts on cetaceans, although further research is needed to provide insight into the mechanisms by which these effects occur. In other species of marine mammals, acute noise has been associated with hearing threshold shifts, the production of stress hormones, and tissue damage, which is likely due to the formation of air bubbles or as a result of resonance (Ketten et al. 1993, Crum and Mao 1986, Evans and England 2001, Finneran 2003, Jepson et al. 2003, Fernandez et al. 2004). Marine mammals may be particularly vulnerable to resonance because of the air-filled cavities in their sinuses, middle ear, and lungs, and small gas bubbles in their bowels.

Low-mid frequency sonar has been associated with increased strandings of humpback and beaked whales (IWC 2004), and with unusual behaviours of resident killer whales (K.C. Balcomb, personal communication, in Wiles 2004). Systematic surveys of cetaceans during seismic surveys have been undertaken in UK waters and have shown that killer whales and other cetaceans were generally seen further away during periods when the survey was active (Stone 2003). Although they did not see killer whales at the time, during seismic surveys in southern BC and northern Washington, Bain and Williams (2006) found that harbour porpoises and Steller sea lions showed significant avoidance responses to intense sounds even at relatively low levels, and a distances of up to 70 km or more.

While there is no direct evidence of the effects of high intensity sound on transient killer whales in particular[3], by inference from other cetacean species, high intensity sound would likely have a detrimental effect. Transients are particularly vulnerable to exposure to these high intensity sounds, because they are difficult to detect, both visually and acoustically, and are therefore extremely difficult to mitigate. They typically travel in small groups, and the likelihood of visually detecting them falls off markedly at distances greater than 1 km (Wade et al. 2003)."

The UK's own Biodiversity Action Plan[4] notes on seismic noise pollution affecting cetaceans, 'potential harm may be caused by direct auditory damage at close distances and interference with navigation, food-finding, and communication further away'

In a report offered by by Boris M. Culik (Kiel, Germany), for the UN-organized Convention for Migratory Species[5], "acoustic pollution in the form of powerful sonar or geological exploration has been made responsible for mass strandings", and suggests more intense scientific research on whale acoustics, "in order to reduce risks and make full use of potential possibilities".

Further, please note a summary by IUCN, The World Conservation Union, in their document "Action Plan for the World's Cetaceans IUCN/SSC Cetacean Specialist Group Dolphins, Whales and Porpoises" compiled by Randall R. Reeves et al., particularly in their sections on 'Disturbance from Industrial and Military Operations' and 'Chemical Pollution'. These can be found via the internet at http://iucn.org/dbtw-wpd/edocs/2003-009.pdf

Legal constraints:

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[3] Orca are seen in Scottish waters also.

[4] http://www.ukbap.org.uk/

[5] http://www.cms.int/reports/small_cetaceans/general_summary.htm

Following legal pressure from the European Commission[6], Special Areas of Conservation have been created to form protective zones for the UK's resident populations of cetaceans. BERR cannot ignore the legal protection created for cetaceans within these zones. Furthermore, the EU Habitats Directive[7] and Regulations and the Offshore Marine Conservation Regulations 2007[8] make it an offense to disturb local populations, their distribution and abundance or to affect their ability to breed, nurture and survive. Importantly, the Wildlife and Countryside Act 1981[9] affords the foundation of protection for British wildlife and the Nature Conservation (Scotland) Act[10] makes "it an offense to intentionally or recklessly disturb a dolphin, whale (cetacean) or basking shark..."

The mere issuing of the proposed licenses may itself infringe the protection afforded to the local resident populations of cetaceans under the Habitats Regulations and the Offshore Marine Conservation Regulations, since scientific evidence appears strong enough to support claims that hydrocarbon exploration will disturb / prejudice their protected status.

Additionally, I understand that under recent environmental law, severe environmental infringements resulting from commercial activities may result in referrals to the Crown Court for criminal prosecution. Should cetaceans be knowingly harmed during this process, one hopes conservation organizations will look closely at relevant legislation.

Mitigation:

Existing guidelines[11] for minimizing acoustic disturbance to marine mammals appear woefully inadequate and by their nature are not 'law'. For instance, seismic impact cannot be minimized by starting 'softly' and 'ramping up' because eventually the full range of seismic activity will force the cetaceans, resident or transient, to move out of the area and possibly their familiar range[12]. Given the difficulty in monitoring cetacean populations under duress, a precautionary principle would avoid harm. Cetacean physiology is extremely sensitive to noise. It is reasonable, therefore, to deduce consequential harm.

Reliance upon visual monitoring of species is also inadequate, since seismic waves will obviously travel far further across a volume of water than the eye can see. Underwater or passive acoustic monitoring may help to locate cetacean groups but seismic activity would still result in disturbance, 'avoidance behaviour', and possibly significant long term effects. Added to this are the complications of repetitive and overlapping seismic surveys over periods of time.

Policy:

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[6] http://www.eurocbc.org/eucomm_legal_action_re_uk_cetacean_protection_20dec2005page1833.html

[7] http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

[8] http://www.opsi.gov.uk/si/si2007/uksi_20071842_en_1

[9] http://www.jncc.gov.uk/page-3614

[10] http://www.jncc.gov.uk/page-3148

[11] http://www.scar.org/information/JNCC_Seismic_survey_guidelines.pdf

[12] http://www.eia-international.org/files/reports8-1.pdf

As a British Citizen, I am particularly disappointed by the Labour Government stance on fossil fuel exploration and exploitation in the light of the Stern Review[13] and current scientific consensus on Climate Change. Shelley Torey of BERR writes, “The Government recognizes that the oil and gas sector is one of the UK's most important industries and our role in awarding offshore oil and gas licenses is to promote the continued development of UK waters whilst respecting and minimizing the impact on our environment.” One cannot nurture the environment on one hand and harm it with the other.

The Petroleum Exploration Society of Great Britain’s website quotes[14], “During 2003-04 the government has launched a number of initiatives to help companies identify new opportunities for UKCS exploration, including promote licensing rounds and the encouragement of fallow acreage relinquishment.”

The Labour Government’s environmental and energy policies are lamentable, but it is not too late for a fundamental change. Strong leadership is required in the face of Climate Change. Renewable energy technology is available for investment[15]. The WDCS petition and numerous letters to MPs in support of their Protect Our Dolphins[16] campaign represents the weight of public opinion regarding the protection of cetaceans and other affected wildlife.

WDCS and MCS Submissions:

It is surprising that the WDCS (of which I am a member), was not invited to contribute to the original environment report as a consultee in this process of assessment. The organization is a leading player in the global funding of the science of cetaceans and their survival.

Indeed, the WDCS partnered the United Nations’ global Convention on Migratory Species in agreements on dolphin conservation (ACCOBAMS and ASCOBANS) and in declaring 2007 the ‘Year of the Dolphin’. Now it appears they have been overlooked during one of the UK’s key moments in cetacean conservation history. I do understand, however, that further detailed evidence is to be submitted by them as part of this ‘public’ consultation following the report. BERR should not ignore this evidence.

The Marine Conservation Society have already submitted evidence in relation to the negative impacts of a wide range of pollution matters relating to the hydrocarbon exploration and exploitation industry[17]. I urge BERR to heed their advice and refuse licensing.

Yours faithfully,

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[13] http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm

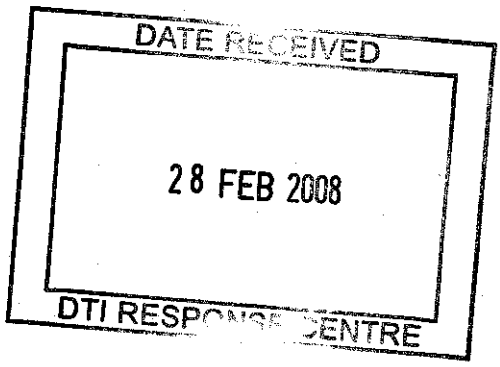
[14] “A Geo-Commercial Approach to Acreage Evaluation in the North Sea”, David Mudge, Ternan Ltd and Jim Hannon, Hannon Westwood, 20th April 2004, Jarvis City Hotel, Aberdeen.

[15] http://www.zerocarbonbritain.com

[16] http://www2.wdcs.org/hych/campaign/protectourdolphins.php

[17] http://www.offshore-sea.org.uk/downloads/mcs.pdf

Mrs Ginny Battson



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Malcolm Wicks MP
Minister of State for Energy
Department for Business, Enterprise & Regulatory Reform
1 Victoria Street
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SW1H 0ET

26 Feb 2008

Dear Mr Wicks,

Comments on Appropriate Assessment: 24th Offshore Oil and Gas Licensing Round Block 17/3 (Inner Moray Firth)

I wrote to you last year to let you know what a catastrophe it would be for the population of Moray Firth dolphins, if oil and gas exploration was permitted within the Moray Firth Special Area of Conservation. In light of the Appropriate Assessment, I need to stress again what a tragedy if would be if oil and gas exploration was allowed in Block 17/3.

I have spent many hours over many years on the Moray Coast observing marine mammals and studying their behaviour and movements. In the past few years I have passed this information to the Sea Watch Foundation in the hope this data would help in the conservation of these wonderful creatures and recently became the regional Sea Watch Foundation sightings co-ordinator for the south Moray Firth coast. I also observe marine mammals, and in particular cetaceans, in many parts of the world.

The bottlenose dolphin population of the Moray Firth is in a very vulnerable position. It faces so many threats from all directions. Individually these threats may not seem critical to some people but the cumulative effects could really spell extinction. The dolphins are already threatened by pollution, dwindling food supplies and increasing disturbance by recreational boats. I firmly believe that if we further add the threats by activities relating to oil and gas exploration as listed in the Appropriate Assessment (AA) then we have a recipe for disaster.

Anyone who regularly sees the bottlenose dolphins will notice the presence of many skin lesions, and more dolphin calves continue to be born with skeletal deformities and other abnormalities. This is not indicative of a healthy population.

It is obvious from the SMRU report that the author has never sat on a Moray cliff top on a perfectly still and clear day with a telescope and observed the many marine mammals going about their business within the Inner Moray Firth, including out towards Block 17/3. Although the bottlenose dolphins tend to prefer the coast, small groups and individuals can be seen crisscrossing the firth many miles out. Similarly harbour porpoise and seals can also be seen many miles out to sea, just because they are not seen other than on flat calm days does not mean they are not out there.

Very little reference was made in the AA to the impact on baleen whales, yet this area is an important feeding area for them. Baleen whales might not be a qualifying species for the Moray Firth Special Area of Conservation (SAC), unlike the bottlenose dolphins, but they are still protected under schedule 5 in the Wildlife and Countryside Act 1981.
The objectives and targets of the UK Biodiversity Action Plan are:

In the short term, maintain the current range of baleen whales.

In the short term, maintain the current abundance of baleen whales.

In the long term (over the next 20 years), increase the baleen whale population ranges around the UK, if biologically feasible.

In the long term (over the next 20 years), increase the baleen whale population sizes around the UK, if biologically feasible.

These whales will be most vulnerable to the effects of oil and gas exploration. Minke whales are regularly seen feeding here and even fin whales, the world's second largest whale has been observed. A triangle drawn from Burghead to Helmsdale to Balintore, is an area where I regularly see them from spring until late Autumn, although they might be present during the winter months when sea conditions are less favourable for observing. They are very sensitive to noise and fishing boats trawling in this area are enough to temporarily drive away the whales, but oil and gas activities would drive them away permanently after first possibly causing them physical harm.

The government is keen to create more marine parks offering similar protection to land sites but yet here in the Moray Firth we already have a Special Area of Conservation but yet this status does not seem to afford the required protection to its qualifying species, the bottlenose dolphins. If anything the qualifying species for the Moray Firth SAC should be expanded to include all the marine mammals that use this area. Once and for all we need to prove we are really serious about conservation rather than just giving it lip service.

Yours faithfully,

Alan Airey

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Environmental Management Team
Department for Business Enterprise
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Energy Development Unit
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ABERDEEN

7th March 2008

Dear Sirs,

Comments on Appropriate Assessment 24th Offshore Oil and Gas Round Block 17/3 Inner Moray Firth

In 2005 under E.U. Habitats Directive a Special Area of Conservation was designated for the protection of the small isolated and extremely vulnerable group of about 130 Bottlenose Dolphins of the Moray Firth. They are the most famous dolphins in the U.K. and the most studied. This sanctuary was awarded to these magnificent and intelligent creatures to protect them in their core habitat and to now threaten this with sub sea bed exploration for oil and gas is quite unbelievable.It is,of course,a negation of the Government's assumed stand on Marine Wildlife protection. The announcement of this operation came on the same day that,in another Government Ministry D.E.F.R.A., Jonathan Shaw was proposing special protection for 7 offshore marine sites in British waters-" The U.K.has one of the richest marine environments in the world.We want to bring conservation standards at sea up to the level of those we have on land,to give greater protection to sea life". What a farce it all is!

In the Appropriate Assessment for the Moray Firth much has been made of the fact that such work has been carried out before without harmful consequences.That must be regarded with scepticism since the Department are obviously looking first and foremost for economic gain and a way forward for their business partners. Why is short time gain always chosen rather then the long term view of results of actions? Once these creatures are

spills,sea bed damage from anchors added to the accustic damage of a major kind.the animals alre,dy face pollution,increased boat traffic,food shortage and illegal drift net fishing.

The Appropriate Assessment goes out of its way to stress that the plan will not affect adverselythe integrity of relevant European sites taking into account the mitigation measures that can be imposed" and yet it also says "Neverthe less there is little doubt that successive seismic surveys could have a cumulative effect on animal distribution and movements as a result of repetative behavioural disturbance" and further"the competent national authorities shall agree to the plan only after having ascertained it will not adversely affect the integrity of the site concerned"
How,by the way,does one mitigate the effects of intense drilling?

Ministers use the rhetoric of consultation and listening to the public point of view when they have no intention of letting it change their minds Government departments fail to recognise the deep concern felt for our natural environment which is being repeatedly violated for short term projects which,though time related,leave behind a permanent legacy of destruction. A European Special Area of Conservation set up to protect not only the valuable dolphins but also 8 other cetaceans species-whales orcas and harbour porpoises among them,means just that or why make the designation in the first place only in three years for it to be over--turned. That indicates a degree of expediency that is intolerable whether there exists a great need for further supplies of energy or not. No amount of charts,tables and figures to back up the case for the Dept. for Business Enterprise can contradict the essential fact that such an operation as indicated has enormous potential risks for the dolphin group.

Yours sincerely

Margaret Hunter