



S78 Appeal reference APP/C3105/W/20/3259189

**Land to the east of M40 and south of
A4095, Chesterton, Bicester, Oxon**

PROOF OF EVIDENCE

of

DOMINIC WOODFIELD CEcol CEnv MCIEEM

on behalf of

'PARISHES AGAINST WOLF'

BIODIVERSITY AND RELATED POLICY MATTERS



Town and Country Planning Act 1990 (as amended)

Section 78 Appeal

PINS reference APP/C3105/W/20/3259189

(Cherwell District Council References: 19/02550/F & 20/00030/REF)

by

Great Lakes UK Limited

Land to the east of M40 and south of A4095, Chesterton, Bicester, Oxon

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DOMINIC WOODFIELD

BIODIVERSITY AND RELATED POLICY MATTERS

January 2021

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1 WITNESS CREDENTIALS AND BACKGROUND

1.1 Qualifications

- 1.1.1 My name is Dominic Woodfield. I am a professional ecologist and environmental planning consultant of 26 years standing, and Managing Director of Bioscan (UK) Limited, a long-established environmental consultancy held in high regard by both the private and public sector. I hold an honours degree in Environmental Studies with Geography and am a Chartered Ecologist (CEcol), Chartered Environmentalist (CEnv) and a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM).
- 1.1.2 The majority of my consultancy work is engaged with assisting developers such as the Appellants with the resolution of policy or legal conflicts with environmental resources, typically as part of the process of seeking planning consent. I have consequently been responsible for conducting environmental assessments at all scales up to formal SEA, EIA and Habitats Regulations Assessments, including for projects falling within the NSIP (Planning Act 2008) regime. I have also provided expert ecological evidence to over thirty public inquiries and public examinations, as well as to the High Court, Court of Appeal and First Tier Tribunal. Amongst the diverse matters covered has been the ecology of a suite of rare and protected species and habitats, impacts of wind farms on birds, peatland ecosystems and carbon sequestration, designated sites, the Habitats Regulations Assessment process, biodiversity net gain and the use of metrics, mitigation and habitat creation, rare and scarce invertebrates, waxcap fungi and sustainable drainage systems.
- 1.1.3 I have delivered presentations on brownfield ecology and wind energy assessments to planning inspectors at PINS training events, have led training workshops and seminars for other bodies, including town planners and development companies and have lectured or led vocational field excursions for students at Oxford University and Oxford Brookes University. I also oversee several long-running monitoring studies on grasslands, scarce invertebrates and flora, have carried out peer-reviewed vegetation studies for Natural England and have had a number of articles published in various conservation circulars and journals.

1.1.4 Of particular relevance to this case, my experience with the use (and misuse) of biodiversity metrics¹ is significant and extends back to when they were first piloted for use in UK planning, approaching ten years ago. I have at times been outspoken within my industry about their drawbacks and vulnerability to error and misuse, and in advising planning officers and others against accepting their outputs uncritically and without due caution when assessing planning proposals. I successfully exposed misuse of calculators at a previous public inquiry in Cherwell District. All that said, the metrics themselves have over that same period become better as such problems have been recognised and as incremental revisions and refinements continue to be made. For all these reasons, it is important to use the most up to date versions, as well as to be transparent in their use and to be alert to local and regional differences in respect of the distinctiveness and value of habitats. This all accords with industry best practice². Unfortunately, on all these essential points, I believe that the Appellant and/or their ecologists have consistently fallen down in this case.

1.2 Background to my involvement in this appeal

1.2.1 Shortly after the Appellant's submission of application 19/02550/F to Cherwell District Council in November 2019, I was asked informally by a member of CPRE Oxfordshire to provide a high-level view of the Biodiversity Net Gain Assessment (BNG) report ('BNG report') which forms Appendix 9.10 of the Environmental Statement (Core Doc CD2-1) and which is a central support to the Appellant's claims that the proposals will not be harmful to biodiversity. Indeed, this report claims that notwithstanding the significant land-take required for buildings and hard surfaces, the proposals would deliver a net change of +15.13 biodiversity units on the site, equating to a 27.09% increase on what the Appellant's ecologists determined to be the site's baseline biodiversity value³.

1.2.2 Upon review of the design and landscape drawings and ecological survey information submitted with the application, I quickly reached the conclusion that (however unspectacular the baseline habitat value of the site appeared from that information), the extend of land given over to built form, combined with matters of practicality and common ecological sense in terms of what was achievable with what remained (given in particular the site's soils, history and the proposed future uses for the outdoor space), rendered this claim highly questionable. In particular, I noted that heavy reliance was placed on calculations that scored the site's baseline interest at the lowest conceivable level, whilst at the same time attributing arguably unrealistic high

¹ Explanation of terms such as 'biodiversity metric', 'biodiversity calculator' and 'biodiversity net gain' is given in the glossary at the end of my proof.

² CIRIA C776a (2019) Biodiversity net gain. Good practice principles for development. Part A: A practical guide.

³ BNG report Table 3-11 on page 14.

scores for what would be achieved in the way of habitat in the post-development scenario – for example claims of very rapid enhancement of retained species-poor grasslands and new plantation woodlands to high value examples⁴ and unrealistic proposals for habitat creation. It is easy to select high value habitats from a drop-down menu on an Excel spreadsheet, but generally rather harder (or even wholly impractical) to achieve them in reality, especially within some of the timeframes being claimed by the Appellants in this case.

- 1.2.3 Unfortunately, I found myself prevented from engaging in more detailed scrutiny of the calculations supporting the net gain claims due to the way the information was presented in the BNG report; it being scattered across numerous tables rather than (as is normal good practice) in one spreadsheet which transparently presents the input parameters and shows the formulae used. The CIRIA publication ‘Biodiversity net gain. Good practice principles for development’⁵ is cited as a guiding reference in the BNG report, and indeed one of the authors is a WSP employee listed on the quality control sheet of the BNG report as having signed it off. Yet the CIRIA report’s recommendations for openness and transparency about the calculations appear to have been passed over in this case. At the time of writing, the full calculations have still not been made available to me or otherwise to the inquiry.
- 1.2.4 I also observed that the BNG report referenced the formulae and methodology underpinning Defra’s 2012-2014 pilot scheme for biodiversity offsetting⁶ rather than more recent systems, suggesting the authors had overlooked or eschewed all of the revised and improved metrics and calculators that have emerged since then. These more recent calculators include various revisions of the Warwickshire calculator (appropriated for use in Cherwell since 2016) and latterly the Oxfordshire-specific calculator produced by Thames Valley Environmental Records Centre (TVERC). But most particularly, and to my mind quite inexplicably, a decision was evidently taken not to use the most up to date Defra 2.0 metric, despite this being published in July 2019⁷, well in advance of the November 2019 planning application.
- 1.2.5 In short, for reasons that remain unexplained, the Appellant’s ecologists either overlooked or rejected all of the more up to date forms of metric in favour of an

⁴ See for example Table 2-2 of BNG report (bottom of p7) which envisages a change in condition of existing species-poor grasslands on the site from ‘poor’ to ‘good’ in the space of one year.

⁵ CIRIA (2016 version cited by WSP, but more recently updated in February 2019). *Biodiversity net gain. Good practice principles for development: a practical guide & case studies.*

⁶ Specifically, reference is made to Defra (2012b). *Biodiversity Offsetting Pilots: Technical Paper- the Metric for the Biodiversity Offsetting Pilots in England* rather than the more recent and appropriate methodology set out in (e.g.) Crosher et al (2019). *The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019). Natural England.*

⁷ <http://publications.naturalengland.org.uk/publication/5850908674228224> (download date 05.01.21)

outdated and more opaque approach to the task of calculating net biodiversity change.

- 1.2.6 I advised my contact at CPRE of my high-level findings and while I believe some of this was conveyed to the Council, I was not then approached again until November 2020. In the interim, it is evident that the Council's biodiversity officer, Charlotte Watkins, also struggled with the opaque presentation of information in the BNG report, given that she requested more detail on the calculations in her comments to the case officer at the beginning of 2020. In responding to this on behalf of the Appellant, WSP provided a further series of tables appended to a letter dated 28 February 2020 (attached at Appendix DW 1). These tables give some more detail on the Appellant's BNG calculations, but again in a non-standard and therefore not easily penetrable format. I have latterly observed that the content is also in places different to the figures forming the basis of the BNG report appended to the ES⁸.
- 1.2.7 Even when considered together with the BNG report, the supplementary information provided to CDC in February 2020 does not permit a full appreciation of how the Appellant's ecologists arrived at the calculator outputs that the Appellants seek to rely upon to demonstrate policy compliance on biodiversity matters. I note that WSP, in the body of the February 2020 letter, appeared to accept that some challengeable claims had been made in their original calculations, specifically in regard to claims of 'scrub' habitat creation of 'medium' distinctiveness and in 'good' target habitat condition, for what will actually (by reference to the submitted landscaping planting plan drawings, e.g. BMD.19.010.DR.P304 within Core Document CD1-19) be uniformly thin and isolated strips of typically single-species ornamental planting between kerbed bays and expanses of car-park. However, they maintained that correcting their calculations to account for this would not change the overall outcome and "*the scheme would continue to deliver a net-gain in biodiversity*"⁹. Given the lack of any further correspondence on this matter, nor any related reason for refusal, it seems this assurance was taken at face value by the case officer and/or Ms Watkins. In my view it shouldn't have been because WSP's claim in this letter that a reduction of 9.7 habitat units from the post-development total would not change the net-gain outcome overlooks the fact that such an adjustment would nevertheless be significant in policy compliance terms, as it would on its own make the Appeal Proposals fall short of achieving the 10% net gain sought by the District Council for all developments¹⁰. I

⁸ For example, retained and enhanced broadleaved woodland is given a target condition of 'moderate' in Table 2-2 of the BNG report, but this has been elevated, without any explanation, to 'good' in the tables appended to the February 2020 letter.

⁹ See second row of table on page 5 at Appendix DW1.

¹⁰ following the Council's endorsement of 7 October 2019 (see following link downloaded on 05.01.21)
http://modgov.cherwell.gov.uk/documents/s42079/250919%20FINAL%20October%20Executive%20Committee%20report_Community%20Nature%20Plan.pdf

would further observe that this February 2020 exchange between the Appellants and CDC on the matter of BNG provided a further opportunity for the Appellants to utilise the up-to-date Defra 2.0 metric, yet once again that opportunity was not taken.

1.2.8 When contacted again by CPRE Oxfordshire in November 2020, I was given a formal instruction to look at the Appellant's BNG claim afresh in contemplation of this appeal inquiry. I revisited my previous findings and reconfirmed that a) the Appellant's claim of net gain still appeared incongruous with my own experience and expectations based on the available facts and standard assessment approaches and b) that the Appellant's BNG calculation was in any event still not supported by any transparent 'workings out'. A review of the online planning register showed that no further clarity had been provided via the consultation process since February 2020, and therefore I instructed colleagues to begin the awkward and lengthy task of independently populating an Excel-based calculator with information extracted from the various tables in the BNG report at Appendix 9.10 of the ES and the supplementary tables appended to the WSP letter to Cherwell of 28th February. This process re-confirmed that the Appellant's calculations were eminently challengeable and I conveyed that conclusion to CPRE. On that basis I was given a further instruction to particularise the issues and contribute text for a Rule 6 statement (as ultimately submitted by PAW). As part of that process, I and a colleague conducted separate visits to the Appeal site on two dates: 26 November and 15 December 2020 and we were there able to ground truth certain matters and obtain evidence on a number of others that I will deal with later in my evidence.

2 SCOPE OF EVIDENCE

- 2.1 The scope of my evidence is narrowly circumscribed around the question of whether the Appeal Proposals would avoid overall net harm to biodiversity (in line with the requirements of national planning policy) and secure net gain (as required for compliance with adopted Cherwell District Local Plan policy and related Cherwell District Council resolutions). Although I have noted less than best practice approaches in other areas (such as with some of the baseline protected species surveys), I have not engaged in any detail with such matters at this stage.
- 2.2 In **Section 3**, I briefly summarise how the issue of net biodiversity loss or gain engages with national and local policies germane to the disposal of this appeal.
- 2.3 In **Section 4**, I provide some background to biodiversity accounting and the use of metrics to determine net loss or net gain in relation to planning proposals. I consider this background is essential to understanding some of the flaws in the approach taken by the Appellants' ecologists to the task of calculating net biodiversity change.
- 2.4 In **Section 5**, I provide a critique of the Appellant's claim of biodiversity net gain. In the absence of the full detail of WSPs calculations, this draws on 'shadow' calculations extrapolated from the available information in both the BNG report at Appendix 9.10 of the ES and the February 2020 correspondence between the Appellant and Cherwell. I also test the Appeal Proposals via inputting the same information into a more up to date metric.
- 2.5 Finally, in **Section 6**, I draw my overall conclusions.

3 PLANNING POLICY COMPLIANCE

3.1 National policy

3.1.1 The National Planning Policy Framework (NPPF) sets out, as a key principle of sustainable development, a presumption against significant loss of biodiversity and furthermore seeks to ensure that planning decisions not only avoid net loss but secure net gain in biodiversity wherever possible.

3.1.2 As I seek to show in my evidence, the Appellant's biodiversity net gain calculations (being in large part the foundation of their proffered conclusions on ecological impact generally), do not provide a reliable basis to determine that the Appeal Proposals accord with either the spirit or the letter of national policy, for example as set out at NPPF paragraphs 8(c), 118 (a), 170 (d) or 175 (a).

3.1.3 In particular, NPPF para 175 (a) requires that:

“if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused”.

3.1.4 The clear flaws in assessment that I draw attention to in later sections of my evidence afford no confidence that the appeal proposals will avoid significant harm, still less deliver net biodiversity gain. Indeed when corrections are made to account for such flaws, clear net loss of biodiversity is indicated. That is a conclusion that is furthermore consistent with long-standing but more subjective approaches to professional ecological impact assessment, and one that is reached even before considering the impact of such loss upon faunal species.

3.1.5 With the Environment Bill¹¹ currently in passage through Parliament, and as reflected in the recent Planning White Paper, the direction of travel of national policy is now firmly towards biodiversity net gain as a mandatory requirement for new developments in England, and by extension the use of standardised metrics to calculate whether it is achieved. This provides further important and relevant context to this appeal, particularly in relation to testing the Appeal Proposals against the prevailing biodiversity protection policies in the adopted Cherwell Local Plan, as discussed below.

¹¹ <https://services.parliament.uk/bills/2019-21/environment.html> downloaded 05.01.21

3.2 Local planning policy

3.2.1 As the appeal site is not designated for its nature conservation interest nor is it within a Conservation Target Area, the most relevant of the adopted Local Plan policies in relation to biodiversity is Policy ESD10, which states:

“Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment

Protection and enhancement of biodiversity and the natural environment will be achieved by the following:

- **In considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources**
- **The protection of trees will be encouraged, with an aim to increase the number of trees in the District**
- **The reuse of soils will be sought**
- **If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or as a last resort, compensated for, then development will not be permitted.**
- **Development which would result in damage to or loss of a site of international value will be subject to the Habitats Regulations Assessment process and will not be permitted unless it can be demonstrated that there will be no likely significant effects on the international site or that effects can be mitigated**
- **Development which would result in damage to or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity**
- **Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity**
- **Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity**
- **Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value**

- **Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse impact on biodiversity by generating an increase in air pollution**
- **Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably**
- **A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.”**

3.2.2 Since October 2019, the requirements of Policy ESD10 to seek net gain have been given added impetus by the passing of a resolution endorsing the seeking of “*a minimum of 10% biodiversity net gain through engagement with the planning process*”¹². This was a forward thinking move by CDC, being consistent with the direction of travel of national statute and policy as enshrined within the Environment Bill and White Paper.

3.2.3 Consistent with the above resolution and policy, the need for net gain to be demonstrated by the use of biodiversity metrics¹³ was agreed between the Appellants and CDC at the ES scoping stage (see e.g. ES Chapter 9, p9-3, Table 9-1). Indeed the ES confirms that the Appellant used metrics to steer, inform and test the landscape design by means of “iterative BNG assessment” (ES Chapter 9 para 9.5.15). This central role that the use of metrics played in the design of the Appeal Proposals and in arriving at the ES conclusions underlines the importance of their accuracy in assessing the performance of the Appeal Proposals against national and local policies that seek to avoid prevent biodiversity loss.

3.2.4 In the remaining sections of my proof I seek to spotlight how the only way a net gain outcome has been arrived at in this case is by misclassifying the baseline conditions as a largely uniform expanse of negligible value habitat, while at the same time relying on highly ambitious to the point of fanciful objectives for habitat creation and enhancement – with little technical consideration given to the harsh practicalities of achieving such objectives (still less maintaining any degree of success in the face of future pressures for amenity use).

¹² See page 1 of

http://modgov.cherwell.gov.uk/documents/s42079/250919%20FINAL%20October%20Executive%20Committee%20Report_Community%20Nature%20Plan.pdf (downloaded 05.01.21)

¹³ See glossary for definition.

4 THE USE OF BIODIVERSITY METRICS IN PLANNING DECISIONS

4.1 Purpose, origins and evolution

- 4.1.1 Biodiversity metrics seek to simplify the process of ecological impact assessment and make it more objective by using a form of numerical accounting. This is based around the application of scores to different habitat types to represent their intrinsic habitat interest. These scores can then be multiplied by the area (or length for linear features) of that habitat to provide a cumulative numerical value for a given piece of land. In the context of assessing impacts from development, such calculations can be used to provide a simplified balance sheet of habitat losses and gains from changes in land use, taking into account influencing variables such as 'lead-in' time for the creation of new landscaping or compensatory habitats, and the varying difficulty and risks associated with successful creation of different types of habitat.
- 4.1.2 The origin of metrics lies in the interrelated concepts of 'biodiversity offsetting' and 'habitat banking', where developers can theoretically 'offset' damage to habitats on a site through trading or purchasing 'conservation credits', generally with the intent of delivering habitats of equivalent value elsewhere. When used in this context, biodiversity metrics provide a means to quantify impact into a number which can then be translated into a 'price' - being the number of 'conservation credits' needing to be purchased to offset that impact. The concept originates from overseas, and from 2012-2014 was trialled by Defra and Natural England in six biodiversity offsetting pilot areas in England, one of these being the adjoining county of Warwickshire. Following the trial, the Government of the time elected not to afford offsetting any statutory or official policy basis, but the accounting methodology associated with it was nevertheless appropriated, adopted and revised by a number of local authorities as an ancillary tool to assist in testing development proposals against national and local policies for biodiversity, in particular policies anchored in avoiding 'net loss' or delivering 'net gain'.
- 4.1.3 The potential benefits of an accounting-type system for repeatability, consistency, transparency and accessibility (in particular in terms of ease of understanding by non-experts) are beyond dispute. It is this that led to the enthusiastic uptake of biodiversity calculators by more and more planning authorities up and down the country between 2012 and 2019, and the beginnings of formalisation of the use of metrics, now heading towards statute with the Environment Bill. Use of such calculators is attractive as it can simplify and speed up the process of weighing biodiversity into the planning balance and measuring whether net gain or net loss is achieved. It can help decide whether planning proposals are compliant with national and local policy objectives

and can thus make the job of development control officers in particular simpler, easier and (crucially) faster in resource-strapped times.

- 4.1.4 However, biodiversity offsetting generally, and the use of biodiversity calculators specifically, is not without controversy. Many in the UK conservation sector expressed alarm at the Government's initial enthusiasm for the concept ten years ago. At the outset it was accused of being a 'licence to trash' by some, while others argued (and continue to argue) that it is not possible to "monetise" or "commodify" natural capital. The concern of such parties peaked when the then Secretary of State for the Environment, Owen Paterson, appeared to suggest in 2014 that losses of habitats such as ancient woodland (generally regarded as 'irreplaceable' - including in national policy), could be offset. Many ecological practitioners have expressed more specific and technical concerns that the calculators in current use can grossly over-simplify value judgments, for example in being unable to take into account individual species. For example, common habitats that are known to support rare species (such as a blackthorn hedge that supports brown hairstreak butterflies – a relevant consideration in this case) are at risk of being undervalued in the habitat-orientated accounting process, as compared with longer- established but necessarily more subjective forms of evaluation such as those that still form the basis of formal EclA¹⁴. Other critics point to the heavy reliance on sometimes very optimistic assumptions about both the ease of creating replacement habitats of equivalent value to those lost, and the time taken to do it.
- 4.1.5 For such reasons, while the use of metrics is an increasingly common (and likely to soon be effectively mandatory) part of ecological impact assessment, it is broadly accepted at the same time that the outputs have to be treated with significant caution and that amongst other things they need to be cross-checked and calibrated by reference to common ecological sense as well as any non-standard species interest. Even where metrics are in established use, they are generally under constant refinement in an attempt to improve them. For example, in Cherwell, an Excel-based refinement of the original 2012 metric was appropriated from neighbouring Warwickshire (one of the original pilot authorities) and used in planning decisions from at least 2016. In recognition that this was less than ideal for capturing Oxfordshire-specific variation, a system bespoke to Oxfordshire was developed by the Thames Valley Environmental Records Centre (TVERC). The version 2.2. (2018) iteration of the TVERC calculator also remains available on-line, albeit its use has effectively been superseded by the emergence of the Defra 2.0 beta metric in 2019.

¹⁴ CIEEM (2019). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1 Updated September 2019*. Chartered Institute of Ecology and Environmental Management, Winchester.

4.2 The Defra 2.0 metric

- 4.2.1 In July 2019, Defra and Natural England jointly published the Defra biodiversity metric 2.0 as a beta test version. This is Government's successor to the biodiversity metric originally published by Defra in 2012. The Defra 2.0 metric, like its predecessors, comes with an interactive Excel spreadsheet calculator with drop down menus and cells for input values. The drop-down menus allow one to select from a pre-defined list the different habitats present on a site that is being assessed (the list now more closely allied to the newer UKHab¹⁵ survey terminology than Phase 1 habitat survey methodology), and to rate the quality of these habitats by reference to 'distinctiveness' (i.e. a measure of the relative scarcity of the habitat and its importance for nature conservation) and 'condition'. Once this has been done for all habitats, and the extent of each habitat calculated, an output 'Total Site Baseline' value is delivered, measured as habitat units¹⁶. One then goes through the same process for what will be left after the site is developed, taking into account landscaping and other measures, including habitat creation or enhancement. This gives a second output figure. In simple terms, the difference between the 'before' and 'after' number provides a net positive or net negative result which indicates whether the development delivers 'no net loss', 'net loss' or 'net gain'¹⁷. Taking it a bit further, one can use any deficit indicated by the calculator, when one is in a net loss position, to help decide how much habitat may need to be delivered elsewhere (in other words, biodiversity offsetting).
- 4.2.2 As the Defra 2.0 metric immediately became the standard for use in biodiversity net gain assessments from July 2019, (and remains so at the time of writing, with the launch of version 3.0 having been re-scheduled to Spring 2021), I am at a loss to understand why it was not used by the Appellant in the application submission of November 2019, nor in their response to Cherwell District Council on the subject of net gain in February 2020. Nor did the Appellant elect to use the Warwickshire metric (which had been the 'go to' system in Cherwell since at least 2016) or the Oxfordshire metric in use since 2017. Instead, they opted for the original unrefined 2012 methodology. In the next section of my evidence, I attempt to critique the results they obtained using this technique, how they compare with more up to date methods and whether those results can be relied upon in the disposal of this appeal.

¹⁵ The UK Habitat Classification System – for further details see www.ukhab.org

¹⁶ Note the emphasis on 'Habitat'. This is because the system does not and cannot account for species, even where rare and/or protected species are known to be present and add substantively to the value of the site in question.

¹⁷ To allow for margins of error in calculations, net gain is generally accepted to have occurred upon exceedance of 105% of the baseline value (i.e. >5% net gain). No net loss covers 95-104% of the baseline value. Net loss =<95% of the baseline value.

5 CRITIQUE OF THE APPELLANT'S NET GAIN CALCULATIONS

5.1 Lack of transparency necessitating 'shadow' calculations

- 5.1.1 In my contributing text to PAWs Rule 6 statement, I included a request for the Appellant to make available to the inquiry the spreadsheet calculations upon which the claim that the Appeal Proposals deliver net gain is founded. After being formally instructed by PAW to produce written evidence, I followed this up with a further direct request for the same via e-mail to WSP on 23rd December 2020 (Appendix DW2). WSP acknowledged receipt of the latter e-mail on 4th January 2021 and advised they would take this up with the Appellant and BDM, but neither they nor the Appellant has provided any further information in response to either request. The Inspector will note how this has unnecessarily lengthened the scope, complexity and volume of my evidence, has hindered or prevented the process of narrowing grounds of dispute to date and how it may have further implications for the time required to deal with this matter in oral evidence.
- 5.1.2 In lieu of being able to directly interrogate the Appellant's calculations, a 'shadow' calculation has been attempted in an attempt to replicate and thus understand what process their ecologists went through and what assumptions they made. Because WSP elected to use a superseded methodology, this process has involved populating an old 2014 version of the Warwickshire County Council Excel calculator extracted from Bioscan's archive. This uses both the original Phase 1-based habitat categorisations and 2012 Defra formulae. This spreadsheet calculator was populated with the area-based hectareage figures and the condition and distinctiveness assessments taken variously from the BNG report (CD 2-1) and the tables appended to the letter from WSP to Cherwell District Council (CDC) dated 28 February 2020 (latter at Appendix DW1 & CD2-6). Wherever possible the more up to date February 2020 information was used.
- 5.1.3 In the course of this exercise a number of discrepancies were revealed between the information provided in the BNG report and the later information provided to CDC in February 2020. For example, the figures for the total area of mixed and broadleaved plantation woodland habitat to be retained and enhanced differ between the BNG report (see for example Table 3-7 of that document) and the tables appended to the February 2020 letter – in both cases the amount being retained has increased slightly. Such differences have not been explained, but may in part be linked to the reference made at para 4.2.4 of the BNG report to a further iteration of the landscape design having been issued after the completion of the calculations, or to factors such as some of the semi-improved grassland creation indicated in the BNG report having latterly

been dropped from the tables presented to CDC in February 2020. In all cases the more recent figure has been used in the 'shadow' calculation but this lends further cause to the importance of the Appellant's calculations being made available, and also suggests that it was not correct for the Appellants to imply to CDC in February 2020 that adjustments since the original submission would have no impact on the overall output. Full and revised calculations ought to have been provided at that point and it is disappointing that the District Council did not request them at that stage.

- 5.1.4 More significant, however, is that the process of assembling a shadow calculation also revealed that several changes were made to override the default scores the 2012 metric gives to parameters such as 'distinctiveness', 'condition' and (for post-development habitats) 'time to target condition'. For example, the target condition for retained semi-improved neutral grassland was elevated from 'moderate' in Table 2-2 of the BNG report to 'good' in the information supplied to CDC on 28 February 2020. No reasoning has been given for this deviation from the defaults nor the associated raising of ambition or expectation for created/enhanced habitats (nor indeed the practicality of it being achieved, let alone in the given timescale). I return to this issue later.
- 5.1.5 The BNG report concludes that the development would deliver *"an overall net gain (+27%) in area-based biodiversity units with no area-based HPI¹⁸ habitat lost.¹⁹"* In the first instance, I note that two or possibly three ponds supporting great crested newts will be removed by the development, and even though such losses are proposed to be compensated, it is not correct to claim that no area-based HPI would be lost, as the presence of this species automatically elevates these waterbodies to HPI status (see Appendix DW3)²⁰. Indeed, the status of ponds with this species as HPI is accepted elsewhere in the ES (e.g. Chapter 9, Table 9-4, last row on page 9-14).
- 5.1.6 Unfortunately, I have not been able to precisely replicate the outputs in the Appellant's BNG report²¹ by populating the 2014 Warwickshire calculator, despite using the same input data as WSP appear to have used – in fact I arrive at an output of +19.90 units that translates to 36% gain on the baseline situation (Appendix DW4). The reasons for this different result are unclear. Inconsistent rounding by the calculator (an issue I have experienced previously) may be partly to blame, but beyond

¹⁸ Habitats of Principal Importance (also known as Priority Habitats) further to NERC Act (2006) s.40-41

¹⁹ ES Vol2 Appendix 9.10 Biodiversity Net Gain Assessment Report – Executive Summary

²⁰ Most calculator tools automatically flag losses of HPI with a caution along the following lines *"CAUTION - Destruction of habitats of high distinctiveness, e.g. lowland meadow or ancient woodland, may be against local policy. Has the mitigation hierarchy been followed, can impact to these habitats be avoided? Any unavoidable loss of habitats of high distinctiveness must be replaced like-for-like."*

²¹ To save on inquiry time, I do not deal with the claim of net gain in relation to hedgerows in this evidence, suffice to say that net gain in both linear habitats and area-based habitats must be achieved, and that there are similar problems with the Appellant's approach to linear habitat assessment as indicated in the right-hand column notes at Appendix DW4.

underscoring the frustration that the Appellant has thus far not responded to the request for full and transparent disclosure of their calculations, it should be noted that such matters rapidly become academic when even this ostensibly more favourable starting point is subject to further tests for robustness and credibility.

5.1.7 I deal with these tests in turn as follows.

5.2 Running the shadow calculation with re-instated defaults

5.2.1 As discussed above, in many cases the default scores attributed by the Defra 2012 formulae to parameters such as distinctiveness, condition, ease of creation and time to target condition have been overridden in the Appellant's BNG calculations, without any reasoning being given. Examples are highlighted in the 'notes' column to the right of the metric tables in (e.g.) Appendix DW4. They include downgrading the default distinctiveness of existing (baseline) examples of species-poor semi-improved grassland from 'medium' to 'low', and elevating the default distinctiveness of retained or proposed (new) 'mixed plantation' from 'low' to 'medium'. The fallacy inherent in such interventions to override the formulae is illustrated no more clearly than by reference to the existing areas of mixed plantation on the site. These have been attributed a condition of 'poor' by the Appellant after perhaps 40-50 years of establishment (the golf course was established in the early 1970s). Yet proposed new areas of mixed plantation are scored as achieving 'good' condition after a mere 16-20 years. This is a clear example of artificial suppression of the baseline condition of impacted habitats coupled with exaggeration of the likely value of what is proposed to offset or replace them.

5.2.2 Of course, overriding the defaults in metrics can be justified in certain circumstances, but in accordance with the good practice requirements for transparency, those circumstances need to be carefully explained to ensure that anyone reviewing the calculation (ecologist or otherwise), is carried through the process and given the opportunity to contemplate whether they agree with the decision. For example, it may be perfectly legitimate to downgrade the condition of a high value habitat by overriding the default formulae if the site has been damaged in some way but is still recognisable as that high-quality habitat. But it is self-evidently not acceptable practice to amend formulae purely in an attempt to manipulate output numbers. Indeed, most spreadsheet calculators in current use actively prompt the user to provide reasoned justifications whenever an attempt is made to override the default formulae, or (as with the Defra 2.0 metric) they may even prevent deviation from certain defaults entirely by means of protected cells.

5.2.3 There are a number of other instances where the default scores for certain parameters have been overridden in the Appellant's calculations, leading to lower than default scores being attributed to existing baseline habitats, and higher than default scores being attributed to new habitats. In none of these cases have I found any justification for any of these changes in the submission material. Rather than go through these interventions line-by-line, I have attached an illustration of the overall effect of restoring these defaults on my 'shadow' calculation. This is presented at Appendix DW5. It indicates a significant scaling back to +9.75 units, or a reduction in percentage net gain to 17.4%. Note that no other changes have been made to generate this substantial drop of habitat units: it has arisen simply as a result of restoring the metric defaults for habitat condition and distinctiveness.

5.3 Amending errors in baseline habitat classification and measurement

5.3.1 More significantly still, there are a number of errors, unjustified simplifications or discrepancies in the Appellant's inputs to the metric. These can be detailed in full if requested, but as some of the more minor errors in measurement or transcription are not likely to have a significant effect on the calculator outputs, I confine my discussion to the more significant examples that do. Perhaps the most significant of these is most readily appreciated by comparing the baseline habitat map used by the Appellant's ecologists to calculate inputs to the calculator (Appendix DW6) with an aerial photograph of the appeal site (Appendix DW7).

5.3.2 From this comparison it can be immediately appreciated that the uniform attribution of amenity grassland (attributed 'low' distinctiveness and 'poor' condition, so the lowest value form of this habitat possible) across the vast majority of the Appeal Site in the habitat map (as coloured yellow), is an over simplification of the actual habitat structure appreciable from the aerial. Perhaps most strikingly, there is a clear difference observable on the aerial between manicured and intensively managed greens and fairways, and areas of less intensively managed 'rough', pond margins, marginal areas and other patches of longer grassland. This is not reflected on the habitat map. Even in November/December when golf course grasslands can be expected to look more uniform, I have found that these differences are readily apparent on the ground at the Appeal Site, manifested in the different suite of plant species found between the two grassland types. For example, there is frequent to locally abundant incidence of broad-leaved herb species such as cat's-ear *Hypochaeris radicata*, ribwort plantain *Plantago lanceolata*, ox-eye daisy *Leucanthemum vulgare*, wild carrot *Daucus carota* and wild parsnip *Pastinaca sativa* in the 'roughs' and/or the grasslands flanking several of the ponds (notably the eastern margin of pond SW2), compared with an almost total absence of these and other herb species from the greens and fairways. The last three of the above listed species in particular are strongly

indicative of semi-improved grasslands and strongly counter-indicative of amenity grassland²². None of this variation is captured in the Phase 1 Habitat Survey map, and consequently, the 12.45ha of the site coloured yellow (being the majority of the site) is classified in the BNG calculation as uniform amenity grassland of 'low' distinctiveness and 'poor' condition. The applicable description in the Appellant's habitat survey report is of this habitat being "dominated by perennial rye *Lolium perenne*, with locally abundant red fescue *Festuca rubra* and occasional common daisy *Bellis perennis*" (ES Appendix 9.1 paras 4.2.20-4.2.21). This is a fair reflection of the greens and fairways, but not the roughs. Even though the roughs are recognised as possibly more species rich in the same report (para 4.2.22), they are still lumped in with the poorest grasslands on the site. It is not hard to appreciate how this homogenisation skews the baseline interest of the site towards much lower value than the reality.

- 5.3.3 This is just one example, but its effect on the calculator outputs is significant. To illustrate this, I used CAD software to take measurements from aerial photographs to separate the greens/fairways and roughs within this 12.45ha area into separate calculator inputs of 4.06ha and 8.39ha respectively. I then sought to test the effect of capturing even a very slight variation between these two grasslands by making a very modest and conservative change to the calculator inputs. For the 4.06ha of greens and fairways, I retained the inputs as 'amenity grassland, low distinctiveness and poor condition' (which I am content is fair). For the 8.39ha of roughs, I awarded a slightly elevated 'moderate' condition, but otherwise kept these unchanged (in fact this is very conservative, as these grasslands don't fit the Phase 1 definition of amenity grassland at all, and some are relatively species-rich). As some of the 12.45ha attributed to amenity grassland is proposed to be retained under the Appeal Proposals, I split that quantum equally between these two sub-categories. The effect that this simple correction and adjustment has on the calculator outputs is dramatic (Appendix DW8). It instantly switches the output from net gain to a net loss to biodiversity of -4.42 units or a loss of just over -6%. This output would render the Appeal Proposals as non-compliant with local and national planning policy on biodiversity.
- 5.3.4 This is no more than one simple adjustment made for illustrative purposes to avoid burdening the inquiry with too much technical detail. In my professional opinion, many further adjustments would need to be made before the Appellant's calculations came

²² The Phase 1 manual defines amenity grassland as follows: "*This comprises intensively managed and regularly mown grasslands, typical of lawns, playing fields, golf course fairways and many urban 'savannah' parks, in which Lolium perenne, with or without Trifolium repens, often predominates. The sward composition will depend on the original seed mixture used and on the age of the community. Herbs such as Bellis perennis, Plantago major and Taraxacum officinale may be present. If the amenity grassland has a sward rich in herbs, it may be possible to classify it as semi-improved acidic, neutral or calcareous grassland, as appropriate. In such cases, the area concerned should be mapped as the specific grassland type and its amenity use target noted.*" By any reading of this definition, the roughs, pond-edge grasslands and ditch-sides on the site should not have been classified as poor condition amenity grassland.

close to accurately reflecting the baseline position on the site. Some surface water features on the site, for instance, do not feature on the Phase 1 habitat map, yet I observed even in December that some of these have interesting draw down or marshy communities at their base and drier upper banks with sparse vegetation that includes some of the most interesting botanical species on the site (as well as being of potential importance for some of the scarcer invertebrates recorded)²³. At page 2 of their February 2020 letter (Appendix DW1), WSP contend that these types of feature on the site are man-made and “*lacking in semi-natural attributes*”. They may indeed be man-made and not very naturalistic to look at, but during my site visit in December, I noted the plants bee orchid *Ophrys apifera*, blue fleabane *Erigeron acer* and sheep’s sorrel *Rumex acetosella* in sparse communities on the banks of such ditches, all of which are axiophytes (otherwise known as indicator species) that point towards plant communities of higher value. The presence of such communities has clearly been overlooked and/or disregarded by the Appellant’s ecologists; none of these species are listed in the Appellant’s ecological survey information for example, nor indeed were others I noted in a limited walk-round of about twenty minutes duration, such as ploughman’s spikenard *Inula conyza*. If the Inspector desires, I can point out such species on the accompanied site visit.

- 5.3.5 While the site is by no means spectacular in ecological terms, the lumping together of most of the site into ‘amenity grassland’, itself then awarded the lowest possible scoring of uniformly ‘poor’ condition and ‘low’ distinctiveness, is clearly an unjustified suppression and homogenisation of the reality. Indeed it suggests wider issues with the thoroughness of the baseline habitat surveys and the assessments based upon them, and requires that the outputs of the Appellant’s biodiversity net gain calculations, as derived from these inputs, be viewed with extreme caution.

5.4 Tempering exaggerated claims for retained or new habitats

- 5.4.1 As a final calibration, there would be a further need in my view to scrutinise and where necessary temper some of the more exaggerated or overly ambitious (to the point of fanciful) attributions given by the Appellant to the habitats proposed to be retained and enhanced or newly created.
- 5.4.2 It is most unlikely, for example, that ‘marshy grassland’ or ‘wet meadow’ habitat could be created to the extent and condition proposed, and via the methodologies set out in the Habitat Management and Monitoring Plan (CD2-2, page 9 last row of table),

²³ The invertebrate survey report attached to the ES at Appendix 9.9 details an assemblage of insect species, including in particular certain Diptera and Hymenoptera, that would be most unlikely to persist on the site if the habitat quality was as poor as conveyed by the Phase 1 habitat map, noting that this map was used as the basis of the Appellant’s BNG calculations. This report also references a number of noteworthy plant species that appear to have been overlooked in the botanical surveys.

without (at the very least) major interventions to change hydrology, micro-topography and soil conditions, no proposals for which are given. Equally, successful creation of medium distinctiveness (and good condition) semi-improved grassland, within the confines of the proposed car park, main hotel frontage and/or under the waterslide infrastructure, would also appear unlikely, at best. While the existing swales (being wet/dry ditches) were largely discounted from the area-based calculations of baseline value, where new swales are proposed, these are claimed as 'marshy grassland' and thus earn biodiversity units. This is illogical and has an effect tantamount to double counting.

- 5.4.3 As a final example of exaggerated uplift, all habitats scheduled to be retained and enhanced are attributed a baseline condition of 'poor' across the board, yet each is assumed to be able to achieve a target of 'good' condition after only 6-10 years. This under a management regime that, by reference to the submitted Landscape Maintenance & Management Plan (CD1-20) and Habitat Management and Monitoring Plan (CD2-2), seems little different from the extant golf course maintenance. This point was raised by the Council's biodiversity officer and the Appellant responded (Appendix DW1 page 3) with a series of reasons for attributing 'poor' condition to the baseline habitats which in my view apply equally or more so to the future habitats on the site.
- 5.4.4 In short, it strongly appears as if highly ambitious habitat enhancement targets and timescales have been set with scant or no technical consideration having been given to whether the site conditions, including soils, topography, hydrology and future amenity uses, actually have any chance of allowing delivery in the locations and timescales proposed. Correcting these to more realistic outcomes for proposed new woodland, grassland and scrub planting that more properly reflect the actual time it would take for these to reach maturity and/or condition on this site, would necessitate a series of further adjustments. The consequence of these adjustments, individually and cumulatively, would be to cast the Appeal Proposals even further into 'net loss'.

5.5 Outputs from use of the Defra 2.0 metric

- 5.5.1 The alternative but perhaps most important approach to testing the veracity of the Appellant's claims of delivery of biodiversity net gain is to apply the metric that I would contend should have used in the first instance – the Defra 2.0 calculator. This has certain key differences from both the methodology employed by the Appellants in the submission material and other predecessor systems, including amended (and more realistic) default 'lead in' times for the creation of certain habitats and the prohibition of higher-level condition attributes to others, such as 'buildings and hardstanding'. In short it is a less susceptible metric to bias, whether that be introduced by deliberate or accidental means.

- 5.5.2 A Defra 2.0 calculation based on the same area-based habitat inputs derived from the BNG report and the February 2020 supplementary submission to CDC is attached at Appendix DW9. Even before making any adjustment for the errors in baseline habitat classification discussed above, a net loss result of -4.60 units or -7.80% is indicated. If the same adjustment to capture the distinction between poor and moderate condition amenity grassland is made (as per 5.3 above), the output changes to -29.63 units or -32.19% net loss (Appendix DW10).
- 5.5.3 In short, use of the current and up to date Defra 2.0 calculator appears to indicate a net loss scenario in all eventualities. Based on long experience of ecological impact assessment, this is a result that is much more consistent with my professional view, taking account of the extent of habitat loss to development and a sober analysis of the potential for compensation in the remaining part of the Appeal Site.

6 SUMMARY AND CONCLUSIONS

- 6.1 It is remarkable in the first instance that an appellant as well resourced as this has not provided a biodiversity net gain assessment in conformity with up to date Defra methodology and prevailing best practice. In any event, the Appellant's contention that the appeal proposals would deliver net gain for biodiversity does not withstand scrutiny. My evidence demonstrates that the Appellant's biodiversity net gain assessment is skewed by a number of factors. These include cursory and simplistic classification and undervaluing of the baseline habitat quality and condition, coupled with technically deficient application of an outdated methodology for calculating net loss or gain. Further bias is then introduced via highly optimistic to the point of unrealistic assumptions as to the future quality and value of retained and newly created habitats, without meaningful regard to practical matters of achievability and deliverability.
- 6.2 Whether one seeks to correct these oversights within the framework of standard ecological assessment processes, by means of the Appellant's preferred biodiversity metric methodology, or by testing the appeal proposals through a more appropriate up to date metric, the result is the same. All approaches indicate that the Appeal proposals will, in direct contradiction of the Appellant's claims, deliver net loss of biodiversity if a more robust approach is taken to applying the metrics. This means the Appeal Proposals do not comply with applicable policy at national or local level.
- 6.3 Such 'net loss' conclusions and calculations are not simply an artefact of different approaches to calculating biodiversity change or the use of different biodiversity metrics. They are consistent with my own professional opinion on the basis of the recent site visits undertaken which have, however brief, confirmed that the Appellant's assessments of the baseline habitat condition and value are deficient. Indeed when one considers the scale of the development proposed, the land-take required for buildings and hard surfaces, the very real practical challenges to habitat enhancement in the remaining part of the site and the intensified uses these remaining habitats will be subjected to, net loss of biodiversity is also a common-sense conclusion.
- 6.4 It is worth reiterating that I do not seek to suggest that the existing golf course has any more than relatively modest value for biodiversity. It is a classic example of the type of golf course that sprung up on farmland throughout lowland Britain during the 1970s to early 1990s, and in consequence the habitats are comparatively recent and large parts of the site are intensively managed. However, government policy around avoiding net loss and delivering net gain in biodiversity is not restricted solely to the protection of the highest value sites – indeed it is explicitly intended to capture the



incremental but cumulatively significant losses of lower grade habitats that contribute most to insidious biodiversity decline and which are precisely represented here. Arresting biodiversity decline requires avoidance of net loss to development everywhere, and compensating for it fully and properly where application of the mitigation hierarchy shows it to be unavoidable.

- 6.5 In conclusion, the Appellant's claims of net gain in biodiversity are not sound. Even if only the most obvious errors that I have drawn attention to are corrected and a more measured technical assessment undertaken, net loss is the indicated outcome. That outcome creates conflict with national planning policy (e.g. NPPF paragraph 170), and in any event is in contravention of adopted Local Plan policy ESD10 and the adopted resolution of Cherwell District Council to seek 10% net gain in biodiversity from all developments within the District - a forward-looking resolution that anticipates the direction of travel towards mandatory 10% net gain as enshrined in the Environment Bill. Notwithstanding the absence of a related reason for refusal in Cherwell District Council's decision notice, the failure of the Appeal Proposals to avoid net loss and thus comply with these biodiversity protection policies is clearly a relevant material consideration in the determination of this appeal.

GLOSSARY OF TECHNICAL TERMS

Biodiversity Net Gain (BNG)	A positive net change in biodiversity as measured by the application of biodiversity metrics (qv). BNG is also sometimes used as a shorthand acronym to describe the process of calculating net biodiversity change (even though the outcome can be gain, loss or no net loss) and sometimes also as shorthand for existing and emerging statute and policies around the issue.
Biodiversity Accounting	A term used to describe the process of assessing net biodiversity change by use of a biodiversity metric.
Biodiversity Metric	A set of standard formulae used for calculating the biodiversity value of existing and proposed habitats.
Biodiversity Calculator	A computer spreadsheet that simplifies the process of using Biodiversity Metrics by having cells pre-populated with drop-down menus for input options (e.g. habitats) and automated formulae.
Condition	In the sense used in biodiversity metrics, this is a measure of the condition of a habitat (i.e. the quality of the example). For example, an ancient but unmanaged hay meadow grassland may merit a high distinctiveness (qv) score but a poor condition score.
Distinctiveness	In the sense used in biodiversity metrics, this is a measure of the relative scarcity of a habitat and its importance for nature conservation. An ancient woodland, for example, will have a high distinctiveness score and a school playing field a low distinctiveness score.
Biodiversity Offsetting	A form of compensation where net habitat losses on a site are compensated off-site, either as direct creation of equivalent/greater value habitat, or by means of the use of habitat banks. In such scenarios, a biodiversity metric is generally used to quantify the amount needing to be offset.
Habitat Units or Biodiversity Units	An output from application of a biodiversity metric. A numerical value attached to a habitat resource (existing or proposed) calculated by (for example) multiplying the scores for distinctiveness, condition and area.

APPENDIX DW1



Clare Whitehead
Place and Growth Directorate
Cherwell District Council
Bodicote House
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OX15 4AA

Our Ref: 70058541
28 February 2020

Dear Clare,

Great Wolf Resort, Bicester: WSP Reponses to comments from CDC Ecology Officer 05 February 2020

The following outlines our response to the comments provided in correspondence of 28th January 2020 by Dr Charlotte Watkins (Cherwell District Council's Ecology Officer) to Clare Whitehead, regarding the application 19/02550/F for the Land to the East of M40 and South of A4095, Chesterton, Bicester.

<u>CDC Ecology Officer Comment</u>	<u>WSP Response</u>
With regard to the above application, the submitted surveys within the ES and updates are all sufficient in scope and depth at the current time. There are a number of protected and priority species on site - reptiles, a good population of Great Crested Newts, some scarce invertebrates, a good assemblage of birds.	This acknowledgement of the sufficiency of the survey work undertaken is noted and appreciated.
The proposals constitute a large loss of open space on the current golf course however much of this is amenity grassland which is of limited ecological value. The loss of trees and the general increase in recreational use on site however will impact wildlife on site both in the short and long term. Tree planting is proposed on site which will mitigate for this long term.	The acknowledgement that much of the site is of limited ecological value and that proposed planting is appropriate mitigation is agreed. It is noted that the site is currently subject to recreational use (golf) with associated maintenance pressures. As detailed below, we consider that landscape design effectively mitigates any effects relating to the proposed development.
A pre-commencement update survey for badgers will be required as a condition...	It is agreed that a badger survey is required and can be secured by way of a pre-commencement planning condition.

<u>CDC Ecology Officer Comment</u>	<u>WSP Response</u>
<p>...as will a full reptile mitigation plan which should identify any necessary receptor sites. Receptor sites which need to be enhanced for reptiles will need to be done before works commence. The applicants are pursuing a District Level Licence for the impact on Great Crested Newts so some of this impact will be dealt with by offsite provision and compensation. A Habitat Management and Monitoring Plan has been produced which is generally acceptable</p>	<p>Only one species of reptile, grass snake, was recorded on site. One individual was recorded on the edge of the development site, otherwise individuals were recorded in the area of the site where habitats will be improved.</p> <p>The proposals for Great Crested Newt (GCN) mitigation ensure adequate reptile mitigation is in place. As required by the District Level Licence, a GCN translocation will take place, and reptiles present would be captured as part of this process. The District Level Licence requires that on-site compensatory habitats will be created within 6 months of commencement of development activities. These habitats will offer sufficient carrying capacity for any translocated/ displaced reptiles, and the proposed management (detailed in the Habitat Management and Monitoring Plan) is compatible with reptiles.</p> <p>We trust that this additional information provides reassurance and add that a suitably worded planning condition securing the above is acceptable to the applicant.</p>
<p>The assessment of Biodiversity net gain demonstrates a good level of net gain could be achieved on site however they have not submitted the whole metric, only a summary, and it would be useful to see how they have calculated all the figures in the metric itself.</p>	<p>Please see the attached PDF calculations, this represents the working in full.</p>

<u>CDC Ecology Officer Comment</u>	<u>WSP Response</u>
<p>They have rated all the current habitats as 'poor'</p>	<p>We are of the view that the classification of most habitats as being of poor condition (distinctiveness is predefined by Defra) is fully justified. The woody habitats lack a diverse age and height structure, and significant dead wood is absent. All habitats (except perhaps some limited areas of habitat to the peripheries of the site such that would not be affected by the development) are subject to very intensive management (including frequent mowing and fertilizer application), as well as significant recreational pressure through use for golf. Habitats exhibit low species diversity and are relatively recent in origin. The assessment has been made based on professional judgement informed by the <i>Farm Environment Plan</i> criteria for condition assessment</p>

<u>CDC Ecology Officer Comment</u>	<u>WSP Response</u>
<p>...and there is some loss of important habitats long term, namely running water. The net gain calculation summary states these are ditches which are often dry and will be replaced by swales however the Phase 1 survey report states there is a small stream (RW1) which looks to also be being lost and I wonder if this is accounted for? I couldn't find anything else on this.</p>	<p>One of the ditches on site was classified as running water in the Phase 1 habitat survey. This survey was conducted in January 2018, and at that time it was holding some water. However, on subsequent visits it was dry and therefore can be classified to be a dry ditch. This is a man-made feature lacking in semi-natural attributes which would not support a significant assemblage of aquatic specialist species. Accordingly, it is appropriate that it can be compensated for by the provision of swales.</p> <p>Further evidence to support this conclusion is provided by the drainage strategy (prepared by <i>Curtins</i>), which has been discussed with Oxford County Council as the Lead Local Flood Authority, identifying the stream as a ditch '<i>Ditch 2... which discharges into an irrigation pond</i>'. Appendix 8 of the Drainage strategy provides further information regarding the ditch: '<i>As shown above, there are two existing ditches running across the Site from north to south. It is understood that these ditches were constructed by site maintenance staff to manage ground water. This was confirmed by the site staff during a walkover. The two ditches join in an inspection chamber to the north of the existing hotel</i>'. Photographs of the ditch are enclosed as further evidence.</p>

<u>CDC Ecology Officer Comment</u>	<u>WSP Response</u>
<p>The opportunity to create higher value habitat as mitigation and enhancement has been taken mainly in the green space to the West of the main buildings. Some of the proposed habitat creation may be difficult to create and maintain in the long term – a large part of the semi-improved grassland for example is within the area from the buildings to the carpark where managing it for wildlife benefit may conflict with other needs.</p>	<p>A small proportion of the total habitat created as part of the proposed development occurs close to the proposed buildings. Whilst we agree that there are challenges in such areas, these areas (as with the whole application site) will be subject to the management specified in the habitat management plan (which will be secured by way of a planning obligation in the section 106). Whilst these areas do offer a challenge in terms of habitat creation it is important to note that they would provide resources to wildlife, such as nectar and resting opportunities.</p> <p>It is also relevant that existing habitats (to be replaced or enhanced as part of the proposed development) include areas located near to the existing hotel and also those subject to significant recreational and maintenance pressure and intervention.</p>
<p>I can't tell if calculations for 'scrub' includes small areas of ornamental planting around the carpark which may be of limited value – these are marked as scrub in the post-development habitat map. Similarly with the low (1.2m) hedging proposed within the large carpark area. This should be clarified.</p>	<p>These areas are included in the net-gain calculation and were classified as dense scrub. This was considered more appropriate than other options such as hedgerow. Notwithstanding, we add that this part of the site (those habitats within the vicinity of the new buildings and car park) contribute approximately 9.7 units to the post development total of 70.9, which overall delivers a net gain of 15.1 units. If this unit contribution were to be reduced, the scheme would continue to deliver a net-gain in biodiversity.</p>
<p>The large strip of amenity grassland to the Southern edge of the buildings would be better replaced with other grassland which would better maintain a wildlife connection between the (current) two halves of the golf course.</p>	<p>This comment is appreciated, and the applicant is happy to agree to this. As part of a final landscape plan (to be secured by way of planning condition) we will need CDC approval working with CDC Ecology and Landscape officers. Any change represents an improvement in the biodiversity net gain calculation and we therefore assume is welcomed.</p>

<u>CDC Ecology Officer Comment</u>	<u>WSP Response</u>
<p>Currently the placement of the buildings isolates the two halves to some extent.</p>	<p>As part of the design team we have worked closely with the architects and landscape architects to reduce fragmentation within the limits of the design layout. Steps taken included maintaining a corridor enhanced by the provision of ponds and woodland planting. In our opinion, when considered alongside connectivity provided by the verges of the adjacent M40, the landscape plan adequately mitigates the effects of fragmentation. Dropped kerbs are also included within the scheme to help facilitate movement through the site.</p>
<p>Overall achievement of net gain will be dependent on the management and use of the green spaces in particular. The Design and Access Statement proposes trails through the Western area and suggests it will be used for walking dogs and recreation. This may not be compatible with maintaining some of the proposed habitats in the best condition for wildlife. In particular some of the suggestions for invertebrates such as sandy banks may be difficult to maintain if the area is heavily used for recreation or dogs are off the lead. The size of the carpark suggests daily footfall could be relatively high in this small space. It would be better if at least some areas were committed to being inaccessible to visitors.</p>	<p>We agree that the management of the proposed nature trails will be important in achieving of the net-gain results. Whilst the development includes a publicly accessible area to the north west, access will be carefully managed through the provision of footpaths and dedicated picnic area and this will be secured by legal agreement. It is currently proposed that the surrounding grassland will be managed to have a tall height, with extensive woodland planting, which are intended to be unattractive for users to deviate from the managed public route. The final landscape details associated with this area are to be controlled by way of a planning condition and therefore this requirement to reflect the biodiversity net gain calculations can be factored into that approval. In terms of dog walking and dogs being allowed off the lead, this area will be public but carefully managed and it is suggested that dogs being on a lead is a requirement. This will be secured by way of a planning obligation requirement a management plan for this area.</p>

<u>CDC Ecology Officer Comment</u>	<u>WSP Response</u>
<p>In addition, the area is shown as being lit at night and I would question the need for this? This area should be kept dark to maximise its value to biodiversity, limit light intrusion for bats and maintain dark corridors around the site.</p> <p>Similarly with lighting there are plans to light up trees – this should be avoided due to its potential impact on the use of trees by nocturnal species. Lighting on the building should be designed with integrated bat/bird provisions in mind.</p>	<p>Lighting is only proposed in the immediate environs of the hotel and car park. This is necessary for operational and health and safety reasons. The contribution of the bollarded lighting and tree illumination would be minimal in the context of the roads and car park to be illuminated.</p> <p>We suggest that locations for bat and bird boxes are reviewed as part of a detailed landscape condition (which we are happy to be a pre-commencement of development condition), to allow consideration alongside detailed designs for lighting, again this will be the subject of detailed approval by way of discharge of a planning condition.</p>
<p>The concerns above could be addressed in a modified lighting plan, making it clear which aspects are included in their net gain, showing where RW1 is accounted for and by a conditioned LEMP which takes recreational pressure and its management into account. The net gain calculation will need updating if there are any changes.</p>	<p>We accept these comments and trust that our responses above provide reassurance regarding the concerns raised. We note that lighting as well as biodiversity net gain may be secured my way of planning conditions, and their discharge will require input from CDC ecology.</p>
<p>A CEMP for biodiversity should be conditioned. There is a draft CMP but this does not address pre-works checks nesting bird surveys or works timings, tree checks for bats where necessary, buffer zones around existing vegetation during construction, protection of retained ponds etc..</p>	<p>We agree that a CEMP is needed to ensure appropriate protections are put in place during construction and that this can be secured by planning condition.</p>

I trust that the responses satisfy the concerns of the CDC officer. If there are any further queries, I would welcome the opportunity for further discussion.



Yours Sincerely

Luke Roberts
Principal Ecologist

Enclosures:
Photographs of ditch on site, classified as running water by Phase 1 survey
Metric calculations

CC
Peter Twemlow DP9



Photograph 1 : Ditch in January 2019.



Photograph 2 : Ditch in Summer.

Area-based Units - RETAINED

Before Works (Baseline)					
Ref	Phase 1 Habitat	Distinctiveness <i>Band</i>	Condition <i>Rating</i>	Area of Habitat <i>Hectares</i>	Biodiversity Units
<i>Project Total</i>				4.280	20.760
1	A1.1.2 : Woodland : Broadleaved - plantation (Medium)	Medium	Poor	0.320	1.280
2	A1.3.2 : Woodland : Mixed - plantation	Medium	Poor	0.780	3.120
3	A3.1 : Parkland/scattered trees : Broadleaved (Medium)	Medium	Poor	0.390	1.560
6	G1.1 : Standing water : Eutrophic (High)	High	Moderate	0.890	10.680
7	J1.2 : Cultivated/disturbed land : Amenity grassland	Low	Poor	1.740	3.480
6					
7					
8					
9					
10					

Total Biodiversity Units
Post Development
20.760

Area-based Units - CREATED

Before Works (Baseline)					
Ref	Phase 1 Habitat	Distinctiveness <i>Band</i>	Condition <i>Rating</i>	Area of Habitat <i>Hectares</i>	Biodiversity Units
Project Total				11.360	29.080
1	A1.1.2 : Woodland : Broadleaved - plantation (Medium)	Medium	Poor	0.380	1.520
2	A1.3.2 : Woodland : Mixed - plantation	Medium	Poor	0.430	1.720
3	A2.1 : Scrub : Dense/continuous	Medium	Poor	0.010	0.040
4	A3.1 : Parkland/scattered trees : Broadleaved (Medium)	Medium	Poor	0.630	2.520
5	A3.2 : Parkland/scattered trees : Coniferous (Medium)	Medium	Poor	0.020	0.080
6	A3.3 : Parkland/scattered trees : Mixed (Medium)	Medium	Poor	0.300	1.200
7	B2.2 : Neutral grassland : semi-improved	Medium	Poor	0.460	1.840
8	B6 : Poor semi-improved grassland	Low	Poor	0.420	0.840
9	G1.1 : Standing water : Eutrophic (High)	High	Moderate	0.190	2.280
10	J1.2 : Cultivated/disturbed land : Amenity grassland	Low	Poor	8.230	16.460
11	J1.3 : Cultivated/disturbed land : Ephemeral/short perennial (Low)	Low	Poor	0.010	0.020
12	J1.4 : Cultivated/disturbed land : Introduced shrub	Low	Poor	0.150	0.300
13	J4 : Bare ground	Low	Poor	0.010	0.020
14	J5 : Other habitat (Low)	Low	Poor	0.120	0.240

Action (During Works)			
Hectares of habitat		Biodiversity Units	
<i>Retained</i>	<i>Removed</i>	<i>Retained</i>	<i>Removed</i>
0.000	11.360	0.000	29.080
0.000	0.380	0.000	1.520
0.000	0.430	0.000	1.720
0.000	0.010	0.000	0.040
0.000	0.630	0.000	2.520
0.000	0.020	0.000	0.080
0.000	0.300	0.000	1.200
0.000	0.460	0.000	1.840
0.000	0.420	0.000	0.840
0.000	0.190	0.000	2.280
0.000	8.230	0.000	16.460
0.000	0.010	0.000	0.020
0.000	0.150	0.000	0.300
0.000	0.010	0.000	0.020
0.000	0.120	0.000	0.240

After work actions (Following Action)								
Ref	Phase 1 Habitat	After work action	Distinctiveness <i>Band</i>	Target Condition <i>Rating</i>	Area of Habitat <i>Hectares</i>	Difficulty to Create <i>Difficulty</i>	Time to target condition <i>Years</i>	Biodiversity Units Retained / Created
Project Total					11.260			31.074
1	A1.1.2 : Woodland : Broadleaved - plantation (Medium)	Create	Medium	Good	2.180	Low	16-20	13.080
2	A1.3.2 : Woodland : Mixed - plantation	Create	Medium	Good	0.230	Low	16-20	1.380
3	A2.1 : Scrub : Dense/continuous	Create	Medium	Good	0.480	Low	3-5	4.781
4	A3.1 : Parkland/scattered trees : Broadleaved (Medium)	Create	Medium	Good	0.070	Low	16-20	0.420
5	B2.2 : Neutral grassland : semi-improved	Create	Medium	Good	0.580	Low	6-10	4.942
6	B5 : Marsh/marshy grassland (High)	Create	High	Moderate	0.630	High	6-10	1.771
7	G1.1 : Standing water : Eutrophic (High)	Create	High	Good	0.200	Low	<1	3.600
8	J1.2 : Cultivated/disturbed land : Amenity grassland	Create	Low	Poor	0.430	Low	2	0.800
9	J3.6 : Built-up areas : Buildings	Create	N/A	N/A	6.310	N/A	N/A	0.000
10	J4 : Bare ground	Create	Low	Poor	0.150	Low	<1	0.300
11								
12								
13								
14								

Total Biodiversity Units
Post Development
31.074

Total Units Gained / Lost
1.994

Percentage Change (%)
106.9

Hedgerow Linear Units

Before Works (Baseline)				
Ref	Phase 1 Habitat	Condition Rating	Length of Linear Habitat Metres	Linear Units
Project Total			182	546
1	J2.1.1 : Boundaries : Hedges - Intact - native species-rich	Good	116	347
2				
3	J2.1.2 : Boundaries : Hedges - Intact - species-poor	Good	58	174
4	J2.3.1 : Boundaries : Hedges - With trees - native species-rich	Good	9	26
5				
6				
7				
8				
9				
10				

Action (During Works)			
Length of habitat (m)		Linear Units	
Retained	Removed	Retained	Removed
124	58	372	174
116	0	347	0
0	58	0	174
9	0	26	0

After work actions (Following Action)				
Ref	Phase 1 Habitat	After work action	Length of Linear Habitat Metres	Linear Units Retained / Created
Project Total			937	1185
1	J2.1.1 : Boundaries : Hedges - Intact - native species-rich	Retained	116	347
2	J2.1.1 : Boundaries : Hedges - Intact - native species-rich	Create	521	521
3	J2.1.2 : Boundaries : Hedges - Intact - species-poor	Create	42	42
4	J2.3.1 : Boundaries : Hedges - With trees - native species-rich	Retained	9	26
5	J2.3.1 : Boundaries : Hedges - With trees - native species-rich	Create	135	135
6	J2.3.2 : Boundaries : Hedges - With trees - species-poor (High)	Create	116	116
7				
8				
9				
10				

Total Linear Units
Post Development
1185

Total Units Gained / Lost
639

Percentage Change (%)
216.9

APPENDIX DW2

APP/C3105/W/20/3259189 - Great Wolf Resorts - Chesterton

Dominic Woodfield <dominicwoodfield@bioscanuk.com>

23 December 2020 at 10:55

To: tom.butterworth@wsp.com, luke.roberts@wsp.com, Sam.willis@wsp.com, Rebecca Read <rebeccaread@bioscanuk.com>

Dear Tom/Luke/Sam

We act for the Rule 6 party 'Parishes Against Wolf' (PAW) in respect of the above appeal.

To assist the smooth running of the inquiry and in the interests of transparency and to avoid extraneous or abortive work on all sides (including PINS), please can you provide working versions (i.e. completed Excel spreadsheets) of the calculations the appellants seek to rely upon in respect of biodiversity net gain.

We have noted that it is not possible from the information contained in Appendix 9.10 of the ES (Biodiversity Net Gain Assessment Report) to accurately determine the processes WSP have gone through in arriving at the outputs presented in that document.

We have also noted the calculations attached to Luke Roberts' letter of 28 February 2020 to Claire Whitehead of CDC after clarity on this point was sought by CDC. However we cannot relate these to any of the accepted Defra or Defra-based calculators in use at that time. Please could you clarify which metric was being used and provide functional versions of the completed Excel spreadsheets for same.

As this information is important for the preparation of evidence, could we ask that it be provided by return and no later than 31st December in order to allow sufficient time for evidence preparation and exchange by 12 January. As this should be a simple matter of unprotecting and then emailing the relevant Excel files, we assume there is no issue with this timescale.

Many thanks in advance for your cooperation

Best regards

Dominic Woodfield CEng CEnv MCIEEM
Director

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www.bioscanuk.com
dominicwoodfield@bioscanuk.com

COVID-19

Although the Bioscan office has re-opened, some staff are working from home and therefore clients are asked to make contact via e-mail or mobile. In accordance with the latest public health advice we will be using remote alternatives to attendance at and travel to meetings except where there is a proven necessity. We will also be following the latest CIEEM advice in respect of fieldwork.

APPENDIX DW3



UK Biodiversity Action Plan Priority Habitat Descriptions

Ponds

From:

UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008.

This document is available from:

<http://jncc.defra.gov.uk/page-5706>

For more information about the UK Biodiversity Action Plan (UK BAP) visit

<http://www.jncc.defra.gov.uk/page-5155>

Please note: this document was uploaded in November 2016, and replaces an earlier version, in order to correct a broken web-link. No other changes have been made. The earlier version can be viewed and downloaded from The National Archives:
<http://webarchive.nationalarchives.gov.uk/20150302161254/http://jncc.defra.gov.uk/page-5706>

Ponds

Correspondence with existing habitats

- UK BAP broad habitat: Standing open waters and canals
- Phase 1: G1 Standing water
- NVC: Various aquatic, swamp and fen communities; OV28–OV35; and others
- Annex I: Includes H3170 Mediterranean temporary ponds; H3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflora*) (part); H3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoeto-Nanojuncetea* (part); H3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. (part); H3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation (part); and H3160 Natural dystrophic lakes and ponds (part)

Description

Ponds, for the purpose of UK BAP priority habitat classification, are defined as permanent and seasonal standing water bodies up to 2ha in extent, which meet one or more of the following criteria:

- Habitats of international importance: Ponds that meet criteria under Annex I of the Habitats Directive.
- Species of high conservation importance: Ponds supporting Red Data Book species, UK BAP species, species fully protected under the Wildlife and Countryside Act Schedule 5 and 8, Habitats Directive Annex II species, a Nationally Scarce wetland plant species, or three Nationally Scarce aquatic invertebrate species.
- Exceptional assemblages of key biotic groups: Ponds supporting exceptional populations or numbers of key species. Based on (i) criteria specified in guidelines for the selection of biological SSSIs (currently amphibians and dragonflies only), and (ii) exceptionally rich sites for plants or invertebrates (i.e. supporting ≥ 30 wetland plant species or ≥ 50 aquatic macroinvertebrate species).
- Ponds of high ecological quality: Ponds classified in the top PSYM category (“high”) for ecological quality (i.e. having a PSYM score $\geq 75\%$). [PSYM (the Predictive SYstem for Multimetrics) is a method for assessing the biological quality of still waters in England and Wales; plant species and / or invertebrate families are surveyed using a standard method; the PSYM model makes predictions for the site based on environmental data and using a minimally impaired pond dataset; comparison of the prediction and observed data gives a % score for ponds quality].
- Other important ponds: Individual ponds or groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context (e.g. pingos, duneslack ponds, machair ponds).

Priority habitat ponds can be readily identified by standard survey techniques such as those developed for NVC, Common Standards Monitoring, the National Pond Survey or for specific species groups. Ponds will need to be distinguished from other existing priority habitat types. The general principle to be applied is that where the standing water element is functionally a component of another priority habitat and that priority habitat definition takes account of the standing water element then it should be treated as part of that habitat. For example small waterbodies within blanket bog should be considered as part of the blanket bog priority habitat, but ponds in heathland (which are not dealt with through the heathland HAP) should be considered under the pond priority habitat. Agreement has been reached with the lake HAP group that the pond priority habitat will cover most water bodies up to 2ha while the lake priority habitat will cover most water bodies greater than 2ha. As with other potentially overlapping priority habitat types a small proportion of cases will need to be individually assessed to decide how they are best dealt with.

Ponds are widespread throughout the UK, but high-quality examples are now highly localised, especially in the lowlands. In certain areas high quality ponds form particularly significant elements of the landscape, for example Cheshire Plan marl pits, the New Forest ponds, pingos of East Anglia, mid-Wales mawn pools, the North East Wales pond landscape, the forest and moorland pools of Speyside, dune slack pools, the machair pools in the Western Isles of Scotland, and examples of Habitats Directive Annex I pond habitats across Northern Ireland.

Estimates, based on the relatively small pond data sets currently available, suggest that around 20% of the c400,000 ponds outside curtilage in the UK might meet one or more of the above criteria.

An inventory of ponds, including many high quality sites, has been established as part of the National Pond Monitoring Network and work is in progress to add further known sites to this database. This is publicly accessible (for non-sensitive sites/species) at www.pondnetwork.org.uk. Currently about 500 high quality sites are listed on this database. The National Pond Monitoring Network (NPMN) will provide the main mechanism for monitoring priority habitat ponds. The NPMN was established in 2002 as a partnership of organisations involved in pond monitoring led by the Environment Agency and Pond Conservation.

APPENDIX DW4

Biodiversity Impact Assessment Calculator

Please fill in both tables

KEY	
No action required	
Enter value	
Drop-down menu	
Calculation	
Automatic lookup	
Result	

Local Planning Authority:	Cherwell DC
Site name:	Great Wolf Water Park
Planning application reference number:	19/02550/F
User:	DW
Date:	05.01.21

Please do not edit the formulae or structure
 To condense the form for display hide vacant rows, do not delete them
 If additional rows are required, or to provide feedback on the calculator please contact WCC Ecological Services

T. Note	code	Phase 1 habitat description	Habitat area (ha)	Habitat distinctiveness		Habitat condition		Habitat Biodiversity Value				Comment		
				Distinctiveness	Score	Condition	Score	Habitats to be retained with no change within development		Habitats to be retained and restored within development			Habitats to be lost within development	
								Area (ha)	Existing value	Area (ha)	Existing value		Area (ha)	Existing value
Existing habitats on site Please enter all habitats within the site boundary														
Direct Impacts and retained habitats														
1	A112	Woodland: Broad-leaved plantation	0.85	Medium	4	Poor	1	0.32	1.28	0.04	0.16	0.49	1.96	
2	A132	Woodland: Mixed plantation	1.22	Medium	4	Poor	1	0.78	3.12	0.17	0.68	0.27	1.08	Default distinctiveness is 'low' but WSP has inflated to 'medium'. This gives 3.12BU retention value [WHERE IS THE REASONING?]; default is 'low' which gives 1.56BU retention value
3	A21	Woodland: Dense continuous scrub	0.03	Medium	4	Poor	1				0.03	0.12		
4	A31	Woodland: Broad-leaved parkland / Scattered trees	1.05	Medium	4	Poor	1	0.39	1.56	0.05	0.20	0.61	2.44	Default distinctiveness is 'high' but WSP has downgraded to 'medium'. This gives retention value of 1.56BU [WHERE IS THE REASONING?]; default is 'high' which gives retention value 2.34BU
5	A32	Woodland: Coniferous parkland / Scattered trees	0.22	Medium	4	Poor	1	0.15	0.60			0.07	0.28	Retained area of 0.15ha claimed in BNG report, but no reference to this in the Feb20 letter.
6	#N/A	Woodland: Coniferous parkland / Mixed	0.31	Medium	4	Poor	1	0.01	0.04			0.30	1.20	Non-standard habitat. Retained area of 0.01ha claimed in BNG report, but no reference to this in the Feb20 letter.
7	B22	Grassland: Semi-improved neutral grassland	0.46	Medium	4	Poor	1					0.46	1.84	
8	B6	Grassland: Poor semi-improved grassland	0.43	Low	2	Poor	1			0.01	0.02	0.42	0.84	Default distinctiveness is 'medium' but WSP has downgraded to 'low'.
9	G1	Wetland: Standing water	1.08	High	6	Moderate	2	0.89	10.68			0.19	2.28	2no ponds with GCN to be removed are Priority Habitat/HPI. WSP claim no loss of HPI.
10	J12	Grassland: Amenity grassland	12.45	Low	2	Poor	1	1.74	3.48	2.48	4.96	8.23	16.46	Enhancement of 1.74ha of amenity grassland to semi-improved neutral grassland claimed
11	J13	Other: Ephemeral/short perennial	0.01	Low	2	Poor	1					0.01	0.02	
12	J14	Other: Introduced shrub	0.15	Low	2	Poor	1					0.15	0.30	
13	J4	Other: Bare ground	0.01	Low	2	Poor	1					0.01	0.02	
14	J4	Other: Bare ground	0.12	Low	2	Poor	1					0.12	0.24	
Total				18.39				4.28	20.76	2.75	6.02	11.36	29.08	J
Indirect Impacts								Value of loss from indirect impacts		Site habitat biodiversity value			55.86	
Including off site habitats				K				K x A x B = Li, Lii						
Before	Impact													
After														
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Before														
After														
Before														
After														
Before														
After														
Total				0.00				M	0.00	HIS = J + M			29.08	
Habitat Impact Score (HIS)												29.08		

Area based units retained matches 20.76 figure cited in feb20 letter
 Area based units retained and restored/enhanced matches 6.02 figure cited in Feb20 letter
 Result of 55.86 for site habitat biodiversity value matches output at Table 3-1 of Appendix 9.10

No attempt made to consider offsite impacts (e.g. to adjacent parts of golf course)

APPENDIX DW5

Biodiversity Impact Assessment Calculator

Please fill in both tables

KEY
No action required
Enter value
Drop-down menu
Calculation
Automatic lookup
Result

Local Planning Authority:	Cherwell DC
Site name:	Great Wolf Water Park
Planning application reference number:	19/02550/F
User:	DW
Date:	05.01.21

Please do not edit the formulae or structure
To condense the form for display hide vacant rows, do not delete them
If additional rows are required, or to provide feedback on the calculator please contact WCC Ecological Services

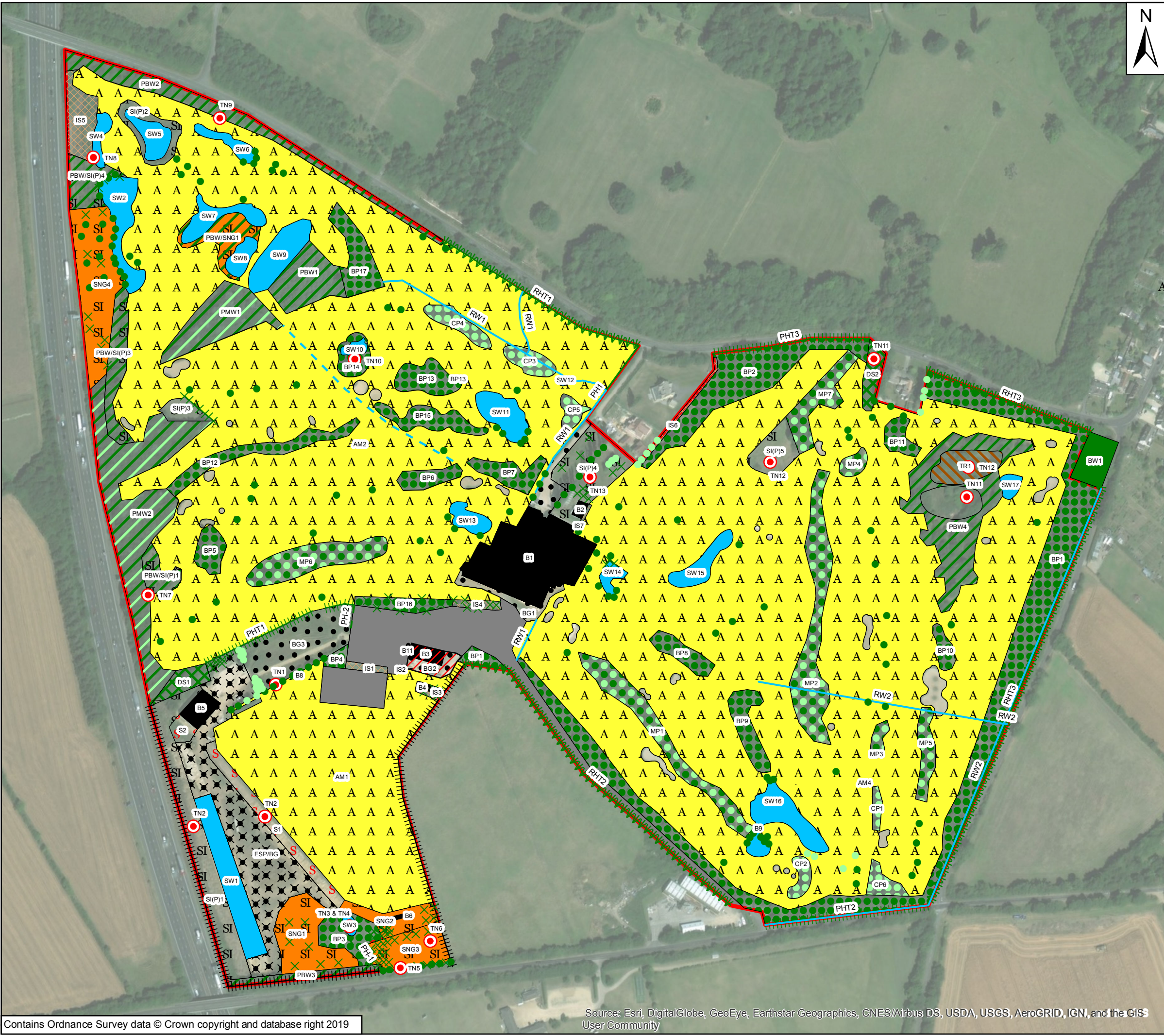
T. Note	code	Existing habitats on site		Habitat distinctiveness		Habitat condition		Habitat Biodiversity Value				Comment		
		Please enter all habitats within the site boundary		Distinctiveness	Score	Condition	Score	Habitats to be retained with no change within development		Habitats to be retained and restored within development			Habitats to be lost within development	
		Phase 1 habitat description	Habitat area (ha)					Area (ha)	Existing value	Area (ha)	Existing value		Area (ha)	Existing value
Direct Impacts and retained habitats		A	B	C	A x B x C = D	E	A x B x E = F	G	A x B x G = H	J				
1	A112	Woodland: Broad-leaved plantation	0.85	Medium	4	Poor	1	0.32	1.28	0.04	0.16	0.49	1.96	
2	A132	Woodland: Mixed plantation	1.22	Low	2	Poor	1	0.78	1.56	0.17	0.34	0.27	0.54	Default distinctiveness of 'low' reinstated
3	A21	Woodland: Dense continuous scrub	0.03	Medium	4	Poor	1					0.03	0.12	
4	A31	Woodland: Broad-leaved parkland / Scattered trees	1.05	High	6	Poor	1	0.39	2.34	0.05	0.30	0.61	3.66	Default distinctiveness of 'high' reinstated
5	A32	Woodland: Coniferous parkland / Scattered trees	0.22	Medium	4	Poor	1	0.15	0.60			0.07	0.28	Retained area of 0.15ha claimed in BNG report, but no reference to this in the Feb20 letter.
6	#N/A	Woodland: Coniferous parkland / Mixed	0.31	Medium	4	Poor	1	0.01	0.04			0.30	1.20	Non-standard habitat. Retained area of 0.01ha claimed in BNG report, but no reference to this in the Feb20 letter.
7	B22	Grassland: Semi-improved neutral grassland	0.46	Medium	4	Poor	1					0.46	1.84	
8	B6	Grassland: Poor semi-improved grassland	0.43	Medium	4	Poor	1			0.01	0.04	0.42	1.68	Default distinctiveness of 'medium' reinstated
9	G1	Wetland: Standing water	1.08	High	6	Moderate	2	0.89	10.68			0.19	2.28	2no ponds with GCN to be removed are Priority Habitat/HPI. WSP claim no loss of HPI.
10	J12	Grassland: Amenity grassland	12.45	Low	2	Poor	1	1.74	3.48	2.48	4.96	8.23	16.46	Enhancement of 1.74ha of amenity grassland to semi-improved neutral grassland claimed
11	J13	Other: Ephemeral/short perennial	0.01	Low	2	Poor	1					0.01	0.02	
12	J14	Other: Introduced shrub	0.15	Low	2	Poor	1					0.15	0.30	
13	J4	Other: Bare ground	0.01	Low	2	Poor	1					0.01	0.02	
14	J4	Other: Bare ground	0.12	Low	2	Poor	1					0.12	0.24	
Total			18.39				Total	4.28	19.98	2.75	5.80	11.36	30.60	NOTE: reinstatement of default distinctiveness triggers warning message about high distinctiveness habitats in red text below Area based units retained matches 20.76 figure cited in feb20 letter Area based units retained and restored/enhanced matches 6.02 figure cited in Feb20 letter Result of 55.86 for site habitat biodiversity value matches output at Table 3-1 of Appendix 9.10
										Site habitat biodiversity value		55.38		
Indirect Impacts		Including off site habitats		K		Value of loss from indirect impacts		K x A x B = Li, Lii		Li - Lii				
Before	Impact													
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CAUTION - Destruction of habitats of high distinctiveness, e.g. lowland meadow or ancient woodland, may be against local policy. Has the mitigation hierarchy been followed, can impact to these habitats be avoided?
 Any unavoidable loss of habitats of high distinctiveness must be replaced like-for-like.

T. Note	Proposed habitats on site (Onsite mitigation)			Target habitats distinctiveness		Target habitat condition		Time till target condition		Difficulty of creation / restoration		Habitat biodiversity value (N x O x P) / Q / R	Comment	
	code	Phase 1 habitat description	Area (ha)	Distinctiveness	Score	Condition	Score	Time (years)	Score	Difficulty	Score			
Habitat Creation														
			N		O		P		Q		R			
1	A112	Woodland: Broad-leaved plantation	2.18	Medium	4	Good	3	20 years	2	Medium	1.5	8.72	Good' target condition applied in Feb20 letter, but BNG report stated 'moderate'. Default difficulty of creation is 'medium', but WSP have applied 'low' without providing reasoning.	
2	A132	Woodland: Mixed plantation	0.23	Low	2	Good	3	20 years	2	Medium	1.5	0.46	Default distinctiveness is 'low' but WSP has applied 'medium' without justification. Default difficulty of creation is 'medium', but WSP have applied 'low' without providing reasoning.	
3	A21	Woodland: Dense continuous scrub	0.48	Medium	4	Good	3	5 years	1.2	Low	1	4.80	4.781 BU cited in Feb20 letter which also states 3-5 years which is unrealistic for 'dense continuous'	
4	A31	Woodland: Broad-leaved parkland / Scattered trees	0.07	High	6	Good	3	20 years	2	Medium	1.5	0.42	Default distinctiveness is 'high' but WSP has applied 'medium' without justification. Default difficulty of creation is 'medium', but WSP have applied 'low' without providing reasoning.	
5	B22	Grassland: Semi-improved neutral grassland	0.58	Medium	4	Good	3	10 years	1.4	Medium	1.5	3.31	4.942 BU cited in Feb20 letter. Default difficulty of creation is 'medium', but WSP have applied 'low' without providing reasoning.	
6	B5	Grassland: Marsh / Marshy grassland	0.63	High	6	Moderate	2	10 years	1.4	High	3	1.80	1.771 BU cited in Feb20 letter	
7	G1	Wetland: Standing water	0.20	High	6	Good	3	5 years	1.2	Medium	1.5	2.00	3.6 BU cited in Feb20 letter, presumably because a time to target condition of <1 year has been given, which is not a selectable option in the metric. 'Good' target condition applied in Feb20 letter, but BNG report stated 'moderate'. Default diffi	
8	J12	Grassland: Amenity grassland	0.43	Low	2	Poor	1	5 years	1.2	Low	1	0.72	0.8 BU cited in Feb20 letter, presumably because a time to target condition of 2 years has been given, which is not a selectable option in the metric.	
9	n/a	Built Environment: Buildings/hardstanding	6.31	none	0	Moderate	2	5 years	1.2	Low	1	0.00	6.31ha stated in Feb20 letter, but 6.41ha cited in the BNG report.	
10	J4	Other: Bare ground	0.15	Low	2	Poor	1	5 years	1.2	Low	1	0.25	0.3 BU cited in Feb20 letter, presumably because a time to target condition of <1 year has been given, which is not a selectable option in the metric.	
Total			11.26	ERROR - Total area of habitats created must equal total area of habitats lost										22.48 Sum of habitat creation compared with 31.074 cited in Feb20 letter (see above notes) Error indicated that total area of habitats created does not match total lost
Habitat Restoration														
							Existing value S (= F)					((N x O x P) - S) / Q / R		
1	A112	Woodland: Broad-leaved plantation	0.04	Medium	4	Good	3	0.16	10 years	1.4	Low	1	0.23	
2	A112	Woodland: Broad-leaved plantation		Medium	4	Good	3		10 years	1.4	Low	1	0.00	
3	A132	Woodland: Mixed plantation	0.17	Low	2	Good	3	0.68	10 years	1.4	Low	1	0.24	Default target distinctiveness is 'low' but WSP has applied 'medium' without justification.
4	A132	Woodland: Mixed plantation		Low	2	Good	3		10 years	1.4	Low	1	0.00	Default target distinctiveness is 'low' but WSP has applied 'medium' without justification.
5	A31	Woodland: Broad-leaved parkland / Scattered trees	0.05	High	6	Good	3	0.20	10 years	1.4	Low	1	0.50	Default target distinctiveness is 'high' but WSP has applied 'medium' without justification.
6	B22	Grassland: Semi-improved neutral grassland	0.01	Medium	4	Good	3	0.04	10 years	1.4	Low	1	0.06	
7	B22	Grassland: Semi-improved neutral grassland	2.48	Medium	4	Good	3	4.96	10 years	1.4	Low	1	17.71	Slightly different biodiversity value output scores seemingly due to different rounding in column O
Total			2.75	ERROR - Please enter respective existing values for habitats to be restored										18.74 Sum of habitat enhancement compared with 19.1558 cited in Feb20 letter (see above notes)
Trading down correction value												-0.87		
Habitat Mitigation Score (HMS)												40.35		
Habitat Biodiversity Impact Score												9.75	Gain	
Percentage of biodiversity impact loss														

KEY	
No action required	
Action required	
Drop-down menu	
Calculation	
Automatic lookup	
Overall Result	Loss to biodiversity Gain to biodiversity

APPENDIX DW6



Key

- Survey Area
- Scattered Broadleaved Trees
- Scattered Coniferous Trees
- × Scattered Scrub
- ⊙ Target Note
- Defunct Hedge - Species-Poor
- Dry Ditch
- Fence
- Hedge with Trees - Species-Poor
- Hedge with Trees - Species-Rich
- Intact Hedge - Species-Poor
- Running Water
- Amenity Grassland
- Bare Ground
- Broadleaved Parkland/Scattered Trees
- Broadleaved Woodland - Plantation
- Broadleaved Woodland - Semi-Natural
- Buildings
- Coniferous Parkland/Scattered Trees
- Ephemeral/Short Perennial
- Introduced Shrub
- Mixed Parkland/Scattered Trees
- Mixed Woodland - Plantation
- Neutral Grassland - Semi-Improved
- Other Habitat
- Other Tall Herb and Fern - Ruderal
- Poor Semi-Improved Grassland
- Scrub - Dense/Continuous
- Spoil
- Standing Water
- Hardstanding
- No Access

0 0.05 0.1 0.15 0.2
km



Client:	DP9
Project:	Bicester
Title:	Phase 1 Habitat Survey

Drawing No:	Figure 4	Drawn:	BW
Date:	October 2019	Checked:	LR
Scale:	3,570 @ A3	Approved:	AH

APPENDIX DW7



Sign in

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APPENDIX DW8

APPENDIX DW9

Headline Results

[Return to results menu](#)

On-site baseline	<i>Habitat units</i>	59.02
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	54.42
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	<i>Habitat units</i>	-4.60
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00

Total net % change

(including all on-site & off-site habitat creation + retained habitats)

Habitat units

-7.80%

Hedgerow units

0.00%

River units

0.00%

Detailed Results

Return to results menu

Summary Figures

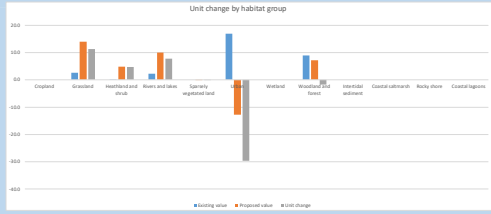
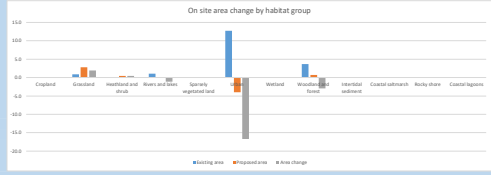
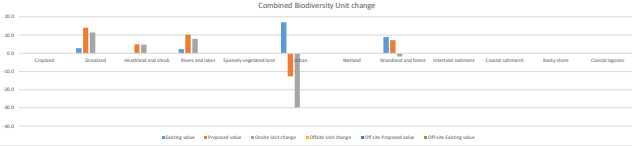
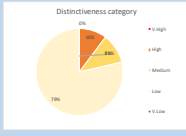
Net project biodiversity units (including all on-site & off-site habitat retention/creation)	Habitat units: 4.60
	Wetprow units: 0.00
	River units: 0.00
Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Reseined Habitats)	Habitat units: -7.80%
	Wetprow units: 0.00%
	River units: 0.00%

On-site habitat retention and enhancement

	Habitats	Wetprows	Rivers
Total site area / length	18.9	0.00	0.00
Total site length	59.02	0.00	0.00
Area / length retained	4.28	0.00	0.00
Units Retained	23.85	0.00	0.00
Area / length enhanced	2.75	0.00	0.00
Baseline units enhanced	6.12	0.00	0.00
Area / length lost	0.00	0.00	0.00
Units lost	0.00	0.00	0.00
Area / length lost	13.98	0.00	0.00
Units lost	11.04	0.00	0.00

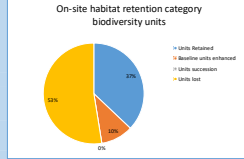
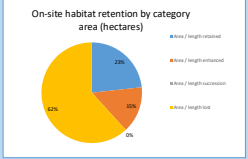
Lost by distinctiveness

Category	Area lost (hectares)	Area lost (%)
Very High	0	0
High	1.17	10
Medium	1.25	11
Low	6.54	79
Very Low	0	0



On-site Habitat group	Baseline		Post development on site		On-site Change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	On-site Unit change
Cropland	0.0	0.0	0.0	0.0	0.0	0.0
Grassland	0.9	2.7	2.8	14.0	1.9	11.3
Wetland and ditch	0.0	0.1	0.1	4.8	0.4	4.7
Rivers and lakes	1.1	2.3	0.0	10.1	-1.1	7.8
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0
Urban	21.7	17.0	4.0	21.7	-6.7	-29.7
Wetland	0.0	0.0	0.0	0.0	0.0	0.0
Woodland and forest	3.7	8.9	0.7	7.2	-2.9	-1.7
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0

Overall Change	
Area change	Unit change
0.0	0.0
0.0	0.0
1.9	11.3
0.4	4.7
-1.1	7.8
0.0	0.0
-6.7	-29.7
0.0	0.0
-2.9	-1.7
0.0	0.0
0.0	0.0
0.0	0.0
0.0	0.0



Off-site Habitat group	Baseline		Post development Off-site		Off-site Change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	Off-site Unit change
Cropland	0.0	0.0	0.0	0.0	0.0	0.0
Grassland	0.0	0.0	0.0	0.0	0.0	0.0
Wetland and ditch	0.0	0.0	0.0	0.0	0.0	0.0
Rivers and lakes	0.0	0.0	0.0	0.0	0.0	0.0
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0
Urban	0.0	0.0	0.0	0.0	0.0	0.0
Wetland	0.0	0.0	0.0	0.0	0.0	0.0
Woodland and forest	0.0	0.0	0.0	0.0	0.0	0.0
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0

Combined Habitat group	Baseline		Combined Post development		Combined change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	Proposed value
Cropland	0.0	0.0	0.0	0.0	0.0	0.0
Grassland	0.9	2.7	2.8	14.0	1.9	11.3
Wetland and ditch	0.0	0.1	0.1	4.8	0.4	4.7
Rivers and lakes	1.1	2.3	0.0	10.1	-1.1	7.8
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0
Urban	21.7	17.0	4.0	21.7	-6.7	-29.7
Wetland	0.0	0.0	0.0	0.0	0.0	0.0
Woodland and forest	3.7	8.9	0.7	7.2	-2.9	-1.7
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0

A-1 Site Habitat Baseline

Condense / Show Columns Condense / Show Rows
 Main Menu Instructions

Ref	Habitats and areas			Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance			Suggested action to address habitat losses	Ecological baseline Total habitat units	Retention category biodiversity value						Bespoke compensation agreed for unacceptable losses	Comments		
	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier			Area retained	Area enhanced	Area succession	Baseline units retained	Baseline units enhanced	Baseline units succession		Area lost	Units lost	Assessor comments
1	Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.85	Medium	4	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	3.40										
2	Woodland and forest	Woodland and forest - Other woodland; mixed	1.22	Medium	4	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	4.88										
3	Heathland and shrub	Heathland and shrub - Mixed scrub	0.03	Medium	4	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.12										
4	Woodland and forest	Woodland and forest - Wood-pasture and parkland	1.58	High	6	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required	9.48										
5	Grassland	Grassland - Other neutral grassland	0.46	Medium	4	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	1.84										
6	Grassland	Grassland - Modified grassland	0.43	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.86										
7	Lakes	Lakes - Ponds (Priority Habitat)	1.08	High	6	Moderate	2	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required	12.96										
8	Urban	Urban - Amenity grassland	12.45	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	24.90										
9	Urban	Urban - Introduced shrub	0.15	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.30										
10	Sparse vegetated land	Sparsely vegetated land - Ruderal/Ephemeral	0.01	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.02										
11	Urban	Urban - Vacant/derelect land/ bareground	0.13	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.26										
12																									
13																									
14																									
15																									
16		Total site area ha	18.99											Total Site baseline	59.02	4.28	2.75	0.00	21.86	6.12	0.00	11.36	31.04		

A-2 Site Habitat Creation

Condense / Show Columns Condense / Show Rows

Main Menu Instructions

Post development/ post intervention habitats																		
Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity			Strategic significance			Temporal multiplier		Difficulty multipliers		Habitat units delivered	Comments	
						Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier	Difficulty of creation category	Difficulty of creation multiplier		Assessor comments	Reviewer comments
Woodland and forest - Other woodland; broadleaved	2.18	Medium	4	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	32+	0.320	Medium	0.67	6.17		
Woodland and forest - Other woodland; mixed	0.23	Medium	4	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	32+	0.320	Medium	0.67	0.65		
Heathland and shrub - Mixed scrub	0.48	Medium	4	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	7	0.779	Low	1	4.94		
Woodland and forest - Wood-pasture and parkland	0.07	High	6	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	32+	0.320	Very High	0.1	0.04		
Grassland - Other neutral grassland	0.58	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0.586	Low	1	4.08		
Grassland - Other neutral grassland	0.63	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10	0.700	Low	1	3.53		
Lakes - Ponds (Priority Habitat)	0.2	High	6	Good	3	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10	0.700	Medium	0.67	1.69		
Urban - Amenity grassland	0.43	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	0.83		
Urban - Developed land; sealed surface	6.41	V.Low	0	N/A - Other	0	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	1.000	Low	1	0.00		
Urban - Artificial unvegetated, unsealed surface	0.15	V.Low	0	N/A - Other	0	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	1.000	Low	1	0.00		
Totals	11.36															21.93		

APPENDIX DW10

Headline Results

[Return to results menu](#)

On-site baseline	<i>Habitat units</i>	92.04
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	62.41
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	<i>Habitat units</i>	-29.63
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00

Total net % change

(including all on-site & off-site habitat creation + retained habitats)

Habitat units

-32.19%

Hedgerow units

0.00%

River units

0.00%

A-1 Site Habitat Baseline

Condense / Show Columns Condense / Show Rows
 Main Menu Instructions

Ref	Habitats and areas			Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance			Suggested action to address habitat losses	Ecological baseline Total habitat units
	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier		
1	Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.85	Medium	4	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	3.40
2	Woodland and forest	Woodland and forest - Other woodland; mixed	1.22	Medium	4	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	4.88
3	Heathland and shrub	Heathland and shrub - Mixed scrub	0.03	Medium	4	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.12
4	Woodland and forest	Woodland and forest - Wood-pasture and parkland	1.58	High	6	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required	9.48
5	Grassland	Grassland - Other neutral grassland	0.46	Medium	4	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	1.84
6	Grassland	Grassland - Modified grassland	0.43	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.86
7	Lakes	Lakes - Ponds (Priority Habitat)	1.08	High	6	Moderate	2	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required	12.96
8	Urban	Urban - Amenity grassland	4.06	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	8.12
9	Urban	Urban - Introduced shrub	0.15	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.30
10	Sparse vegetated land	Sparse vegetated land - Ruderal/Ephemeral	0.01	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.02
11	Urban	Urban - Vacant/derelict land/ bareground	0.13	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.26
12	Urban	Urban - Amenity grassland	12.45	Low	2	Moderate	2	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	49.80
13															
14															
15															
16															
17		Total site area ha	22.45											Total Site baseline	92.04

Retention category biodiversity value										Bespoke compensation agreed for unacceptable losses	Comments	
Area retained	Area enhanced	Area succession	Baseline units retained	Baseline units enhanced	Baseline units succession	Area lost	Units lost	Assessor comments	Reviewer comments			
0.32	0.04		1.28	0.16	0.00	0.49	1.96					
0.78	0.17		3.12	0.68	0.00	0.27	1.08					
			0.00	0.00	0.00	0.03	0.12					
0.55	0.05		3.30	0.30	0.00	0.98	5.88					
			0.00	0.00	0.00	0.46	1.84					
	0.01		0.00	0.02	0.00	0.42	0.84					
0.89			10.68	0.00	0.00	0.19	2.28					
0.87	1.24		1.74	2.48	0.00	1.95	3.90					
			0.00	0.00	0.00	0.15	0.30					
			0.00	0.00	0.00	0.01	0.02					
			0.00	0.00	0.00	0.13	0.26					
0.87	1.24		3.48	4.96	0.00	10.34	41.36					
4.28	2.75	0.00	23.60	8.60	0.00	15.42	59.84					

A-2 Site Habitat Creation

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Main Menu Instructions

Post development/ post intervention habitats																		
Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity			Strategic significance			Temporal multiplier		Difficulty multipliers		Habitat units delivered	Comments	
						Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier	Difficulty of creation category	Difficulty of creation multiplier		Assessor comments	Reviewer comments
Woodland and forest - Other woodland; broadleaved	2.18	Medium	4	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	32+	0.320	Medium	0.67	6.17		
Woodland and forest - Other woodland; mixed	0.23	Medium	4	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	32+	0.320	Medium	0.67	0.65		
Heathland and shrub - Mixed scrub	0.48	Medium	4	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	7	0.779	Low	1	4.94		
Woodland and forest - Wood-pasture and parkland	0.07	High	6	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	32+	0.320	Very High	0.1	0.04		
Grassland - Other neutral grassland	0.58	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0.586	Low	1	4.08		
Grassland - Other neutral grassland	0.63	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10	0.700	Low	1	3.53		
Lakes - Ponds (Priority Habitat)	0.2	High	6	Good	3	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10	0.700	Medium	0.67	1.69		
Urban - Amenity grassland	0.43	Low	2	Poor	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	0.83		
Urban - Developed land; sealed surface	6.41	V.Low	0	N/A - Other	0	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	1.000	Low	1	0.00		
Urban - Artificial unvegetated, unsealed surface	0.15	V.Low	0	N/A - Other	0	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	1.000	Low	1	0.00		
Totals	11.36															Total Units	21.93	

Check Areas- Area of development and habitat creation must match the area of habitats lost



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