



APPENDIX 1

for

The Conservators of Epping Forest's
Representations

on

Matter 1, Issue 5 (Legal Compliance)

APPENDIX 1A

Review of
Epping Forest District Council Local Plan
Habitats Regulations Assessment

On behalf of the City of London

By

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Contents

1 Qualifications and Experience	4
2 Background	6
3 Review of the air quality assessment.....	7

1 Qualifications and Experience

1. I am Andrew Baker and I am Director of the ecological consultancy Baker Consultants Limited, which I established in March 2009. I hold the degree of Bachelor of Science with Honours in Botany from the University of Nottingham (1986). I have been a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) since 1994.
2. I have been a practising ecologist for over 30 years, having worked throughout the UK for organisations such as English Nature (now Natural England), local Wildlife Trusts, National Parks, large civil engineering consultancies and private ecological firms. Much of my work involves providing expert advice to clients on Environmental Impact Assessments (EIA) and Habitats Regulations Assessments (HRA) of the impacts of proposals on international sites (Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites) and Sites of Special Scientific Interest (SSSI).
3. In my work in private practice my clients come from the public, private and voluntary sectors. Public sector clients include English Nature (as was), the Department of the Environment Transport and the Regions (as was), the Environment Agency and Local Planning Authorities. My work for private clients includes numerous residential projects ranging from small schemes of two or three dwellings to large urban extensions of 2000 plus units. I have also worked on many leisure projects (theme parks, caravan sites and hotels) and large port and airport developments.
4. I am actively involved in the development of the ecological profession. I have published articles on EIA and protected species legislation. I am a member of the United Kingdom Environmental Law Association (UKELA) and a former Convenor of its Nature Conservation Working Group. As Convenor of the working group I was responsible for coordinating comments on emerging wildlife legislation and policy such as the now superseded Planning Policy Statement 9. In 2003 I was a member of the then Highways Agency's (now Highways England) Translocation Steering Group, which subsequently published a best practice guide on habitat translocation. More recently I was a member of the steering group working with the British Standards Institute and the Association of Local Government Ecologists

to produce a ‘Publicly Available Specification’ that provides recommendations for the integration of biodiversity conservation into land use and spatial planning in the UK. This was the forerunner of British Standard BS42020.

5. I am currently a standing member on CIEEM’s disciplinary board and I am frequently called upon to hear cases that are brought against members of the profession, often chairing the hearings.
6. I have considerable expertise in the practical application of nature conservation law and I have published widely on the subject including (along with Browne Jacobson Solicitors) the 2nd Edition of ‘A Manual of Nature Conservation Law’ edited by Michael Fry. Through my involvement in the UKELA I have been actively involved in the development of nature conservation law and planning policy that affects ecological issues. I have specific expertise of the practical application of this area of law and I teach on European and domestic nature conservation law and its associated guidance and policy. In 2015 I was made a Fellow of CIEEM in recognition of my contribution to this field of work.
7. I have significant experience of the application of the Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations) and in particular those parts of the Habitats Regulations that relate to the protection of European sites (SPAs, SACs and Ramsar sites). I have completed numerous Habitats Regulations Assessments (HRAs) of local plans and projects on behalf of competent authorities (Local Planning Authorities) and ‘shadow HRAs’ of projects for private developers.
8. I am frequently called upon to give evidence to both local plan examinations and public inquiries into individual planning applications. I have also presented evidence to a Parliamentary Select Committee on the proposed ABLE UK port development on the Humber.
9. Many of the HRAs I have completed involve the assessment of potential impacts of recreational pressure upon populations of birds and the provision of mitigation measures to address any such potential impacts. I have presented evidence to public inquiries in relation to impacts upon birds particularly with regards to protected sites such as SPAs and SSSIs.

10. The evidence I have prepared and provided to this inquiry is true and I confirm that the opinions I express here are my true and professional judgements based on the scientific evidence and my professional experience.

2 Background

11. I have been asked by the City of London to carry out a review of the Habitats Regulations Assessment (HRA) of Epping Forest District Council Local Plan which was published on January 28th 2019. The Conservators of Epping Forest have made representations to the Examination-in-Public and have responded to the Inspector's Matters, Issues and Questions (MIQs) on a number of issues that relate to the effects of the Local Plan upon Epping Forest SAC.

12. Following the late publication of the HRA (**EB209**) of the Local Plan I have been asked to review the HRA and to give my views on the efficacy of the assessment with particular attention given to the impacts of declining air quality upon Epping Forest Special Area of Conservation (SAC). I have identified a number of key deficiencies of the Local Plan HRA,

- failure to assess the efficacy of mitigation which is relied upon in the AA,
- predicted autonomous reductions in air pollution are not substantiated by empirical data,
- failure to assess air quality impacts in-combination with other plans or projects,
- failure to correctly assess the implications of exceedance of critical loads or acknowledge the obligation of the UK to restore degraded SACs.

13. A number of recent cases handed down by the Court of Justice of the European Union (CJEU) are directly relevant to air quality assessments and must be taken into account when HRAs are compiled. The most relevant case is the joined cases C-293/17 and C-294/17 (7th November 2018) which concerned air quality

management around European sites in the Netherlands. Given my interest and experience in the practical application of the nature conservation law, I have reviewed this case in detail and examined the implication of the judgment on HRA assessments.

14. Given my considerable experience of HRA, I have also presented a general critique of the HRA of the Epping Forest Local Plan and given my views on its soundness, and whether it can be, in my view, relied upon.

3 Review of the air quality assessment

3.1 Burden of Proof

15. The HRA report has identified that the policies within the Local Plan will give rise to Likely Significant Effects (LSE) upon the Epping Forest SAC and therefore it is necessary to subject this impact pathway to Appropriate Assessment. The report identifies that the LSE cannot be ruled out because, taken in-combination, the change in pollutant concentrations will exceed 1% of critical levels for both oxides of nitrogen (NOx) and ammonia, which both contribute to nitrogen deposition. The 1% threshold is a trigger point that has been established by Natural England in its guidance document on the assessment of road traffic emissions¹.
16. Having concluded that effects on air quality at Epping Forest SAC must be subject to appropriate assessment the report sets out a number of scenarios which have been modelled (DS2, DS3, DS4 and DS5). While I cannot comment on the modelling process and how that modelling has been achieved, there are number of problems that I have identified with the assessment. It should be noted that scenarios DS3 and DS4 mitigation would lead to loss of habitat within Epping Forest SAC and have therefore been discounted.
17. The different scenarios relate to the traffic growth that the policies will generate with various mitigation measures that have been considered. DS2 is unmitigated, while DS3 and DS4 take into account physical mitigation to modify the road network and thereby reduced traffic congestion and emissions, and finally, DS5 uses the 2030 projected emissions factors '*as a proxy or sensitivity test for the non*

¹ Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitat Regulations June 2018

physical mitigation measures set out in the Epping Forest Local Plan through Policy T1 and others’.

18. It is unclear in the HRA as to which ‘other’ policies may have been taken into account here and what effect these policies may have. Policies DM2, DM21, DM22 and D2 are listed in the HRA (p154) as ‘*providing a positive contribution to atmospheric improvements*’, however examination of these policies show them to be vague as to their outcome and/or aspirational. It is therefore not possible to assess the efficacy of these policies. Policy T1 is almost entirely aspirational in nature. For the most part the policy talks of ‘promotion’ of sustainable transport, ‘working in partnership’, to ‘provide opportunities’, ‘minimising the need to travel’. The policy has few obligations and no measurable targets to reduce traffic or improve air quality. While this is not unusual for a local plan policy of this nature and in many situations perfectly acceptable, the burden of proof required by the Habitat Regulations is strict, something which been reiterated in the recent case law. At paragraph 126 of the Netherlands judgment it is stated that “*Moreover, according to the Court’s case-law, it is only when it is sufficiently certain that a measure will make an effective contribution to avoiding harm to the integrity of the site concerned, by guaranteeing beyond all reasonable doubt that the plan or project at issue will not adversely affect the integrity of that site, that such a measure may be taken into consideration in the ‘appropriate assessment’ within the meaning of Article 6(3) of the Habitats Directive (see, to that effect, judgments of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraph 38, and of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraph 51)*”² [my emphasis]. Elsewhere in the judgement the phrase *beyond all reasonable scientific doubt* is correctly used.
19. As mentioned in the paragraph this level of certainty had already been established in various preceding caselaw and is widely understood by most HRA practitioners. Reliance on Policy T1 and ‘other’ unidentified policies as mitigation is therefore not consistent with the burden of proof required by the Directive.
20. The lack of certainty ‘*beyond all reasonable scientific doubt*’ required by the Habitats Directive is also evident elsewhere in the HRA of the Local Plan. For example, Appendix D is a technical note on the air quality modelling. At paragraph

² Cases C-293/17 and C-294/17

4.1 of (page 7) of Appendix D, the report sets out how the scenarios have been calculated. A key part of the model is the projected ‘autonomous’ improvements that can be expected due to improvements in emissions from the vehicle fleet, the move to electric cars, etc. These autonomous reductions in emissions were a key part of the Netherlands case mentioned above and the judgment comments on whether such prediction can be relied upon when assessing impacts on European sites. The judgment concluded that such autonomous reductions cannot be taken into account if the expected benefits of such measures are not certain at the time of the assessment. As discussed above, the level of certainty required is for those measures to be '*beyond reasonable scientific doubt*'. No justification of these autonomous reductions is presented in the HRA and no scientific peer review papers are cited to support this approach. The only justification presented is that '*This approach is widely accepted within the professional air quality community.*' Following the Netherlands case there has been much discussion about the soundness of the approach that has been adopted by air quality professionals, and while I have been informed by some that such an approach can be justified, I have yet to see the evidence that proves '*beyond reasonable scientific doubt*' that the calculations of autonomous reductions are justified. In the absence of such evidence any HRA which adopts such an approach must be considered unsound.

21. Paragraph 2.40 of the HRA claims that by taking a more cautious approach to the modelling, it is therefore compliant with the burden of proof. However, this is not the case. Simply using the ‘recent precedent’ for air quality improvement and then applying a more cautious approach does not remove scientific doubt when the precedent is not based on scientific certainty. If the precedent has not been fully justified scientifically it is impossible to know whether the caution applied is sufficient, therefore reasonable scientific doubt remains.

3.2 In combination effect

22. The HRA of the Local Plan concentrates almost entirely on emissions that are generated from traffic arising from the local polices. There is a significant gap in the assessment in the way that it considers background levels of Nitrogen deposition and ammonia concentrations. The HRA report acknowledges that ammonia levels are dominated by agricultural emissions (e.g. para 6.22, second bullet point). Emissions are anthropogenic in origin and must therefore be taken into account when assessing the ‘in combination effects’ of a plan. The Netherlands case specifically addressed the role of agricultural contributions to

emissions and concluded that '*Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that the grazing of cattle and the application of fertilisers on the surface of land or below its surface in the vicinity of Natura 2000 sites may be classified as a 'project' within the meaning of that provision, ...'*'

23. The HRA also concedes that in all 'do something' scenarios the concentrations of ammonia will continue to exceed critical loads for Epping Forest (Appendix 1 Table 2). The HRA however makes no assessment of the effects upon the integrity of the site of these in combination effects.

3.3 Restoration and Exceedance of Critical Loads

24. There are a number of paragraphs within the HRA that suggest that because the site is already receiving excessive loads and levels of pollutants the increase generated by the Local Plan is of no consequence (e.g. para 4.12, 6.13, 6.14 and 6.4). Put simply, the SAC is already polluted and therefore further pollution is of no consequence.
25. Epping Forest is designated for number of habitats and species including beech forest 9120 Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion roburi-petraeae* or *Ilici-Fagenion*) which in turn supports epiphytes (both mosses and lichens) which are highly sensitive to nitrogen pollution. The JNCC website for the site reports, '*Although the epiphytes at this site have declined, largely as a result of air pollution, it remains important for a range of rare species, including the moss *Zygodon forsteri**'.³
26. The scientific community has established the concept of critical loads (or levels) to define the levels of pollution which are considered to result in harm to sensitive habitats or species. **Critical Loads** are defined as *a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge*". **Critical Levels** are defined as "*concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human*

³ <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0012720>

*beings, plants, ecosystems or materials, may occur according to present knowledge*⁴.

27. The corollary of these definitions is that where Critical Loads/Levels are exceeded significant harm cannot be ruled out. These definitions are important as it is a requirement of the Habitat Directive that authorisation for a plan or project may only be granted once adverse effects upon integrity are ruled out (i.e. one has to prove a negative (beyond all reasonable scientific doubt)) (Article 6 (3). If there is doubt about the effects upon integrity then permission must not be granted.
28. The integrity of a site is defined as the *coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated*⁵. The exceedance of critical loads/levels threatens the integrity of the site because it threatens the ability of the site to sustain the complex of habitat and populations of species for which the site is designated.
29. It is a requirement of the Habitats Regulations that the Appropriate Assessment must be done '*in view of the site's conservation objectives*' (regulation 105 (b))⁶. The conservation objectives for Epping Forest are supported by Supplementary Advice⁷ which addresses the issue of air quality. For each of the qualifying habitats there is the objective '*Restore as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System*'. Table 1 of the Supplementary Advice goes onto explain in more detail the targets.
30. The HRA of the Local Plan has demonstrated that the policies therein will lead to further exceedance of critical loads/levels at Epping Forest. Not only does this mean that the integrity of the site is further compromised but also that achieving the conservation objectives would be hindered. The argument put forward in the HRA is perverse. The Habitats Directive does not allow member states to abandon sites because they are already degraded.

⁴ http://www.apis.ac.uk/critical-loads-and-critical-levels-guide-data-provided-apis#_Toc279788050

⁵ Managing Natura 2000 sites, The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC 21.11.2018

⁶ The Conservation of Habitat and Species Regulations 2017

⁷ <http://publications.naturalengland.org.uk/publication/5908284745711616>

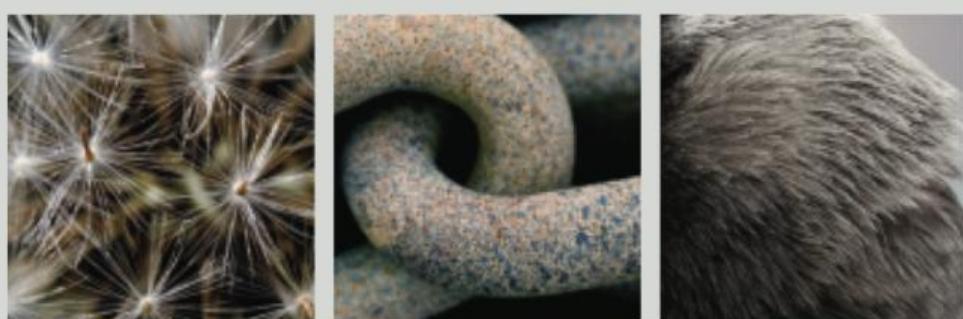
31. Under the Habitats Directive member states are required to restore habitats and species to favourable conservation status. Favourable conservation status is defined in Article 1 (i) where it is stated that as '*The conservation status will be taken as 'favourable' when : — population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and — the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and — there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis (Article 1 (i)).* Increases in atmospheric pollution above critical loads/levels therefore undermines restoration to favourable conservation status.
32. The judge who provided the opinion upon which the CJEU based its judgment on the Netherlands case set out her thoughts on this point where at paragraph 62 she considered exceedance of Critical Loads in the contexts of the Directive. She expressed that, '*In this regard, it seems difficult, if not impossible, to accept values that are higher than the critical loads. These are intended to define scientifically-based load limits for vegetation types or other protected assets, compliance with which means that pollutant deposition is not expected to have significant harmful effects even in the long term. Scientists have identified such critical loads for nitrogen for the protected habitat types under the Habitats Directive in the Netherlands.*'
33. Given the above it is clear that the Local Plan and the associated predicted emissions will continue to give rise to concentrations of ammonia that exceed Critical Loads in combination with other plans or projects. The Local Plan therefore fails the legal tests set out in the Habitat Regulations as there will be an adverse effect upon the integrity of Epping Forest SAC.
34. The same is also true of Nitrogen deposition rates which the HRA of the Local Plan also shows will exceed critical loads beyond 2030 (Appendix D Table 2).

3.4 HRA Conclusion on Air Quality

35. The conclusions set out in paragraph 6.24 of the HRA of the Local Plan are not supported by the evidence presented. At the second sentence, it is stated that '*The mitigation modelled as DS5 will effectively remove any meaningful delay in the forecast reduction of nitrogen deposition rates (and thus vegetation recovery) on almost all transects, the exception being transect N.*' As detailed above, the

mitigation is either not examined in detail or is not sufficiently certain as to be relied upon. Notwithstanding the uncertain mitigation scenario, DS5 does not bring nitrogen deposition levels down below critical levels even towards the end of the lifetime of the Local Plan. Rather, the Local Plan adds additional nitrogen loadings to Epping Forest SAC. The HRA has not addressed whether such additional loading (in combination with other sources) will have an adverse effect upon the SAC but rather entirely ducks that legal test. Given that critical loads are already exceeded and will remain so for the foreseeable future it is difficult to see how an HRA, properly assessed, could conclude that the integrity of the site was not compromised bearing in mind that the conservation objectives of the site seek to '*maintain or restore*' the features of the site. Elevated nitrogen deposition is therefore contrary to achieving the conservation objectives.

36. Levels of ammonia are also predicted to remain above critical loads for the length of the plan. At paragraph 6.24 of the HRA it is stated '*the positive effect of reducing NOx and nitrogen deposition over a larger area is likely to at least offset this increase in ammonia concentrations*' [my emphasis]. This statement does not provide the level of certainty that is required by the Habitats Directive; effects need to be certain not likely. The paragraph goes on to say '*the removal of land from agricultural production may reduce background ammonia concentrations.*' The effects of the removal of agricultural land are again uncertain, the effects have not been quantified nor have they been modelled. Such a statement is therefore entirely unjustified.
37. Having reviewed the HRA of the Local Plan, I am of the view that the assessment is fundamentally flawed and does not meet the legal tests set out in the Habitats Directive.



baker*consultants*

APPENDIX 1B

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STATEMENT OF KAT JOHNSON
EPPING FOREST DISTRICT COUNCIL LOCAL PLAN
REVIEW OF HABITATS REGULATION ASSESSMENT (AIR QUALITY)
CITY OF LONDON CORPORATION
POE-21891-19-176
APRIL 2019

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STATEMENT OF KAT JOHNSON
EPPING FOREST DISTRICT COUNCIL LOCAL PLAN
REVIEW OF HABITATS REGULATION ASSESSMENT (AIR QUALITY)
CITY OF LONDON CORPORATION
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TABLE OF CONTENTS

section 1	personal details	1
section 2	background	2
section 3	review of the air quality assessment	2
3.1methodology		2
3.2autonomous decrease in emissions		5
3.3impact on integrity of sac		7
3.4Burden of proof		8
3.5proposed mitigation		10

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SECTION 1 PERSONAL DETAILS

- 1.1 I am Kat Johnson and I practise as an Air Quality Consultant. I was awarded a Bachelor of Science degree in Geology by the University of Durham in 2003. I am a member of the Institute of Air Quality Management and Institution of Environmental Sciences and a Fellow of the Geological Society.
- 1.2 I have been continuously employed as an Environmental Consultant at IDOM Merebrook Limited ("Merebook"), which is a general Engineering and Environmental Consultancy, since graduating in 2003. I have specialised in air quality assessment since 2011.
- 1.3 I am an Associate Director managing a small team of consultants. During my career I have been involved in over 100 air quality projects as consultant and/or Project Manager. These include projects related to dust and particulate matter, traffic emissions, combustion plant emissions, chemical releases, odour and atmospheric dispersion. My experience includes a diverse range of sites including residential and mixed-use schemes, mineral extraction sites, industrial sites and healthcare sites.
- 1.4 As well as assessing potential impacts on human health my experience also includes input related to Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) of the impacts of proposals on international sites (Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites) and Sites of Special Scientific Interest (SSSI).
- 1.5 The evidence I have prepared and provided to this examination is true and I confirm that the opinions I express here are my true and professional judgements based on the scientific evidence and my professional experience.

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SECTION 2 BACKGROUND

- 2.1 I have been asked by the City of London Corporation acting as Conservators of Epping Forest to carry out a review of the assessment of air quality impacts within the Habitats Regulations Assessment (HRA) of the Epping Forest District Council Local Plan Submission Version (LPSV) (EB114) which was published on 28 January 2019.
- 2.2 The objective of this report is to comment on the suitability of the inputs and methodology used and the robustness of the conclusions in relation to potential air quality impacts of the Epping Forest District Council LPSV on the integrity of the Epping Forest Special Area of Conservation (SAC) both ‘in isolation’ and ‘in combination’ with other relevant plans and projects.

SECTION 3 REVIEW OF THE AIR QUALITY ASSESSMENT

3.1 METHODOLOGY

3.1.1 Modelled Scenarios

- 3.1.1.1 An allowance for ‘improvements in vehicle technology’ in modelled future year scenarios (with the exception of DS5) has been approximated by using DEFRA’s emission factors for the year 2023 (ten years earlier than the assessment year). The use of DEFRA’s 2023 emissions factors to represent an assessment year of 2033 is considered by AECOM to give a ‘more realistic impression’ of conditions in 2033 than assuming no improvement. This is a somewhat arbitrary approach compared to alternative approaches such as Air Quality Consultants’ Calculator Using Realistic Emissions for Diesels (CURED) methodology.
- 3.1.1.2 With reference to the table on page 15 of the HRA, the traffic data used for the ‘Projected 2033 baseline’ scenario is described as being *‘in the absence of anything other than ‘organic traffic growth (i.e. a small uplift to allow for changes in car ownership and economic upturn (emphasis added))’*. The ‘organic traffic growth’ is up to 4000 vehicles as AADT on some links. This is stated to be ‘skeleton TEMPro growth’ within the traffic modelling technical report (Appendix C) but does not appear to be consistent with NE’s request unless subsequent discussions have taken place (see 3.9 of NE response dated 29-03-18 in respect of the 2017 version of the HRA which states that *‘the baseline needs to be modelled for the situation with no increases in current traffic for the years between 2014 and 2033’*).
- 3.1.1.3 The modelled scenario DS2 has been described by AECOM as *‘the worst-case ‘in combination’ scenario’*. It is questioned whether this scenario can truly be considered ‘worst-case’ given that it allows for emissions reduction based on uncertain rates of decrease.
- 3.1.1.4 The DS3 scenario is reported to reflect physical mitigation measures at Wake Arms Roundabout, Honey Lane and Robin Hood Roundabout. The Conservators Regulation response states on page 15 that the Infrastructure Development Plan

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(IDP) references a change in the geometry of roads/junctions. However, the air quality technical note in Appendix D of the HRA (paragraph 2.6) states that no changes in road alignment were modelled. Although physical mitigation measures are apparently discounted in the HRA due to NE's concerns regarding the direct impact on the SAC, it is understood that the IDP still lists these as 'essential' improvements to support growth. The issue of road alignment is likely to require further consideration if the improvements are progressed.

- 3.1.1.5 AECOM refers to DS5 as '*taking non-physical infrastructure improvements associated with the Local Plan into account*'. In reality this scenario simply uses lower emission factors which are not specific or relatable to any of the 'mitigation measures' outlined in paragraph 6.18.
- 3.1.1.6 NE's request for a scenario which allows the impact of the LPSV to be assessed 'alone' is outlined in paragraph 3.7 of their advice dated 29 March 2018. The full impact of the LPSV in isolation cannot be assessed from the scenarios presented as the currently consented EFD developments are combined with 'all HMA' consented developments in the 'Do Minimum' scenario. The LPSV future growth is then assessed within DS2 but this is 'in combination' with all growth from the preceding scenarios. From the scenarios modelled, it is not possible to ascertain the total increase in traffic associated with LPSV from the start of the plan period (from 2011 or 2014 to 2033) as the modelled scenarios split the increase into those developments with planning permission and those without. Only the 'in combination' impacts have been presented in the HRA.
- 3.1.1.7 As an aside, it is noted that the traffic scenario for the 'Do Minimum' scenario is described differently in Appendix C (traffic technical report) compared to the main text of the HRA (with the latter including all existing permissions within the HMA not just those within EFDC).
- 3.1.2 Assessment Criteria
 - 3.1.2.1 The HRA only considers nitrogen deposition and gaseous ammonia in detail. Whilst annual mean NOx concentrations are also presented in the HRA, their potential effect on the integrity of the SAC is not discussed. There is also no evidence that acid deposition has been considered.
 - 3.1.2.2 Section 6.5 of the HRA states '*Since the principal ecologically significant role of NOx is as a source of nitrogen the analysis in this chapter focusses on what effect this may have on nitrogen deposition rates, which also factors in the role of ammonia as a source of nitrogen. Focussing on nitrogen deposition rates in ecological interpretation, rather than relying on scrutiny of NOx concentrations in atmosphere, has the advantage of being habitat specific and more directly relatable to effects on the vegetation. This is because the critical level for NOx is entirely generic; in reality different habitats have varying tolerance to nitrogen*'. It is widely accepted that both critical loads and critical levels should be assessed. This criticism was also raised in

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the Centre for Ecology & Hydrology's (CEH) response to AECOM's assessment in the Ashdown Forest case (paragraph 140).

3.1.3 Model Output

3.1.3.1 It is not clear if the modelled transects coincide with queues i.e. if they are representative of worst-case locations. It would have been prudent to model concentrations on both sides of the road along the transects.

3.1.4 Deposition Velocities

3.1.4.1 The deposition velocities which have been assumed are for grassland as opposed to forests. The resulting deposition fluxes using the deposition velocities for forest would be significantly higher than those reported in the HRA.

3.1.4.2 Section 6.4 of Appendix D of the HRA refers to the ADMS-Roads User Guide which provides deposition velocities for both NO₂ and NH₃ for short vegetation such as grass (see below).

Table 1: ADMS-Roads User Guide extract below (pg.115)

4.5.4 Guidance on dry deposition parameters

Dry deposition velocities depend on the nature of the surface. **Table 4.3** contains suggested deposition velocities for short vegetation (such as grass) for NO₂, NO, SO₂, and NH₃.

Parameter	NO ₂	NO	SO ₂	NH ₃
deposition velocity (m/s)	0.0015	0.00015	0.012	0.02

Table 4.3 – Suggested deposition velocities for short vegetation.

3.1.4.3 Although not explicitly stated as the source of these figures, the deposition rates quoted within the user guide are consistent with the deposition velocities recommended within the Environment Agency guidance document known as AQTAG06 (March 2014) update. However, AQTAG06 also provides recommended deposition velocities for forest which are higher than those for grassland and which would result in the calculation of significantly higher deposition fluxes than those presented in the HRA (see below).

Table 2: Recommended dry deposition velocities from AQTAG06

Chemical Species	AQTAG06 recommended deposition velocity (m.s ⁻¹)	
NO ₂	Grassland	0.0015
	Forest	0.003
NH ₃	Grassland	0.02

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	Forest	0.03
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- 3.1.4.4 It is noted that AECOM has used an even lower deposition velocity for grassland of 0.001 m/s for NO₂ as opposed to the 0.0015 m/s suggested in both the ADMS-Roads user guide and the AQTAG06 guidance (2014), which is reportedly taken from the older DMRB guidance (2007). This is three times lower than the deposition velocity recommended in the AQTAG06 guidance for forest (0.003 m/s).
- 3.1.4.5 The deposition velocity of 0.02 m/s reportedly used by AECOM for NH₃ is 1.5 times lower than that recommended by the AQTAG06 guidance for forest (0.03 m/s).
- 3.1.4.6 A further issue appears to be the application of a ‘factor of 2’ to NH₃ concentrations to replicate a deposition velocity of 0.02 m/s. Unlike the relationship between NO₂ concentration and nitrogen deposition (which is explicitly stated in the DMRB guidance (Annex F, Step 5) as ‘1 ug/m³ of NO₂ = 0.1 kgN/ha/yr’), the factor of 2 for NH₃ appears to have been calculated by AECOM (Section 6.4 of Appendix D of the HRA). Having performed the calculations myself it appears that AECOM may not have taken into account the relative nitrogen contribution of NH₃ compared with NO₂ which results in a factor of 5.2 (i.e. 1 ug/m³ of NH₃ = 5.2 kgN/ha/yr), 2.5 times greater than the factor used by AECOM even in the grassland scenario.
- 3.1.4.7 The consequence of using deposition velocities that are representative of grassland rather than forest, together with the use of an apparently incorrect factor to calculate nitrogen deposition from ammonia concentrations, is that nitrogen deposition will have been significantly underestimated within the HRA. This means that the delay in achieving critical loads across the SAC will be greater than reported.
- 3.1.5 Sensitivity Testing
- 3.1.5.1 No consideration has been given to a scenario which assumes no improvement in background concentrations/deposition fluxes and emission factors in future years as a sensitivity test.
- ### **3.2 AUTONOMOUS DECREASE IN EMISSIONS**
- 3.2.1 In the Netherlands Air Quality Judgement⁸ one of the key issues was whether it was appropriate for an Appropriate Assessment to take into account autonomous measures (i.e. those not part of the issue being considered). The Court of Justice of the European Union (CJEU) ruled that such autonomous reductions cannot be taken into account if the expected benefits of such measures are not certain at the time of the assessment. Advocate General Kokott was the judge who provided the opinion on which the CJEU based its judgement in the Netherlands Air Quality Case. Her opinion provides further detail and clarification on the individual issues than are

⁸ Judgement of the Court (Second Chamber) of 7 November 2018 – Request for a preliminary ruling from the Raad van State Joined Cases C-293/17 and C-294/17

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contained within the judgement itself. Reference is made to the Kokott opinion in subsequent sections.

3.2.2 NOx

- 3.2.2.1 AECOM refers to DS2 as the worst-case ‘in combination’ unmitigated scenario. In assuming autonomous decrease in NOx emissions to 2023 it may be questioned whether DS2 can truly be considered ‘worst-case’. As noted above AECOM does not appear to have modelled a scenario which assumes no autonomous decrease in future NOx emissions as a sensitivity test which Air Quality Consultants (AQC) did in the case of Ashdown Forest.

3.2.3 NH₃

- 3.2.3.1 Paragraph 6.12 of the HRA states *‘No net reduction in ammonia concentrations in atmosphere is forecast by 2033 (represented by the difference between DS2 and the 2014 Baseline). This is because there is no existing improving trend for ammonia and no scientifically robust basis to postulate an improving baseline or improved emission factors for ammonia (unlike for NOx)’* (emphasis added).
- 3.2.3.2 It is not therefore a conservative assumption (as AECOM claims in paragraph 4.1 and 4.2 of Appendix D of the HRA) to assume that DEFRA’s emission factors for NH₃ in 2023 are representative of conditions in 2033 (the year of assessment) as, by their own admission, there is no scientifically reasonable argument to assume any decrease in NH₃ emissions in future years (even to 2023).
- 3.2.3.3 With reference to Section 4.12 of the HRA, even with the assumed reduction to 2023, *‘the effect of growth ‘in combination’ (which is dominated by growth in Epping Forest District between 2014 and 2033) is to cause a deterioration in ammonia concentrations’*.

3.2.4 Background Nitrogen Deposition Rates

- 3.2.4.1 With reference to Section 2.36 of the HRA, AECOM has assumed a decrease in background nitrogen deposition in future years up to 2023 (decreasing by 2 % year on year in accordance with Design Manual for Roads and Bridges (DMRB) guidance). No decrease is assumed after 2023. AECOM states *‘It can be seen from the graphs presented in Figure 5 that such an allowance would be in line with recent historic improvements within the Epping Forest area and is likely to prove conservative given real-world emissions testing has now been introduced’*. The graph provided as Figure 5 shows trends in oxidised nitrogen (from NOx).
- 3.2.4.2 However, footnote 30 on page 20 states *‘Total nitrogen deposition (i.e. oxidised nitrogen from NOx plus reduced nitrogen from ammonia) within the same 5km grid square covering the SAC actually increased by 2-3 kgN/ha/yr over the period 2005-2015. However, APIS shows that this was due to an increase in reduced nitrogen from ammonia, deriving principally from agriculture.... It is therefore reasonable to postulate an improving trend in total nitrogen deposition within 200 m of the*

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roadside due to improving NOx concentrations, continuing the existing trend in oxidised nitrogen deposition seen across the SAC' (emphasis added).

- 3.2.4.3 The footnote goes on to give a detailed explanation of source apportionment in relation to reduced and oxidised nitrogen. However, background deposition rates contained within APIS do not, by their very nature, include the influence of local road sources therefore I do not consider the justification that '*within 200m of the roadside, where the effect of local road traffic will be greatest, trends in oxidised nitrogen can be expected to be more representative of total nitrogen deposition than they are over the 5km grid square as a whole*'. In my opinion it is inappropriate to assume a 2 % annual decrease given that APIS indicates total nitrogen deposition is increasing across the SAC.
- 3.2.4.4 Even assuming the 2% annual decline in background nitrogen deposition, the critical load is still exceeded along all modelled transects at the end of the LPSV period (2033) even in the absence of growth (represented by the projected 2033 baseline scenario). Therefore, with reference to the Kokott opinion at paragraph 98 '*it is not sufficient, for the purposes of approval of additional nitrogen deposition, if deposition declines overall, but the land in question is still overloaded with nitrogen. Mere forecasts regarding the future effects of those measures and the expected decrease in nitrogen emissions may not be taken into account in the decision on the approval of additional nitrogen deposition*'.

3.3 IMPACT ON INTEGRITY OF SAC

3.3.1 Delay in Rate of Recovery

- 3.3.1.1 Within sections 6.9 and 6.10 of the HRA AECOM comments that '*growth in combination' (which is dominated by growth in Epping Forest District between 2014 and 2033) does not make the air quality situation worse but rather delays the date at which the European site would be forecast to fall below the critical load'* (emphasis added). This is '*deemed as a precaution to constitute an adverse effect on the integrity of the SAC (i.e. the ability of the SAC to achieve its conservation objectives)*'.
- 3.3.1.2 It is noted that critical loads are not achieved at the end of the plan period in any of the scenarios assessed as the assumed background deposition rate is above the critical load regardless of the additional traffic emissions arising from implementation of the LPSV developments.
- 3.3.1.3 NE's NEA001 guidance states at paragraph 5.54 that '*the longer or more uncertain the feature's likely recovery time from an impact, the more difficult it may be to demonstrate no adverse effect on integrity*'. Full recovery may take several years after deposition rates fall below the critical load. This supports the Conservators point in their Regulation 20 representation at paragraph 16.1.3.6 (pg.22) in relation to the 2017 version of the HRA.

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3.3.1.4 The delays presented in the HRA are up to 10 years within 5 m of the roadside and up to 7 years within 20 m of the roadside. I have highlighted at Section 3.1.4 above that the use of higher deposition velocities for forests (as opposed to those for grassland which have reportedly been used in AECOM's assessment) would result in even greater delays than those reported in the HRA. Additionally, the use of an incorrect factor to estimate deposition rates from ammonia concentrations will have led to an underestimation of nitrogen deposition from ammonia (by 2.5 times) even in the grassland scenario.

3.3.2 Biodiversity Net Gains

3.3.2.1 With reference to NE's MIQs response at paragraph 4.2.3, '*All developments should seek to deliver net gains for biodiversity and allocation policies should seek to protect any key ecological features identified*'.

3.3.2.2 Section 6.14 of the HRA states '*Overall it is therefore considered that the elevated ammonia concentrations forecast for DS2 will not result in an adverse effect on the integrity of the European site (i.e. the coherence of the site's structure and function and its ability to meet its conservation objectives) due to the limited physical extent of the worst-case dose (typically 5m from the roadside), the fact that the most ammonia-sensitive lichens are already likely to have been affected by the elevated background concentrations which are overwhelmingly dominated by non-road sources and the fact that this background may be reduced (and thus the contribution of traffic offset) by the Local Plan taking land out of agricultural production for development*' (emphasis added). Firstly, I do not consider it appropriate to argue that additional ammonia concentrations will not adversely affect ammonia-sensitive lichens where they are already likely to have been affected by elevated background concentrations. In such circumstances, additional contributions would inhibit recovery. Secondly, stating that background concentrations 'may be reduced' does not, in my opinion, provide the required level of certainty, and thirdly, with reference to the Kokott opinion, it is inappropriate to 'offset' traffic emissions against perceived improvements a) where the expected benefits are not certain at the time of assessment and, b) where the land in question is still overloaded with nitrogen.

3.4 BURDEN OF PROOF

3.4.1 An Appropriate Assessment must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the plans or projects proposed on the protected sites in question.

3.4.2 There are numerous references within the HRA where the justifications provided are not considered to provide the required level of certainty. Key examples are included below:

The use of DEFRA's 2023 emission factors as 'worst case'

3.4.3 Within Section 2.38 AECOM states '*Effectively, the modelling for all scenarios except DS5 therefore assumes that the shift in vehicle fleet composition (from more polluting*

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(to less polluting vehicles) that Defra expects to occur over the next five years will actually take fifteen years to achieve'. This is considered by AECOM to be 'highly cautious'. This may be a reasonable assumption but there is still uncertainty associated with it and I dispute that this approach can be considered 'highly cautious'.

- 3.4.4 Section 2.40 states that '*The CJEU [in the Netherlands Air Quality Judgement] ultimately ruled that it was legally compliant to take autonomous measures into account provided the benefits were not uncertain. They defined uncertain as 'because the procedures needed to accomplish them have not yet been carried out or because the level of scientific knowledge does not allow them to be identified or quantified with certainty'. Note that previous case law on the interpretation of the Habitats Directive has clarified that 'certain' does not mean absolute certainty but 'beyond reasonable scientific doubt'. As explained above, the allowance made for improvements in baseline NOx concentrations and nitrogen deposition rates is notably lower than that which would be justified by recent precedent and is associated with procedures that have already been implemented (i.e. the introduction of vehicles into the fleet which are compliant with increasingly stringent emissions standards up to Euro 6/VI). Therefore, they are scientifically reasonable'*. The outcome will not be wholly dependent on technical performance, there will also be political and economic influences. Whilst it is a reasonable assumption that improving technologies will help to reduce NOx emissions in future, the rate of decline is still uncertain.

Offsetting

- 3.4.5 At Section 6.24 AECOM states that '*The positive effect of reducing NOx and nitrogen deposition over a larger area is likely to at least offset this increase in ammonia concentrations and the removal of land from agricultural production may reduce background ammonia concentrations*'. This statement is not supported by any quantitative analysis and is not therefore considered to provide the required level of certainty, especially as the current trend in total nitrogen deposition across the SAC is increasing. It is considered that the influence of local agricultural land on total anthropogenic contributions to background concentrations is likely to be small.

The 'with mitigation' scenario (DS5)

- 3.4.6 AECOM refers to the modelled scenario DS5 as '*taking non-physical infrastructure improvements associated with the Local Plan into account*'. Section 6.20 of the HRA acknowledges that DS5 is only a 'proxy or sensitivity test' to reflect a degree of reduction in emissions relative to the other modelled 'in combination' scenarios. With reference to the table on page 15 of the HRA, DS5 includes an 'estimate' for the air quality benefits of non-physical measures in the LPSV, notably Policy T1.
- 3.4.7 The use of the term 'with mitigation' to describe scenario DS5 could be considered misleading as it implies that specific 'mitigation' measures within the LP are being assessed here whereas in reality, the DEFRA emission factors for 2030 (as opposed

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to those for 2023 which are used in the other ‘in combination’ modelled scenarios) are being used as a proxy for the potential reduction in emissions associated with the policies outlined in paragraph 6.18. AECOM states that ‘a reasonable outcome’ would be for these interventions to result in total NOx concentrations that ‘better reflected’ the DEFRA emission factors for 2030 rather than 2023. In my opinion this approach lacks the required level of certainty.

- 3.4.8 The robustness of AECOM’s conclusion at Section 6.24 which states *‘The mitigation modelled as DS5 will effectively remove any meaningful delay in the forecast reduction of nitrogen deposition rates (and thus vegetation recovery) on almost all transects, the exception being transect N’* could therefore be called into question.

3.5 PROPOSED MITIGATION

- 3.5.1 In the table on page 15 of the HRA, in relation to modelled scenario DS4, AECOM states that ‘Following initial modelling runs in late 2018, it was clear that the potential physical mitigation measures at Wake Arms Roundabout (essentially improving the capacity of the traffic island) would not achieve the hoped-for air quality benefits’. This is contradictory to paragraph 6.15 of the HRA which references ‘large forecast improvements’. However, it is understood that the physical mitigation measures proposed within DS4 are considered by NE to have an unacceptable direct impact on the SAC and have been discounted on that basis.
- 3.5.2 In relation to Matter 4, Issue 6 NE state at paragraph 6.2.1 of their MIQs response that *‘Natural England recognises and supports any proposal to move towards more sustainable travel. Note, however, that we do not consider the “step change” [towards sustainable travel] to have sufficient certainty to satisfy the requirements of the Habitat Regulations and cannot therefore be regarded as mitigation’*. The LPSV policies quoted at paragraph 6.18 of the HRA rely heavily on a shift towards sustainable travel.
- 3.5.3 In Section 6.24 of the HRA AECOM concludes that *‘it is considered that the delivery of the planned mitigation will ensure that no adverse effect on the integrity of the SAC will arise’*. As discussed in Section 3.4.8 above, the LPSV mitigation measures are not specifically represented in the modelling. Additionally, a shift towards sustainable travel (represented by Policy T1) in the absence of LPSV growth (i.e. applied to existing residents only) would enable critical loads and levels to be met significantly earlier and hence the recovery of the SAC would be expedited.
- 3.5.4 Within the LPSV, Policy DM22 (Air Quality) requires that larger developments provide contributions to air quality monitoring. With reference to NE advice dated 29 March 2018 at paragraph 5.1 *‘Monitoring is not acceptable as a form of mitigation to overcome uncertainty when carrying out the integrity test (Tyldesley & Hoskin, 2008). Where a project proponent suggests a monitoring package with the aim of finding out more about possible effects as a way of mitigating those effects, this would not be acceptable’*. The emphasis in DM22 in respect of financial contributions to air quality monitoring cannot be considered as ‘mitigation’ of the adverse impact on the

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integrity of the SAC. It is suggested that the wording of Policy DM22 and/or accompanying Supplementary Planning Guidance (SPG) should provide more focus on securing financial contributions to fund specific air quality improvement measures either on-site or via local/regional initiatives.

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APPENDIX 1C



Review of Epping Forest Local Plan Habitats Regulations Assessment in Relation to Recreation Pressure and Urbanisation

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Contents

Contents	ii
1. Introduction.....	3
Overview 3	
Summary of key concerns 4	
2. Review of HRA.....	6
Lack of clarity on extent of impacts 6	
Lack of assessment in relation to mitigation 7	
The relative role of SANG and SAMM type measures for mitigation 7	
Reliance on SANG to rule out adverse effects on site integrity 8	
Reliance upon a framework of policies that do not offer robust protection 9	
Loss of existing greenspace 9	
Lack of assessment of other urbanisation effects 10	
3. Conclusions.....	10

1. Introduction

3.5 Overview

- 1.1 This report has been prepared by Footprint Ecology for the City of London Corporation, acting as The Conservators of Epping Forest on a charitable basis. The Conservators manage the forest in accordance with the Epping Forest Act of 1878. Epping Forest is of international importance for its wildlife, with the benefit of legal designations at both the European and national level. It is a Special Area of Conservation (SAC) under the European Habitats Directive 1992, which is transposed into domestic legislation through the Conservation of Habitats and Species Regulations 2017, as amended. The Forest is also afforded protection as a Site of Special Scientific Interest under the Wildlife and Countryside Act 1891, as amended. With these legislative requirements in place, the Conservators have an interest in any potential plans or projects that may impede the conservation of Epping Forest or adversely affect the site's integrity.
- 1.2 Epping Forest District Council has prepared its Local Plan for the District, to inform the sustainable development required to support the economic, social and environmental interests of the District over the new plan period of 2011 to 2033. The plan has been submitted for Examination, and the Conservators have submitted Hearing Statements in relation to a number of Hearing sessions that are of relevance for Epping Forest.
- 1.3 This report reviews the Habitats Regulations Assessment (HRA) submitted for Examination as part of the Local Plan evidence base. This report has been prepared by Durwyn Liley and Rachel Hoskin, who are both Directors at Footprint Ecology, and is based on our longstanding professional expertise.
- 1.4 Durwyn Liley is a national expert on the impacts of recreation on designated wildlife sites, having been involved in the research and planning issues relating to European sites for over 20 years. Rachel Hoskin has been working as a HRA specialist for approximately 14 years, within both HRA focussed consultancies and as a national specialist within Natural England. Both Durwyn and Rachel have been closely involved in the evidence base and mitigation approaches for a range of European sites, and with complex strategic mitigation schemes such as the Thames Basin Heaths, Dorset Heaths, the Solent and South-east Devon. Durwyn led the recent visitor survey work undertaken at Epping Forest.

3.6 Summary of key concerns

- 1.5 The Habitats Regulations Assessment of the Epping Forest District Council Local Plan, prepared by AECOM on behalf of the Council in January 2019 (EB209) assesses a number of potential impacts on the SAC arising from the Local Plan, and considers the measures necessary to avoid or mitigate those potential effects. As HRA specialists, with expertise in the analysis of recreation and urbanisation related impacts on designated wildlife sites, Footprint Ecology has been asked by the Conservators to provide technical advice on these matters within the HRA. This report specifically reviews the appropriate assessment section of the HRA in relation to recreation and urbanisation. The sections are 5.17 to 5.31 (EB209).
- 1.6 It is noted that considerable work has been undertaken to provide a revised version of the HRA in response to issues raised by various parties and recognition of recent case law. A new European Court of Justice Judgment in 2018⁹ which is now being referred to as 'People Over Wind,' clarified the need to carefully explain actions taken at each HRA stage, particularly at the screening for likely significant effects stage. The Judgment is a timely reminder of the need for clear distinction between the stages of HRA, and good practice in recognising the function of each. The screening for likely significant effects stage should function as a screening or checking stage, to determine whether further assessment is required. Assessing the nature and extent of potential impacts on European site interest features, and the robustness of mitigation options, should be done at the appropriate assessment stage. The revised HRA provides an appropriate assessment of all potential impacts screened as having a likely significant effect, including recreation.
- 1.7 Footprint Ecology advises that there are several key issues that relate to the assessment of recreation and urbanisation impacts, and some of these are fundamental in term of shortcomings within the HRA. It is recognised that the preparation of the revised HRA has been within circumstances where the consultants have had to retrofit the HRA to the submitted plan, which can present some difficulties when working outside the normal iterative process for HRA. For some of the issues highlighted in this review, it is a lack of evidence or progress with critical components of mitigation that prevent the HRA from making the necessary assessment.

⁹ European Court of Justice case C - 323/17 being referred to as 'People Over Wind'

1.8 In summary, we advise that these key issues are:

- Lack of clarity regarding zone of influence within which likely significant effects are triggered and a number of contradictions within the assessment
- Lack of assessment and recommendations in relation to the relative role of SANG and SAMM type measures for mitigation;
- Reliance on SANG to rule out adverse effects on the integrity of Epping Forest SAC without any coherent SANGs strategy, guidance or mechanism for delivery in place;
- Reliance on a framework of policies which do not provide a coherent and robust protection for the SAC;
- Identification of some site allocations that will result in a loss of greenspace and as such a risk of increased recreational pressure on the SAC, without any solution or mitigation.
- Lack of assessment in relation to urbanisation effects other than recreation.

1.9 Further details relating to the above points are set out in the following section.

2. Review of HRA

3.7 Lack of clarity on extent of impacts

- 2.1 Section 5 of the HRA contains the Appropriate Assessment and recreation impacts for Epping Forest SAC are covered on pages 120-124. Visitor survey work is often used to define a 'zone of influence' around designated sites that are sensitive to recreation. This is a geographical zone within which it is deemed that there is the potential for a cumulative impact arising from new residential development, based on the existing recreation draw from within that zone.
- 2.2 The HRA correctly draws from the visitor survey (EB715) to identify 6.2km as the core zone from which recreation use originates. The 6.2km reflects the 75th percentile of distances between survey point and home postcodes of visitors. However, within the HRA there is also a lack of clarity and conflicting text regarding the distances used to define any zone of influence.
- 2.3 The HRA heavily focuses on a distance of 3km, which is less than the median (3.1km) from the visitor survey (i.e. more than 50% of interviewees came from beyond 3km). The HRA advises at 5.19 that "*additional recreational activity resulting from new residential development within 3km of the SAC in Epping Forest District would result in an adverse effect in-combination with growth in adjacent authorities.*"
- 2.4 The HRA then goes on to advise that, whilst the current visitor survey work shows relatively few visitors originating from between 3 and 6.2km, large development allocations within this distance could result in changes to the patterns of activity and more visitors.
- 2.5 This lack of clarity on the actual zone within which the HRA deems there to be a significant effect, in-combination, is then further confused by Epping Forest District Council's commitment to an Interim Mitigation Strategy and Memorandum of Understanding with other authorities. The HRA does not specifically state what zone of influence the Interim Mitigation Strategy is based upon. The use of 3km and 6.2km is confusing (particularly as the 3km does not relate to the results from the visitor surveys).
- 2.6 A zone of influence should be the zone within which an absence of mitigation could result in an adverse effect on site integrity. The HRA does not provide a clear assessment of what this zone is, and how the zone should be applied.

3.8 Lack of assessment in relation to mitigation

- 2.7 Paragraph 5.22 of the HRA seems to suggest that mitigation should be different for dwellings within 0-3km and those within 3-6.2km. It would seem that the HRA anticipates dwellings within 0-3km to contribute towards strategic mitigation measures that will be delivered on the SAC, i.e. on-site mitigation measures (Strategic Access Management and Monitoring, 'SAMM' type measures).
- 2.8 For dwellings in the 3-6.2km (second bullet) it would appear that only large sites (four are mentioned in the second bullet) are expected to provide mitigation and this will be in the form of SANGs, i.e. new green space associated with the development or strategic SANGs. There is no evidence as to why different mitigation approaches are applicable and this compounds the first issue of a lack of clarity on the actual zone of influence within which mitigation is required.
- 2.9 Such a split is not used in any other European site mitigation strategy in the UK and there is a lack of any evidence or justification for why this split in mitigation approaches is proposed. Where differing mitigation requirements have occurred elsewhere, it has been for clear and justified reasons, and importantly, it is always ensured that the overall impact within the zone is assessed, and consequential overall mitigation requirement within the zone is still secured.
- 2.10 There is no assessment within the HRA as to why this is an appropriate or evidence-based recommendation for mitigation.

3.9 The relative role of SANG and SAMM type measures for mitigation

- 2.11 A strategic mitigation scheme should use local evidence to establish the most suitable mitigation approach and the relative importance of both SAMM and SANG to achieve its objective of protecting a European site from further impacts of recreation pressure. In some circumstances, an entirely SAMM based approach is more appropriate, in others a SANG focus will be most beneficial, and in others a mix of the two will be most optimal. The HRA does not provide any assessment of the relative role of SAMM and SANG for Epping Forest SAC. Rather, it apportions mitigation requirements based on an unjustified split within the zone of influence, which itself is confused as to what actual zone of influence is being recommended by the HRA.
- 2.12 For SANGs to be the only mitigation it would be necessary to have confidence that they worked to absorb all damaging recreation use associated with new development.

3.10 Reliance on SANG to rule out adverse effects on site integrity

- 2.13 The two bullet points in 5.22 set out the proposed mitigation requirements within the inner and outer parts of the 6.2km zone, recommending that the four larger site allocations "*deliver large areas of nearby accessible natural greenspace*" without stipulating what that size may need to be. This then seems contradicted by paragraph 5.23 which quotes from DM2: "*The Council's approach is to facilitate the development of a green infrastructure network.....*" Here the HRA provides the text from DM2 that includes reference to the Council's recognition of the impact of recreation and that mitigation can be achieved by '*increasing public access to land that is not in the Forest, altering the character of existing greenspaces and the links between open spaces.*'
- 2.14 Given that 5.22 refers to new green space being required only from four large sites beyond 3km from the SAC, it is impossible to have confidence in how this green infrastructure network will be delivered and how it can work to ensure no adverse effects on the integrity of Epping Forest SAC. We note from the Examination discussions during the hearing session on the 26th March (relating to DM5 and DM6) that the Council is planning to prepare a green infrastructure strategy, however this is not picked up in the HRA nor the submitted Local Plan.
- 2.15 Paragraph 5.26 of the HRA further adds to the confusion in that it suggests that some individual planning applications may be able to deliver their own bespoke mitigation, in other words developers will be able to choose between providing on-site greenspace as SANG or contributing towards the mitigation tariff. However, the subsequent paragraph (5.27) then states greenspace provision is not supposed to replace access management interventions.
- 2.16 As such the HRA fails to make clear how SANGs and SAMM type measures fit together, what level of SANG provision is necessary and what a "*meaningful proportion*" (paragraph 5.28 quoting from Policy DM2) of SANG might be. There is no indication as to whether SANG from the four large developments will make this meaningful proportion.

3.11 Reliance upon a framework of policies that do not offer robust protection

- 2.17 The HRA refers to a range of policies which the assessment considers provide "*appropriate framework to ensure Epping Forest is protected*" (paragraph 5.29). These policies, such as DM5 (Green and Blue Infrastructure) or DM6 (Designated and Blue Infrastructure) do not mention the SAC, even in supporting text, or provide any specific mitigation or confidence of protection for the SAC from recreation impacts. Indeed, the supporting text for DM6 in paragraph 4.49 of the plan states that "*there is a large surplus of natural and semi-natural space due to the presence of the Epping Forest....*", with the inference that additional semi-natural space is not necessary. Such policies can hardly be relied on to provide the necessary confidence to rule out adverse effects on the integrity of the SAC. The HRA should have identified such wording as being contrary to the HRA findings and recommended for deletion.
- 2.18 Despite quoting extensively from policy DM2, the HRA does not provide any assessment of mitigation requirements or make recommendations as to how policy wording can be improved to provide a more robust and clear mitigation requirement.
- 2.19 The HRA advises at paragraph 5.28 that the Local Plan does not defer considerations to the planning application stage, yet fails to recognise that if SANG provision is being relied upon to prevent adverse effects, the plan must have certainty that adequate SANGs can be delivered. This still accords with European caselaw (which is quoted within paragraph 5.28) in that the detail of the SANG in terms of design is best placed at the project level, but the ability to deliver a required quantum of SANG is fundamental to the plan level. The HRA tests are the same at both the plan and project level.

3.12 Loss of existing greenspace

- 2.20 A further concern is that the HRA highlights that certain site allocations (see HRA paragraph 5.30) will result in a loss of greenspace, yet the HRA fails to consider how this might be resolved. The risk is that the loss of greenspace will mean additional recreation pressure on Epping Forest SAC, even without the addition of new residents. This section of the HRA is simply a statement of fact rather than an assessment.

3.13 Lack of assessment of other urbanisation effects

- 2.21 Whilst the HRA refers to urbanisation effects (e.g. littering and fly tipping) at paragraph 5.19, this is not progressed further within the appropriate assessment section of the HRA for Epping Forest. The earlier sections of the HRA advise that recreation and urbanisation effects are considered together within the HRA, but the appropriate assessment neither includes or excludes any potential urbanisation impacts from any growth in close proximity to Epping Forest.
- 2.22 Policy wording within the submitted plan does refer to the need for project level HRA for development within 400m of Epping Forest SAC, but the HRA does not assess whether this is appropriate or adequate, or whether an exclusion zone would be more suitable.

3. Conclusions

- 3.1 The commitment to a revision of the HRA was a positive response by both the Council and the HRA consultants to concerns raised, and the consultants have worked in a short space of time to provide a revised HRA in the context of the difficulties raised by assessing an already submitted plan. Our review concludes that the HRA contains a number of fundamental shortfalls, and we recognise that some of these appear to be the consequence of trying to retrofit the HRA to the content of the submitted plan. The HRA has not made any further recommendations for incorporation of mitigation or refinement of policy and supporting text wording, which is commonly seen in a HRA that has progressed iteratively alongside an emerging plan.
- 3.2 The appropriate assessment section for Epping Forest SAC is lacking in assessment of evidence and does not highlight where evidence is lacking. It apportions mitigation requirements based on an unjustified split within the zone of influence, which itself is confused as to what actual zone of influence is being recommended by the HRA. The SANG aspect of the assessment fails to recognise the key issue of a lack of certainty in relation to SANGs delivery and is itself confused as to what SANGs is required. The need for a SANGs strategy is not referred to.
- 3.3 It is fully recognised that plan level HRA is the most suitable place to develop the detail of mitigation measures, once they have been established in principle at the plan level. But this requires certainty in delivery. Reliance of policy wording as currently provided in the submission version of the HRA, with an absence of any further recommendations, does not offer the plan level HRA certainty required to

conclude no adverse effects on site integrity, as required by the Habitats Regulations 2017, as amended.

- 3.4 It is recommended that the HRA requires further clarity in its recommendations, more assessment of evidence, and would be better able to undertake this with further progression of the SANGs strategy. The current MoU does not adequately cover SANGs aspects of the mitigation for recreation pressure. This in turn should then allow for recommendations for the plan and the mitigation approach to be made within the HRA. Recommendations should then inform the policy wording and supporting text, and the way in which the mitigation strategy is to be secured and implemented in order to enable a conclusion of no adverse effects on site integrity for Epping Forest SAC.
- 3.5 The need for a strategic approach to mitigating for recreation pressure on Epping Forest SAC has been evolving for some time and is a complex matter in relation to both the multiple local planning authorities involved, the impacts and the ecological response of the Forest. The current situation is challenging but meeting the requirements of the legislation can potentially be achieved, moving from the current position of uncertainty to a robust mitigation strategy for recreation that encompasses both SAMM and SANGs.
- 3.6 With the evidence base in place to demonstrate deliverability, and policy wording in place to commit to the approach, securing and implementing the mitigation strategy through a supplementary planning document, as seen in many other strategic European site mitigation strategies, would give greater weight to strategy implementation. This would be beneficial for both the Council as competent authority, and for developers in the scoping development options, providing clarity for all throughout the Plan period. This should be consistent across the local planning authorities within the zone of influence.