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Able - Proposed MEP, Killingholme

Associated British Ports (10015525)

Comment on the suitability of the Immingham Western Deepwater Jetty 'Triangle' site to support Curlew

And

Applicant's Comments on answers to Second Set of Examiners' Questions - Responses

(22 November 2012)

Terrestrial Ecology

Prepared by

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1. Comment on the suitability of the Immingham Western Deepwater Jetty 'Triangle site' to support Curlew.

1. During the hearings held on 16th and 17th October into the Compulsory Acquisition (see Summary of Applicants Case Made at the Compulsory Acquisition Hearings on 16th and 17th October, Para 99 p27) ABLE UK claimed that the Harbour Revision Order did not include any proposals to mitigate and/or compensate for the displacement of Curlew that would arise from the proposed Immingham Western Deepwater Jetty.

2. On October 5th 2012, prior to this discussion, I was able to visit the field in question and carried out a habitat survey of the site in order to assess the likely need for mitigation/compensation for displaced Curlew (and other waders).

3. From looking at the botany of the field it was clear that the entire field has been recently ploughed and reseeded as it supports a monoculture of rye grass *(Lolium perenne)*. The number of 'weeds' present in the sward indicated that the field and been agriculturally improved quite recently (within the past 12-24 months).

4. At the time of the visit the grass was high (40cm plus) and had not been mown for either silage or hay. The sward is uniform across much of the field with only small patches where the sward is more open. I understand that the field is not under any current agricultural tenancy, which may explain why it is not currently managed.

5. The current structure of the sward would preclude waders from roosting on the site. The sward is too high and dense to give the uninterrupted views they need in order to feel safe from predation. Within the immediate vicinity there are large areas of cattle grazed pasture that provide much more suitable conditions for species like curlew.

6. In its current state the field will not be suitable for roosting curlew.

7. Given the above, one then asks the question, would the loss of the triangle be significant if it were to be subject to development? Clearly if we base the assessment on the current condition its loss would not be significant as it is unsuitable for waders. Indeed previous management of the field may also have made the site unsuitable for roosting waders and this field may never have supported these species. While the previous baseline conditions may have been different from the current situation, I can only base my assessment on the current management of the field as data on previous cropping regimes are not available to me.

8. Based on the evidence of my site visit it is my professional opinion that the loss of the 'triangle' cannot be considered to be significant and no mitigation and/or compensation would be required. The loss of this field is insignificant both in terms of its current management and in the context of the Humber, given the large tracts of agricultural land that surround the estuary.

2 Responses to the '*Applicants Comments on answers to Second Set of Examiners' Questions'*

9. This response has been prepared in rebuttal to the criticism made of me in Paragraphs 4.3.1 to 4.3.6 of the document reference above.

1.1 Scoping para. 4.3.1

10. The scoping report ABP referred to during the hearings was Annex 11.1 of the ES "Extended Phase 1 and Scoping Study (Just Ecology) May 2006'. (ABLE's reference to Annex 8.1 of the ES seems to be an error as Annex 8.1 is the Estuary Modelling Studies Report).

11. ABP has not taken this report out of context, the scoping report identified the need to carry out foraging surveys and these were not done.

12. Paragraph 8.1.3 of this report highlights the need for bat surveys including foraging transects which have not been carried out. While this report may refer to a wider area this does not mean that the need for bat transect surveys are unnecessary and that the omission of these surveys is any less serious an omission. Best practice both now and at the time of the surveys would include establishing use by bats across the site particularly where potential roost sites have been identified as in this case.

1.2 Competency of the surveyors Paragraph 4.3.2

13. The surveyors used may well be experienced personnel, appropriately licensed and have not been the subject of previous criticism. This does not alter the fact that the bat surveys have not followed industry guidance and that the ExA does not have sufficient evidence before it to make an informed judgment as required by Regulation 9 of the Habitat Regulation 2010 (as amended).

1.3 Use of full spectrum detectors.

14. I have criticised ABLE's bat surveys for not using the most effective equipment available at the time of the survey. This criticism was directed at the 2011 surveys (see paragraph 4.14 of my Written Representation). The efficacy of full spectrum recording over zero crossing has been long established in peer review literature (Appendix 1) (Time expansion is a form of full spectrum recording).

15. The debate between full spectrum recording and zero crossing is not a matter of who manufactures the equipment but a fundamental difference between how the recorded signal is processed. There are many manufactures of both systems, the SM2 is full spectrum and the Anabat employs zero crossing.

16. Prior to the introduction of the SM2, full spectrum recorders were costly and not designed to be deployed remotely. SM2 is currently the most effective system available for detecting bats (at low cost) and Baker Consultants Ltd recognised the advantages and adopted the system in 2010. Baker Consultants Ltd does not sell SM2 bat detectors and does not receive commission on sales of SM2 bat detectors in the UK. Baker Consultants provides a support line for the SM2 in the UK as they have become acknowledged as experts in setting up and deploying the device. This is openly known in the industry and as pointed out by ABLE UK, is indeed advertised on Baker Consultants' website.

17. To suggest that my independence is compromised by my consultancy's adoption of new, more advanced technology is mischievous and misleading. The BATNEC principal (best available technique not entailing excessive cost) is well established and applies to professional ecologists as much as any other industry that relies on technology. Any experienced bat ecologist, familiar with the published research will recognise that full spectrum recording is superior to zero crossing. This and the low cost of the SM2, which is half the price of the Anabat, have essentially made the Anabat obsolete. Ecologists who use inferior equipment can be expected to face legitimate criticism. Fundamentally the use of old technology means that the surveys are not giving as accurate an understanding of the use of the site as could be obtained by using other devices.

Appendix 1

M. B. Fenton, Sylvie Bouchard, Maarten J. Vonhof and Joanna Zigouris (*2001*) TIME-EXPANSION AND ZERO-CROSSING PERIOD METER SYSTEMS PRESENT SIGNIFICANTLY DIFFERENT VIEWS OF ECHOLOCATION CALLS OF BATS.

Journal of Mammalogy: August 2001, Vol. 82, No. 3, pp. 721-727.

Abstract

We compared 2 bat detecting systems that use condenser microphones, 1 that performed computer analysis (Anabat6) of the output of a zero-crossing period meter (Anabat system) and the other that performed computer analysis (Canary 1.2) of the output of slowed-down (= time-expanded) recordings (Racal system). The 2 systems provided significantly different pictures of both numbers and characteristics (highest frequency, lowest frequency, and duration) of echolocation calls, whether recorded from free-flying bats in the field or from a stationary bat in the laboratory. Although the AnabatII detector was slightly more sensitive than the QMC S200 detector, the Racal system detected more echolocation calls than the Anabat system; the 19-dB difference in sensitivity was associated with a zero-crossing period meter in the Anabat system. Results suggest 2 recommendations. First, that analysis using zero-crossing period meters should not be used to describe echolocation behavior or calls of bats. Second, that studies of activity and use of habitat based on analysis using zero-crossing period meters should involve calibration against more sensitive bat-detecting systems.

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Choosing the 'correct' bat detector

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Direct field comparisons revealed that in any time period, a bat detecting system using zero-crossing period meter analysis (the Anabat II Bat Detector with Anabat ZCAIM and Anabat 6 software) detected significantly fewer bat echolocation calls than a time-expansion bat detecting system (Pettersson D980 detector with BatSoundPro software). Furthermore, the features of 81 echolocation calls (highest frequency, in kHz; lowest frequency, in kHz; duration, in ms) recorded and analyzed on both systems differed significantly. Regression analyses indicated no consistent,

frequently unpredictable differences between Anabat and Pettersson values for the lowest frequencies in echolocation calls, but a significant correlation for their highest frequencies and durations. In a variety of field settings in Israel and in southern Ontario, Canada involving both foraging bats and bats emerging from a cave roost, the Pettersson system recorded echolocation calls not detected by the Anabat system. When many Myotis bats were emerging from a cave roost in Israel, the Anabat system did not detect the calls of a Rhinolophus species or those of another vespertilionid which were detected by the Pettersson system. The differences in performance between the two kinds of systems reflect differences in sensitivity and operation between zero-crossing period meters and time-expansion systems. Data on bat activity or echolocation calls detected and analyzed by a zero-crossing period meter system like Anabat are not as consistent or as reliable as those obtained by a time-expansion system like the Pettersson. Differences in performance of bat detectors coincide with considerable difference in costs, from about US$ 650 for an Anabat system, to over US$ 2,000 for a Pettersson system, which involves digital time-expansion. A time-expansion system involving a high speed tape recorder will cost over US$ 30,000. When it comes to bat detectors and analysis systems, the quality of data that will be obtained is a direct reflection of cost - buyers get what they pay for.