

7th December 2006

**Response to 'Initial Comments'
raised by Natural England
in respect of
EDP's 'Thames Basin Heaths
Special Protection Area
(SPA) Study'**

Supplementary Statement

by

**Martin J Leay
BA(Hons) MSc, MIEEM,
MRAC, MLI, FRICS**

L_EDP273_01_051206_BJR_hkl

Author MJL Date 7/12/06
Approved
Checked

Copyright: No part of this publication may be reproduced by
any means without the permission of EDP



Contents

Section 1	Introduction	1
Section 2	Background and approach to EDP study	4
Section 3	Thames Basin Heaths SPA Study.....	8
Section 4	EDP's Detailed Study	14
Section 5	Transferability of research	16
Section 6	EDP Conclusions and Recommendations	21

Appendices

EDP 12	Natural England's 20 th November Interim Comments (with paragraph numbers)
EDP 13	EDP Notes of 30 th June 2006 Research Meeting with English Nature et al

Section 1 Introduction

Introduction

- 1.1 This supplementary statement provides a formal response by the Environmental Dimension Partnership ('EDP') to commentary made within Natural England's (NE) '*Initial Comments on Environmental Dimension Partnership's study of the Thames Basin Heaths Special Protection Area – 20th November 2006*'.
- 1.2 The NE commentary was presented to the Examination in Public (EiP) by NE on 21st November 2006, subsequent to EDP's 'Thames Basin Heaths Special Protection Area (SPA) Study – 24th October 2006' (the 'EDP Study') which was submitted to the EiP as new research of relevance to the consideration of the Draft Delivery Plan (DDP) and to support responses to the Inspector's Background Paper by EDP and others. All of EDP's research was devised, conducted and compiled within the required timescales for submission to the EiP (30th October 2006), in contrast to the timescale adopted by NE for the further research and submissions which will presumably seek to justify the NE stance set out within the DDP.
- 1.3 The initial commentary provided by NE has been received with mixed feelings - appreciation where constructive criticism has been made - and disappointment where incorrect and misleading rebuttal of the new evidence has been provided. In responding to those comments, EDP has endeavoured to focus on those matters of greatest relevance to individual Inquiry cases and the EiP, to assist the identification of a 'way forward' for the protection of the European site and its interest features, alongside the delivery of housing within the Thames Valley. However, due to the scope and untested nature of NE's comments, it has been necessary to provide detailed clarification, particularly with regard to the scientific basis of research undertaken by EDP.
- 1.4 Because of the limited time available to the EDP team between receipt of NE's initial comments and the deadline for supplementary submissions to the EiP, this should, in part at least, be read as an 'interim' statement – since there is almost bound to be more to be said once further NE material is produced.

Scope of this paper

- 1.5 In responding to NE's wide-ranging comments, the following headings have been employed to provide structure and clarify issues of relevance:

Section 2: Background and approach to EDP study;

The scope and study objectives for EDP's research in view of available time and resources / legal advice received in respect of the research and in forming conclusions with respect to the DDP / comparative references to the RPS Peer Review made by NE.

Section 3: Thames Basin Heaths SPA Study;

Use of Liley and Clark methodology and applicability to the Thames Valley / numbers of replicates used in the study / inclusion of publicly inaccessible areas / the availability and use of Bird data within the study.

Section 4: EDP's Detailed Study;

The statistical approach employed within the EDP study / choice of physical factors for analysis / footpath analysis / the significance of all factors ('bias and noise') in considering the findings of the study.

Section 5: Transferability of research;

Transferability of existing research findings based on species data and recreational data / the objective use of existing research in planning advice.

Section 6: EDP Conclusions and Recommendations.

References and Footnotes

- 1.6 Certain research documents are fully referenced in footnotes throughout this document. However for clarity, a number of key documents before the EiP are referred to in the text and in footnotes using the following abbreviations:

EDP Study. Leay, M., Rowlands, R., Williamson, A., Tofts, R. (2006) Thames Basin Heaths Special Protection Area Study: Report for Thames Valley New Homes Coalition and Home Builders Federation.
(*South East Plan EiP document reference TBH11*)

NE's Initial Comments. Cameron, R. (2006) Comments on Environmental Dimension Partnership's study of the Thames Basin Heaths Special Protection Area – 20th November 2006. Paper submitted to South East Plan Examination in Public on 21st November 2006.

RPS Peer Review. Buisson, R. G., Jones, K., Bailey, G. (2006) Review of Evidence Underpinning the English Nature Thames Basin Heaths Delivery Plan: Report to the Department for Communities and Local Government.
(*South East Plan EiP document reference TBH10*)

DDP. English Nature (2006) Thames Basin Heaths Special Protection Area: Mitigation standards for residential development (Draft). English Nature, Peterborough.
(*South East Plan EiP document reference TBH2*)

Liley and Clarke (2003). Liley D and Clarke R.T. (2003) The impact of urban development and human disturbance on the numbers of nightjar *Caprimulgus europaeus* on heathlands in Dorset, England. *Biological Conservation* 114, 219-230.

- 1.7 In order to provide a meaningful response, the original NE Interim Comments paper has been given paragraph numbers and is included in that revised format at **Appendix EDP 12** (this Appendix number follows in numbering sequence from those in the EDP Study). The NE paper is unchanged in all other respects.

Section 2

Background and approach to EDP study

Objectives of the EDP study

- 2.1 At **Appendix EDP 1** of the EDP Study, the final scope of the study is included, setting out in some detail the agreed approach and objectives. NE was provided with a number of opportunities¹ to comment on the scope of this work but were non-committal, greatly limiting the ability of the EDP Study to hone research objectives to the wider objectives of NE in providing guidance to the EiP. The claim that NE saw no detail of EDP's study before it was undertaken² is simply untrue.
- 2.2 Paragraphs 2.1 to 2.4 of NE's Interim Comments sets out the agency's understanding of the objectives of EDP's study as to:
- (i) Dispute the evidence base underlying the Delivery Plan;
 - (ii) Introduce alternative research findings; and
 - (iii) Conclude that a strategic plan to protect the SPA is not required.
- 2.3 NE's has apparently misunderstood the study objectives. EDP's study aimed to address serious concerns regarding the evidence base, or rather the lack of evidence, underlying the DDP approach, in particular the significant assumption made by NE that the findings of the Dorset research could be transferred and were directly applicable to the Thames Basin Heaths. As set out in the EDP study report, its objectives were:-
- i) To review and critique the basis and rationale for the EN DDP and approach set out within that document, as related to residential development within 5km of the TBH SPA, endorsing the approach to the Delivery Plan where appropriate; and
 - ii) To make recommendations for an alternative approach and mechanism by which statutory obligations under the Habitats Regulations can be fulfilled, while also enabling the delivery of appropriate residential development within 5km of the TBH.
- 2.4 It had been anticipated that short and medium term solutions would involve a combination of one or more of the following:-
- (i) Access management within the SPA;
 - (ii) Habitat provision / management within the SPA;

¹ Briefing note sent to Alan Law and Rob Cameron prior to joint meeting on 3rd May 2006. Requests for a written response were given at that meeting and subsequently in writing on 10th May (no written response was received until the 6th July). The Draft Study Outline was issued to Rob Cameron on 6th June prior to finalisation with a request for a written response, and although verbal comments were included, no written response was received. EDP also met with Rob Cameron in June and August 2006.

² NE's Initial Comments, Paragraph 3.2.6.

- (iii) Outwith the SPA, enhanced or new recreational access provision, where appropriate, as an alternative recreational resource to the SPA.
- 2.5 Concerns about the DDP were not only raised by EDP, but also by DCLG, which considered the DDP evidence base to be **"scant"**³, and most recently through the RPS Peer Review, which concluded that the Delivery Plan **"does not have a robust evidence base"** and that the **"statistical robustness of the relationship between measures of access pressure and bird populations in the recent studies cited in the Draft Delivery Plan are only weak"**⁴.
- 2.6 Through our work on a number of individual cases within the Thames Valley and in relation to the consideration of the DDP, EDP has endeavoured to work towards a planning outcome which is scientifically robust within the parameters of an observational study basis, and which identifies measures (be they guidance, mitigation or avoidance) which are proportional to any potential impacts to the SPA arising from new residential development (and presumed recreational pressure on the SPA) over and above that which already exists. The need for this to be done by the private sector, arose principally because, notwithstanding the onus on NE to substantiate the DDP approach, it had become clear by the Spring of 2006 that a proper and rigorous evidence base had not been used.
- 2.7 In addressing these serious and legitimate concerns, it was not the aim of the EDP Study to present an "alternative" evidence base but to add and expand on the existing baseline. Through this study, and in responding to the Background Paper, EDP has sought to assist both the EiP, and individual planning determinations, in addressing aspects of the existing evidence base and the weight which should be attached to it (particularly in relation to the DDP).
- 2.8 Given the SPA designation history and long forecast timetable for the South East Plan, it is of note that NE have only very recently commissioned further studies to address concerns relating to disturbance and access density. Notwithstanding the late introduction of this research to the EiP, EDP looks forward to discussing the findings in due course.
- 2.9 It is clear that the objective of the EDP Study was not to conclude that a strategic plan was not required. Indeed, the entirety of Section 6 of the EDP study is devoted to the suggestion of an alternative strategy that is now to be seen as more in line with the approach being promoted by NE for the Dorset Heathland European sites.

Legal Opinion

- 2.10 EDP remains of the view that expert legal opinion is invaluable to the consideration of protected sites, particularly at the European level where adherence and consistency are an absolute requirement.

³ Darren Richards, Government Office for the South East letter to Alan Law, English Nature of 18th May 2006.

⁴ RPS Peer Review. Paragraphs 0.1.7 and 0.1.10.

- 2.11 EDP's review of the sequential test⁵ is based on a combined long-running involvement with, and understanding of, the application of both the Birds and Habitats Directives and the related UK Regulations, as well as guidance at the national level. In respect of the Thames Basin Heaths SPA and Dorset Heaths SPA, EDP is involved in a substantial number of on-going application and Appeal cases for which Counsel's advice has been discussed and included in related representations. It is therefore not without legal reference that EDP has considered the material relating to the SPA issue in drawing together conclusions contained within the EDP Study. Further legal opinion is also to be submitted to the EiP and which matter is subject to further review at the second technical session between 18th–20th December 2006.
- 2.12 In respect of the Precautionary Principle, NE's interpretation as applied through the DDP is considered to be not consistent with, and misrepresentative of, the research findings alleged to have underpinned the conclusions within that document. The criticism of EDP's Study is symptomatic of NE's position and proposed strategy which has changed little since the publication of the 2005 version of the DDP. In this sense, the ongoing retrofitting of research findings to a previously identified planning position (as represented by the DDP) continues to confound the ability of the planning system (through emerging supplementary planning guidance, ongoing Appeal cases and the EiP) to respond positively and with sufficient flexibility to satisfy the requirement to protect the European site.
- 2.13 The commentary made within EDP's conclusions with respect to the Precautionary Principle and the DDP is that NE's approach is:
- (i) Incompatible with best available measures to ensure the integrity of the site is maintained and enhanced;
 - (ii) Inconsistent with comparable measures both within and outwith the Thames Basin Heaths SPA; and
 - (iii) Disproportionate to the known effects of urban populations on heathland species and habitat – especially when taking account of the proportionally small element of new residential development when compared with the existing dwellings in the area, and associated recreational visits to the TBH SPA – already estimated at 5.36 million per year (EN 2005 Visitor Access Patterns report, p.30).
- 2.14 NE have chosen to criticise the conclusions of EDP's Study by reference to the RPS Peer Review which contains a legal opinion provided by Bond Pearce⁶:
- "... on which the Peer Review fundamentally relies in testing and rendering its conclusions."***⁷
- 2.15 EDP considers that the commentary provides a perverse reading of the RPS Peer Review. The legal opinion appears to have been based on, and a test of, the findings of the RPS Review itself, although the purpose of this was to review the evidence

⁵ EDP Study, Paragraphs 2.10 to 2.23 which refer to Figure 1 of Circular 06/2005.

⁶ RPS Peer Review, Appendix J.

⁷ NE's Initial Comments, Paragraph 2.7.

underpinning the DDP itself. Based on discussions with the authors of the RPS Review⁸ it is understood that numerous potential alternative solutions were put forward for consideration by the review panel.

- 2.16 In any case, the Bond Pearce review has yet to be reviewed in any detail by the EiP. Also of note is that neither Bond Pearce, nor RPS, were able to take into account the substantial new evidence provided in the EDP study.

⁸ Buisson, R. (2006) Pers Comm.

Section 3

Thames Basin Heaths SPA Study

Introduction

- 3.1 NE alleges that the EDP Study is predicated on two '**highly flawed bodies of work**⁹ and includes reference to comments made by EDP in respect of reference research underpinning the DDP. This supplementary statement therefore sets out to provide clarity in respect of reaching conclusions based on the available evidence base. However, the following response is warranted following NE's comments in relation to the EDP Thames Basin Heaths SPA Study.
- 3.1.1 The evidence base cited in the DDP contains no ecological research specific to the heathland ecology of the Thames Basin. At the time of conducting the research, there was no justification for the NE suggested relationship between development, recreational pressure and the ecology of the Thames Basin Heaths SPA and in particular, the bird populations for which the SPA was designated.
- 3.1.2 At the time of drafting this statement, EDP's study is therefore the only research which has been undertaken to investigate the relationship between urban development and woodland around the periphery of the SPA, and bird numbers. Furthermore, EDP's Detailed Study into footpath density, habitat and bird numbers provided a further set of results on the likely positive effects of on-site land use and habitat management and the inter-relationships of habitat and bird numbers.
- 3.1.3 EDP's Study was based on the best available data at the time. As identified in the EDP study, it was not possible to detect a significant negative relationship between surrounding urban development and the presence of nightjar, woodlark and Dartford warbler on the SPA. Therefore, based on the information currently available (and in the absence of substantive further ecological / recreational research), this finding led to the conclusion that NE was misguided in assuming that the ecological research based on the Dorset Heaths could simply be transferred and applied to the different circumstances prevailing in the Thames Basin Heaths SPA. EDP maintains that the research foundations of the DDP should be treated with caution and weighted accordingly.
- 3.1.4 In criticising EDP's approach, NE has relied upon an unfinished and unpublished report due to be submitted to the EiP in early December. Whilst the introduction of any relevant new research should be helpful, the timing of submission, as well as NE's current evidence and criticisms of the EDP Study (with reference to unfinished and unpublished evidence), is clearly unsatisfactory.

⁹ NE's Interim Comments, Paragraph 3.1

Use of the Liley and Clarke Methodology

- 3.2 As acknowledged by NE, the evidence base informing the DDP relies substantially upon work by Liley and Clarke (2003). Despite NE's prior reliance on Liley and Clarke's work, it is claimed in the commentary that **"the method used by Liley and Clarke in Dorset [...] is much less appropriate for the Thames Basin Heaths."**¹⁰ A number of comparisons to Liley and Clarke are made in this paper as they are within NE's Interim Comments.
- 3.3 Review and use / application of the Liley and Clarke (2003) model is considered by EDP to be an entirely valid exercise, given that development of a 'model' is clearly intended to allow wider applicability than to just a single (Dorset) situation. The success of this application was demonstrated in the EDP study which identified that there was a very strong correlation between the predictions of the model and nightjar numbers in the Thames Basin Heaths. Given that NE rely on the findings of Liley and Clarke (2003) in highlighting the link between urban area and bird numbers (specifically in identifying the 400m zone)¹¹; it is regrettable and appears inconsistent that NE now chooses to demean the applicability of that model to heathland in the Thames Valley.
- 3.4 As noted above, NE were given opportunity to comment on the scope and methodology of the EDP Study and it is therefore disappointing that NE now claims to know of **"much more useful methods"**¹² which might have been employed in the research. At the 30th June 2006 joint research meeting (copy notes attached at **Appendix EDP 13**), EDP's ongoing research was known by EN to be underway – but the EN response at that time related only to further research that EN intended to commission at some future date.

Estimation of Existing Urban Development

- 3.5 NE have criticised the manner in which the EDP Study identified the extent of urban land surrounding the heathland stating that Liley and Clarke (2003) used postcode data to check their results. Again, NE appears to have failed to check the detail of the Liley and Clark study for the following reasons:
- 3.6 Liley and Clarke used aerial photography from 1997 at a zoom level of 3km to identify developed areas¹³. The accuracy of this resolution is considered by EDP to be less than in comparison to the use of a 1:25,000 Ordnance Survey base as used in the EDP Study, combined with air photos as a cross-check. Furthermore, Liley and Clarke concede that methodology included **"all buildings, warehouses and main roads"** within the developed area measurement; i.e. it was not just a measure of residential development.

¹⁰ NE's Initial Comments, Paragraph 3.2.6.

¹¹ Draft Delivery Plan, Paragraphs 1.4.2, 3.4.1, and Section 3.2.8.

¹² NE's Initial Comments, Paragraph 3.2.6.

¹³ Liley and Clarke (2003), Section 2.3, Page 221.

- 3.7 Liley and Clarke did use postcode data to obtain urban density figures¹⁴. However, this data was only ever used to correlate with the urban area figures. Significantly, Liley and Clarke found that **"...the density of residential properties was very closely related to the percentage cover of urban development with[in] the 500m buffer zone [...], even though the two variables were obtained from completely different data sources (i.e. postcodes and aerial photographs). It is therefore not possible within this analysis to distinguish between possible effects of human impacts (e.g. disturbance) as represented by the density of dwellings and possible effects of habitat area loss due to cover by urban developments."**¹⁵
- 3.8 Had the data not been strongly correlated, it may have been necessary for the EDP Study to consider the use of postcode data or another method of assessment. However, in light of the best available methods for identifying residential / development density as a proxy for recreational visits to / pressure on the SPA, within the timescales of the research, EDP's use of urban area coverage was entirely justified and consistent with the methodology of Liley and Clarke - who then went on to analyse percentage development by area as a proxy for disturbance and used such area measurement as the basis for study findings.
- 3.9 It is worth highlighting a note of concern as to the approach taken by Liley and Clarke in this respect. The authors chose percentage urban development by area within 500m as their measure of the combined effects of development/disturbance because, of all the 'urbanity' measures they calculated, this quantum (marginally) showed the strongest negative correlation with nightjar numbers. The problem with this is the danger of circular reasoning – it being assumed – or even sought (?) - that urban development has an adverse effect on bird numbers.
- 3.10 The measure of urban development selected appears, therefore, the one with the strongest negative effect. For the Liley and Clarke study, this is unlikely to have mattered much because all the measures were so strongly correlated with each other that the end result would have probably been the same whichever 'predictor' they used. However, if these strong correlations had not existed in all cases, one would not know which predictor to use. The RPS Peer Review has likewise highlighted the fact that postcode data have their limitations and that, significantly, Clarke et al (2005)¹⁶ found no significant correlations in Dorset between either total number of visitors or visitor groups and the number of houses within any fixed distance¹⁷.

Replicates

- 3.11 It is true that a larger sample size will, as a generality, make it less likely to overlook a real link between urban development and bird numbers should such a link exist. However, there is a trade-off between the greater certainty of not missing a real

¹⁴ Liley and Clarke (2003), Section 2.4, Page 221.

¹⁵ Liley and Clarke (2003), Section 3, Page 222.

¹⁶ Clarke, R., Liley, D. Underhill-Day, J. & Rose, R. (2005). Visitor access patterns on the Dorset heathlands. English Nature. Wareham. Dorset.

¹⁷ RPS Peer Review, Paragraph D3.1.3, Page 117.

urban effect (as identified in the Liley & Clarke study), and the unquantifiable level of uncertainty about how transferable the findings of the Liley & Clarke study are (owing to the clear and identified differences between the Thames Basin & Dorset Heaths). Although the Thames Basin Heaths do show less variation in urban development, they still show a considerable amount (**Table EDP 6**)¹⁸.

- 3.12 Notwithstanding NE's comments about the potential effects of small sample size¹⁹, it is clear that the sample size was more than sufficient to find very strongly significant relationships between heathland area and bird numbers, as well as percentage cover woodland in the buffer zone and woodlark numbers.
- 3.13 The sample size arrived at by Liley and Clarke was the result of circumstance and not experimental design, as suggested by NE. Liley and Clarke 2003 did not **"split the heaths in Dorset into patches"**²⁰. Rather, historical influences in both Dorset and the Thames Valley have resulted in a fragmented heathland, 'split' by those influences into heathland units of varying sizes and distances from one another. Liley and Clarke identified patches by grouping contiguous 200mx200m grid squares based on a County-wide survey; identifying 36 areas for analysis in the process²¹. The EDP research has provided a level of comparison of the extent of that fragmentation through analysis of the number and size of those fragments²².
- 3.14 The EDP Study considered a number of alternative approaches to analysing the Thames Basin Heaths, each of which might have offered a trade-off between identifying significant correlations and best reflecting the size and arrangement of heathland within the Thames Valley. As noted above, the greater the number of replicates the better, all other things being equal; and if it were possible to divide the sites into a greater number of 'natural units' as suggested by NE then that might be an improvement. However, problems would be likely to arise if confidence were lacking that the units could reasonably be treated as independent. It is maintained that the EDP Study provided a considered and entirely reasonable approach to analysing Thames Valley heathland in a similar and comparable format to Liley and Clarke. The fact and reality is that in the Thames Basin Heaths SPA, that entity is made up of 13 component SSSI areas, each separate from the others.

Publicly Inaccessible Areas

- 3.15 NE has sought, through their commentary, to highlight the issue of including land without public access as a shortcoming of the EDP Study. However, the dichotomy (of access vs no access) is rather simplistic and something that cannot readily be accounted for without background information on each of the component areas. Whilst MoD areas often have a degree of access for the public, non-military areas likewise may experience restricted or limited access due to barriers or a paucity of facilities. It is of note that Liley and Clarke (2002) found no significant relationship

¹⁸ EDP Study, Page 37.

¹⁹ NE's Initial Comments, Paragraph 3.2.6.

²⁰ NE's Initial Comments, Paragraph 3.2.9.

²¹ Liley and Clarke (2003), Section 2.2, Page 221.

²² EDP Study, Paragraphs 4.37 to 4.44.

between nightjar territory density on restricted versus open access sites in a study that, perhaps coincidentally, was not quoted in the DDP²³.

- 3.16 In respect of the unknown relationship between urban development and disturbance, the issue is of much greater relevance than to the EDP Study alone. The relationship between Liley and Clarke's (2003) favoured measure of urban development ('%urb 500') and disturbance is also unknown. Indeed, the study referred to in the RPS peer review, and the only study of which EDP is aware that relates surrogate measures of disturbance (e.g. amount of urban development in a 500m buffer) to actual disturbance (or at least number of people on the ground) is Mallord (2005)²⁴ which indicates that about half the variation in disturbance encountered is accounted for by the percentage urban development in the 500m buffer.

Bird Data

- 3.17 NE makes commentary on the use of bird data in both the study of the entirety of the heathland and also as employed for the detailed study of five heathland areas (EDP's Detailed Study). NE has previously produced population data for nightjar, woodlark and Dartford warbler in evidence for recent Public Inquiries relating to the Thames Basin Heaths SPA issue, which evidence data EDP had intended to use for the purposes of its research.
- 3.18 Obtaining this bird data proved to be a particularly difficult (and expensive) exercise since EDP was informed by NE that it would be necessary to contact the data supplier directly. Once the data had been subject to scrutiny by EDP a number of inaccuracies and flaws were identified which led to the need for a great deal of verification work and placed the delivery of the Study to the EiP deadlines under great pressure. It has since emerged that the summary data used by NE also included bird data provided separately by the RSPB. This data had not been made available to EDP, nor had its existence been communicated.
- 3.19 Subsequent to that exercise, NE informed EDP that the agency was **"happy to acknowledge the greater degree of accuracy"** of the data and stated that the verified data, and the method by which it was collected, **"represents an improvement on the technique used to supply data to English Nature and data will be supplied to Natural England by this methodology from this point forward"**²⁵. The group responsible for collecting and distributing the bird counts describes the data set as the **"best available"** and that it **"probably represents one of the best data sets available for any comparable site anywhere in the country"**²⁶.
- 3.20 In the Liley and Clarke study, numbers of nightjars on 29 of the 36 'heathland patches' were taken from National Bird Survey in 1992; **"...data from this survey**

²³ As cited in the RPS Peer Review, Paragraph 4.3.5.

²⁴ Mallord, J.W. (2005). Predicting the consequences of human disturbance, urbanisation and fragmentation for a woodlark *Lullula arborea* population. School of Biological Sciences. Norwich, UEA. PhD. Figure 6, Page 143.

²⁵ Dr Louise Bardsley, NE letter to EDP of 18th October 2006.

²⁶ John Eyre, 2Js Ecology email to EDP of 27th September 2006.

were not available for all the larger patches, due either to the patches not being surveyed or because the boundaries of the area surveyed did not necessarily match the boundary of the heathland patch. In such cases additional data were supplied by the RSPB Dorset Heathland Project [...] and from other local reserve managers.”²⁷ It is clear that Liley and Clarke were unable to rely on a single year or source of data due to practical reasons but endeavoured to use the best available data at the time. In fact, data obtained over a period of almost 10 years was used for the analysis to provide data coverage for the 36 'heathland patches' studied.

- 3.21 Whereas bird data analysed by Liley and Clarke originated generally from the 1992 survey, the habitat survey was conducted in 1996 by the former Institute of Terrestrial Ecology. Liley and Clarke therefore used data from a variety of sources and timeframes but felt able to justify their approach thus, **“Although there may be inter-year differences in nightjar numbers, inspection of the data for those few patches surveyed in different years suggest that nightjar numbers tended to be stable during the 1990s.”**²⁸
- 3.22 It is clear that NE feel able to rely on conclusions relating to the stability of bird populations (based on the best available data) over time but are unable to employ the same reasonableness in considering the EDP research which included nightjar data from 2004, and woodlark and Dartford warbler data from 2003. EDP's Detailed Study of five areas collated data over three years (2003-2005) in which the data recorder (2J's Ecology) noted that standardised methodologies had been employed and for which complete records were reported.
- 3.23 NE now suggests that only data collected in national surveys should be considered for analysis; **“analysis of bird data trends would ideally focus on national data sets which are collected in a standard methodology and recorder effort”**²⁹(EDP emphasis). In response, EDP recognises that the use of national survey data may have some benefits. However, the EDP Study used the best information available within the timescales and resources of the project. Of the information available, EDP utilised only the data sets for analysis that were most comprehensive following discussions with the data supplier, 2Js Ecology³⁰.

²⁷ Liley and Clarke (2003), Section 2.2, Page 221.

²⁸ Liley and Clarke (2003), Section 2.2, Page 221.

²⁹ NE's Interim Comments, Paragraph 3.3.11.

³⁰ EDP Study, paragraph 4.23.

Section 4

EDP's Detailed Study

Statistical Approach

- 4.1 NE has incorrectly stated that the habitat maps produced by EDP were derived from aerial photographs and that no dates for the aerial photographs were provided³¹. As is clearly set out in the EDP Study³², aerial photographs were used only as an initial mapping stage. The habitats identified were then confirmed through on-the-ground verification during the summer of this year (2006) which involved extensive field survey to confirm the habitats present and their coverage.
- 4.2 Had aerial photographs been the only method used for habitat mapping then EDP would, of course, agree that the date the aerial photograph was taken would be essential information since habitat type may have changed significantly in the intervening period. However, where ground 'truthing' is used, the date of the aerial photograph is irrelevant since the photography is only used as an initial tool to inform the on-the-ground surveying. Consistent with the wider heathland study, the EDP Detailed Study therefore used the best available data for analysis.
- 4.3 EDP considers the analysis provided useful substantiation regarding the positive relationship between habitat and species occurrence (as conceded by NE). It is accepted by EDP that it might have been useful to control for habitat in assessing the effects of both habitat and path length. The analysis of this data set could undoubtedly be taken further, and additional data collected. However, the EDP Study was constrained by the available timescales subject to submission to the EiP. It is therefore accepted in the EDP Study that the positive relationship between birds and paths may be an effect arising from a positive correlation between paths and habitats³³.
- 4.4 Regularly throughout its commentary on the EDP report, NE has commented that only five of the thirteen components of the SPA were subject to detailed survey and assessment. In an ideal world, it is recognised that all thirteen components of the SPA would benefit from detailed study; however it was only possible, within the time and resource available to EDP, to undertake detailed survey and assessment of five components. Nevertheless, the areas still accounted for over 35% of the entire Thames Basin Heaths SPA area. Surely this was a significant improvement in the evidence base, compared with the evidence on which NE chose to formulate its DDP approach?

'Bias and Noise'

- 4.5 NE have sought to promote the impression that the conclusions of the EDP Study are 'undermined' by the use of data within those studies. This observation fails to recognise the inherent challenges facing all observational studies of large

³¹ NE's Interim Comments, Paragraph 3.2.15.

³² EDP Study, Paragraph 4.25.

³³ EDP Study, Paragraph 4.84.

ecosystems. However, whilst NE is content to rely on research findings (even when the observations drawn are entirely anecdotal) in drawing together conclusions and recommendations for the DDP, the agency provides lengthy criticism on the alternative approaches which do not accord with the mitigation standards which have formed a constituent part of the DDP since its original drafting.

- 4.6 EDP recognises that it is always possible to improve on the design of studies to account for external factors which may, or may not, affect the identification of significant correlations in statistical research. It is quite possible that, given further time, resources and access to comprehensive datasets for habitats, species and recreational factors, further significant effects might be found. Conversely, given the already extensive recreational use made of the SPA, it may be that further development (as only a small percentage of the existing baseline) will result in no additional significant effect. EDP was limited by the timescales required to provide study findings in the manner related to the EiP programme.

Section 5

Transferability of research

Introduction

- 5.1 The interpretation of individual research findings, their relevance and applicability in relation to the key Annex 1 species (and the weight that should be attached to them in formulating planning guidance and mitigation measures) is fundamental to the conclusions of both the DDP and the EDP Study. This statement section therefore sets out to provide clarity in respect of reaching conclusions based on the available evidence base.
- 5.2 NE have described the EDP interpretation of NE's literature portrayal as **"incorrect and misleading"**³⁴. Despite the findings of the EDP Study and the RPS Peer Review, NE continues to reiterate the rhetoric that the DDP is underpinned by **"statistically robust evidence"**³⁵ despite numerous opinions to the contrary. It is, therefore, also necessary at this stage to submit the following rejoinder in respect of the inflexible manner in which NE continue to promote the DDP.

RPS Peer Review

- 5.3 Section 4 of the RPS Peer Review concludes on the way in which the DDP has interpreted and presented research findings in relation to each of the key species, and consequently drawn conclusions from them. In overview, the Peer Review identifies that **"...the statistical robustness of the relationships between the measures of access pressure and bird populations in the recent studies cited in the Draft Delivery Plan are only weak."**³⁶
- 5.4 However, further to commentary on the strength of the evidence base, the RPS Peer Review identified a number of examples of mistaken or ambiguous interpretation. Significant and concerning examples include the interpretation of Murison (2002)³⁷, Woodfield and Langston (2004)³⁸ and Mallord (2005):
- 5.4.1 In describing the evidence base underpinning the assessment of a significant adverse impact on the Annex 1 bird species, NE rely on the findings of Murison: **"A study of nightjars by Murison (2002) also noted that nightjar breeding success differed between heavily visited sites and those with little public access. Breeding success and nest density was lower on sites with higher levels of use. The proximity of paths to the nest also correlated strongly with nest failure, up to 225m from the path edge. Murison also noted that the study appeared to show a**

³⁴ NE's Initial Comments, Paragraph 3.3.4.

³⁵ Natural England (2006) 17th November Advice Note on the Peer Review of the Thames Basin Heaths Delivery Plan commissioned by the Department for Communities and Local Government. Page 6.

³⁶ RPS Peer Review, Paragraph 4.3.1.

³⁷ Murison G. (2002). The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England English Research Report 483, Peterborough.

³⁸ Woodfield E, and Langston, R. (2004) Literature review on the impact of bird populations of disturbance due to human access on foot. RSPB Research Report No.9, Sandy.

strong link between increased site disturbance, higher predator numbers such as corvids on disturbed sites, and subsequent high predation rates of nightjar nests³⁹ (emphasis added). The authors of the RPS Peer Review concluded to the contrary stating that, ***"The link between human disturbance and nightjar breeding success that is proposed in Murison (2002) and inferred in Liley and Clarke (2003) should be treated as being unproven."***⁴⁰

5.4.2 In identifying the linkages between dogs and disturbance effects, the DDP notes that ***"Woodfield & Langston (in press), as quoted by Underhill-Day (2005) recorded 12 flushing events of sitting nightjar, one of which was flushed twice by a dog. They calculated that on average, birds had a 12.2% chance of being flushed per day"***⁴¹ (emphasis added). In respect of this purely anecdotal evidence, the RPS Peer Review provides the important context to the observation; ***"The two [nightjar] nests that were proven to have had the adult flushed off by a dog (Woodfield & Langston, 2004b) both fledged young successfully."***⁴²

5.4.3 In describing the linkages between disturbance and woodlark numbers, the DDP cites Mallord, stating that the research ***"found that density of woodlarks appeared to be correlated to disturbance levels, with lower densities where disturbance levels were higher"***⁴³. This interpretation of the research findings clearly failed to report the context and / or conclusions of the study which may have significant implications for both the context of the Thames Basins Heaths (within a heavily populated area) and the potential success of access management; ***"Mallord produced a model that related access patterns to Woodlark populations. This predicted, but it is not highlighted in the Draft Delivery Plan or Appendix 6, that to create a significant effect on Woodlark population visitor numbers would have to double and be unmanaged such that they spread across the heathland. Managing that doubling of visitors such that it occurs along existing access routes and areas resulted in no significant predicted impact on the Woodlark population. A scenario in the model that redistributed current levels of disturbance resulted in a large increase in the Woodlark population"***⁴⁴ (emphasis added).

5.5 In light of the manner in which NE has appraised, selectively, the existing literature and evidence base to fit the mitigation recommendations of the DDP (most of which were determined in early 2005⁴⁵), criticism of the review of the further evidence base provided in the EDP Study would appear both wholly counter to the spirit of, and intended approach of, the precautionary principle – which is required to be applied

³⁹ Draft Delivery Plan, Paragraph 1.4.3.

⁴⁰ RPS Peer Review, Paragraph 4.3.7.

⁴¹ Draft Delivery Plan, Paragraph 1.4.7.

⁴² RPS Peer Review, Paragraph 4.3.8.

⁴³ Draft Delivery Plan, Paragraph 1.4.4.

⁴⁴ RPS Peer Review, Paragraph 4.3.12.

⁴⁵ English Nature (2005) 20th February 2005 edition of the Thames Basin Heaths Special Protection Area: Mitigation Standards for Residential Development.

where the evidence base is incomplete, but which approach should then be subject to ongoing review as further evidence is brought forward.

The EDP Study

- 5.6 EDP maintains that the statement made within the EDP Study⁴⁶ is both truthful and accurate in portraying the review of ecological literature in the DDP. Key paragraphs within Section 1 of the DDP⁴⁷ cite a number of publications to highlight the likely effects of urban development and recreational pressure on heathland. One only needs to review these key publications against the reference section of the DDP to see that the vast majority relate to heathlands, mainly in Dorset, other than the Thames Basin Heaths.
- 5.7 Furthermore, of the 36 references and 27 species cited for 'Effects of disturbance recorded for different species' listed at Appendix 4 of the DDP, nightjar and woodlark are listed once, and Dartford warbler is not listed at all.
- 5.8 By way of example, NE relies on reference to the 2005 Land Use Consultants study⁴⁸ which uses the Thames Basin Heaths as a case study. However, that study:
- (i) mainly relates to the direct physical loss or fragmentation of heathland rather than the potential effect of recreational disturbance;
 - (ii) fails to recognise other factors which have contributed significantly to heathland loss, such as changes in agricultural management practices; and
 - (iii) significantly, no documented evidence is cited to qualify the numerous assumptions and inferences made by the authors and hence the publication is not considered by EDP to provide any new evidence.
- 5.9 It is maintained that the literature review and conclusions contained within the EDP Study represent a balanced consideration and weighing up of the research base as considered by NE (then English Nature) in drawing up the DDP.

References to Dorset

- 5.10 Further to the manner in which the EDP Study was conducted, NE criticises EDP's recommendations regarding a potential way forward as set out in Section 6 of the study report. EDP is of the view that there is a need for consistency between any strategic approach for the Thames Basin Heaths and the Dorset Heaths in the application of the Conservation Regulations. EDP considers that, in principle, the Dorset approach is more pragmatic, fair and realistic. Notwithstanding the physical and land use differences between the Dorset and TBH context, EDP fails to see how two very different approaches could be adopted for the application of the same regulations, for instance;

⁴⁶ EDP Study, Paragraph 2.7.

⁴⁷ Draft Delivery plan, Paragraphs 1.1.5 to 1.1.6 and 1.4.1 to 1.4.7.

⁴⁸ Land Use Consultants (2005). Going, going gone? The Nature cumulative impact of land development on biodiversity in England. English Research Report 626, Peterborough

- (i) Why is it that the definition of the 400m zone around the Dorset Heaths takes account of significant barriers or restricted access points, whilst for the Thames Basin Heaths no account is given and the 400m is applied using a blanket approach?;
- (ii) Why it is acceptable for developer contributions in the Dorset Heaths to fund habitat and access management works within the SPA, but not within the Thames Basin Heaths?;
- (iii) Why are only two zones defined for the Dorset Heaths (400m and 5km), while there are three zones in the Thames Basin Heaths (400m, 2km and 5km)?;
- (iv) Why are there no SANGS standards applied in the Dorset Heaths, but there are within the Thames Basin Heaths?

5.11 These significant differences in approach are not considered to be due to the different "political landscape" between the two areas. EDP is actively involved in both areas and we are fully aware of the approaches being adopted by NE for the Dorset and Thames Basin Heaths.

Further Comments

5.12 The EDP Study contains a review of some of the principal differences between the ecology of heathland within the Thames Valley in comparison with that of Dorset. In the simplest terms possible, heathland within the Thames Valley is made up of fewer and larger fragments tending to be surrounded by a higher percentage of developed land. EDP maintains the view that there are fundamental ecological differences that are likely to significantly affect the transferability and applicability of the Dorset Heaths research to the Thames Valley.

5.13 By way of comparison, Liley and Clarke (2003) note that for the Dorset study: **"None of the five largest patches had a high percentage cover of developed land in the surrounding 500m zone"**⁴⁹. These five sites (14% by number) constitute over half of the heathland area studied by Liley and Clarke. Percentage cover of developed land was approximately 7%. This can be compared to the Thames Valley where the top 14% of sites (the top two) constitute less than 40% of the area studied with almost 22% urban cover. This simple comparison highlights the very important contextual differences which exist between the heathland in Dorset and that in the Thames Valley.

5.14 In summary, the weaknesses in the existing evidence base relate not only to the lack of evidence linking new housing to significant effects to the key heathland species but also to the inflexible and subjective way in which NE have chosen to interpret research. The approach to identifying findings and conclusions which might be transferred to the Thames Valley is applied wholesale within the DDP without any reasonable evaluation of the differences in the ecology of the fragmented heathland

⁴⁹ RPS Peer Review, Paragraph 4.3.12.

areas, the surrounding land use context, the existing level of population and recreational use, and the scope of the literature cited.

- 5.15 EDP maintains that NE have demonstrated an over-reliance on the transferability of research findings and a selective approach to identifying the quantum and extent of effects to bird species pursuant to the perceived effects of recreational pressure and new residential development within the Thames Valley.
- 5.16 The results of the EDP study provide further relevant evidence to be considered and weighed accordingly alongside all other research before the Inspector. In respect of the criticisms levelled by NE to the EDP Study, it is EDP's view that significant caution should be attributed to any research which is not comprehensive and specific to the Thames Valley or the three Annex 1 bird species for which this SPA was classified.

Section 6

EDP Conclusions and Recommendations

Conclusions

- 6.1 This statement provides a formal response by EDP to commentary made within Natural England's '*Initial Comments on Environmental Dimension Partnership's study of the Thames Basin Heaths Special Protection Area – 20th November 2006*'.
- 6.2 Through reference to documents and research currently before the EiP, this statement substantiates the conclusions of the October 2006 EDP Study. The following points have been identified:
- (i) NE appears to have misinterpreted the objectives of the EDP study in a manner that is considered disingenuous to the objective of seeking a long-term planning solution through the EiP. In this respect, NE have failed to consider the mounting weight of opinion that their approach is based on weak evidence which supports neither the assessment of likely significance of impact, nor the identification of mitigation measures consistent with the those identified in the DDP.
 - (ii) NE has made criticism of the EDP Study without due regard for the research on which they currently rely and particularly, the scope of the study, and in light of their reliance on anecdotal evidence within the DDP.
 - (iii) NE criticism of the legal reference against which the EDP Study was determined does not take account of EDP's extensive involvement on varied SPA matters with ongoing legal input. NE rely on the retrospective opinions of the legal opinion contained within the RPS Peer Review in making such criticisms – but which legal opinion itself is as yet untested – and itself may yet be found not to support the NE approach.
 - (iv) EDP can find no basis for the conclusion by NE that the application of the Liley and Clarke methodology to the Thames Valley heathland was either inappropriate or ineffective. Using the available data, a number of strongly significant correlations were found, many of which supported various aspects of the Liley and Clarks model. NE have misinterpreted the basis of the Liley and Clarke analysis which identified 36 patches but which did not consciously split the heathland patches within Dorset (this being a matter of circumstance).
 - (v) The use of 1:25,000 base mapping is considered to be more accurate than the methods employed by Liley and Clarke. Although Liley and Clarke did consider postcode data, their actual analysis was conducted using the figures for the overall percentage of all developed land. The EDP Study is considered to be consistent with that approach.
 - (vi) The use of bird data is consistent with Liley and Clarke (2003) and represents a considered approach to the use of the best available information at the time of conducting the study. NE's suggested reliance on national survey years is

considered to be an oversimplification of the issue and designed partially to bolster the chosen methodology of their forthcoming research publications.

- (vii) EDP accepts that with further time, resources and access to data, it would have been possible to provide further analysis upon which to enhance the SPA evidence base. As noted in the EDP Study, control for habitats and path length is one such area where improvements could be made by future research. However, the EDP Study used the best available data upon which to produce the only ecological research available specific to the Thames Basin Heaths.
 - (viii) Both the EDP Study and the RPS Peer Review set out significant concerns about the manner in which NE has drawn on the available evidence base in devising the DDP. The weaknesses in the current information base relate not only to the lack of evidence linking new housing to significant effects to the key heathland species but also to the somewhat inflexible and subjective way in which NE have chosen to interpret that research. EDP maintain that NE have demonstrated an over-reliance on the transferability of research findings and a selective approach to identifying the quantum and extent of effects to bird species pursuant to the perceived effects of recreational pressure and new residential development within the Thames Valley.
- 6.3 With respect to all of the data used during the research, it considered that this was the best available data available within the timescales and resources of the project. With respect to bird data, EDP is not aware of any other more comprehensive dataset than that used in the research and we understand that this is one of the best datasets of its kind in the UK. We would question why NE has not provided a more comprehensive data set prior to the EDP study if one was available – although NE itself has clearly used a lesser data set in its own previous proofs, but without seeing fit to acknowledge any limitations.
- 6.4 It EDP's opinion that the greatest improvement to the evidence base would now be to quantify actual usage and related disturbance of the sites rather than by assessing assumed disturbance on an indirect basis. Otherwise there will always be uncertainty about how closely linked are the surrogate variables and the resultant effect.
- 6.5 The EDP Study needs to be set against a background of an absence of location-specific consideration of disturbance issues and the timetable imposed by the EiP. It goes without saying that, given more time, EDP would have pursued matters further and that our ideas may have developed or been modified as a result. However, given that NE gave very late indication of the further research they intended to carry out, the EDP Study is considered to be fully justified.
- 6.6 In general, EDP is disappointed by the response provided by NE to the provision of new research of direct relevance to the matters currently before the EiP. Research undertaken on behalf of the Home Builders' Federation and the Thames Valley New Homes Coalition was conducted at the expense of those organisations and their members as a reaction to the paucity in the existing evidence base on which NE have sought to rely, or to justify their approach to the Thames Basin Heaths SPA.