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By email only

18th March 2021

Our ref: SW20/E1986/SW
Planning application ref: 20/00683/OUT
PINS ref: APP/B1605/W/20/3261154

Dear Mrs Walker,

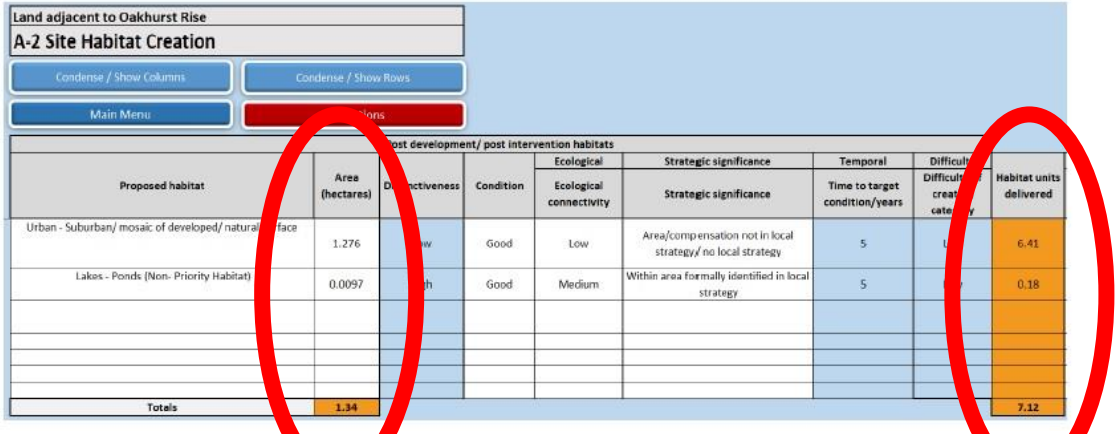
Land off Oakhurst Rise, Cheltenham – Review of Revised Biodiversity Metric

Following our recent discussions, I understand that proofs of evidence in respect of the planning appeal currently underway for the above site have now been exchanged and that within the proof of Mr Baxter a new landscape strategy has been submitted and he has also undertaken a new biodiversity metric assessment. Given the technical nature of the metric and with the backdrop of my submissions to the planning application in respect of the assessment of the development using the Metric 2.0, you have asked that I review Mr Baxter's revised metric assessment to identify if this may have an effect on your evidence to the inquiry. His revised input is provided as an appendix to his proof of evidence, at Appendix 5487/AB18, and is titled - Technical Note TN21: Updated Biodiversity Metric (February 2021).

Accuracy of data

It is disappointing that in reviewing the revised metric submitted by Aspect Ecology, it continues to fall to myself as the ecologist advising a local resident's group to identify errors in the data set, yet this is precisely what is once again required.

In the first instance, having reconstructed the metric using the recently submitted data set, I note that there is an error in the output for 'A-2 - site habitat creation'. The figures shown do not total correctly as highlighted below; the total area is some 0.057ha greater than it should be and the unit total gained is also 0.53 units larger. This mistake generates an error warning in my reconstructed metric, yet it appears to have been undetected by Aspect.



Land adjacent to Oakhurst Rise

A-2 Site Habitat Creation

Condense / Show Columns | Condense / Show Rows | Main Menu

Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Time to target condition/years	Difficulty creation category	Habitat units delivered
Urban - Suburban/ mosaic of developed/ natural surface	1.276	Low	Good	Low	Area/compensation not in local strategy/ no local strategy	5	L	6.41
Lakes - Ponds (Non- Priority Habitat)	0.0097	High	Good	Medium	Within area formally identified in local strategy	5	M	0.18
Totals	1.34							7.12

I have attempted to account for this missing 0.057ha of habitat creation and can only conclude that it would appear to relate to the area required for the creation of the proposed plot boundary hedgerows, which are some 509m in length and are likely to be c.1m in width. I have added this into the metric as habitat creation under 'Urban-woodland' in the absence of a hedgerow category, to ensure that the metric works correctly. Based on these corrected data set, the metric calculates an 11.06% BNG, some 1.05% lower than suggested in Mr Baxter's proof of evidence (see Appendix 1). The magnitude of this error may not of itself appear significant, but it highlights the continued lack of rigour that is being applied to the submissions made in support of planning applications for this site, and places the determining authority on unsafe ground, which is particularly unacceptable when such a highly contentious planning decision is being asked to be decided.

Whilst the relative importance of this particular error in the metric output could be debated, I turn now to a much more significant second error in the submitted metric. Mr Baxter proposes that the whole of the development parcel, which includes the hard and soft areas of the plots, together with the associated development infrastructure, be included in the metric under 'Urban – suburban/mosaic of developed/natural surface'. Such as approach ignores the importance of ensuring that the finer grain of the development is properly reflected in the metric. Furthermore, this category is assigned a condition assessment of 'good' in Mr Baxter's metric which compounds the inflated unit score achieved by areas that will actually have no material biodiversity value post-development. For example, the roads, driveways and buildings.

To properly reflect the actual result of the development I estimate that one third of development parcel area (c.0.44ha) would become a built linear feature such as the road and pathway infrastructure. A further third would be buildings, garages and driveways[1]. The final third is the private and public amenity grassland areas as shown on the landscape strategy.

The cumulative effect of correcting the above errors is that the metric submitted by Mr Baxter should show at best a -3.92% loss of biodiversity units on the site (see Appendix 2), not the 12.11% he purports (or indeed the 11.06% that should be the purported figure if his base measurements were correct). Once again, the submitted metric, intended and required to inform a sound planning decision, has been modified to show an inflated BNG, well beyond that which can conceivably be achieved on any common-sense ecological view. As it is, the determining authority can have no confidence that a net loss of biodiversity will be avoided if the proposed development is built out, even before one comes on to consider the further inflated claims discussed below.

Habitat creation

In addition to the factual inaccuracies and questionable assumptions in the baseline inputs outlined above it is also necessary to examine how the wider metric assessment submitted by Mr Baxter, has been skewed in favour of showing a positive outcome.

[1] The metric does not include a separate 'building' category and so these have been included under 'development; sealed surface' which has the same parameters.

Strategic significance

The approach taken by Mr Baxter in respect of strategic significance multipliers continues to be flawed. He states at 6.4 of Appendix 5487/AB18 –

"*6.4. By contrast, CKF has suggested that strategic multipliers should not be applied to these habitat types and they suggest that the User Guide is seeking to target areas where habitats are sited in preferred locations. We do not agree with this interpretation…"*

It is unarguable that the purpose of these multipliers is to give additional credit to the creation of habitats in *preferred locations.* This is stated quite clearly at 5.30 of the Metric 2.0 user guide[2] (extract also provided at Appendix 3) -

"*5.30. The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives.*" [underline added].

As stated in my letter submitted to Cheltenham District Council (CDC) in response to the planning application[3], Gloucestershire Wildlife Trust (GWT) have confirmed that the site "*lies within a gap in grassland ecological network connectivity*." As such, removal of the strategic significance multiplier for this habitat cannot be justified. Conversely, not only is the suggestion that the woodland and pond habitats on the site are in a strategic location unevidenced in Mr Baxter's proof, he seeks to rely on references to the Gloucestershire Biodiversity Action Plan (BAP) which has for over a decade now been superseded and formally replaced by the Gloucestershire Local Nature Partnership in order to move towards a more spatially-based biodiversity delivery framework. Their website[4] states -

"The Gloucestershire BAP can be reviewed below, dated 2000, but please note that this is no longer a live and updated document.

From 2007, there was a review of Gloucestershire's local BAP, which moved us towards a more spatially-based biodiversity delivery framework. This resulted in the compilation of the Gloucestershire Nature Map in 2008, which was updated in late 2011.

By 2012, Local Nature Partnerships were announced and this biodiversity framework was subsumed into what is now the Gloucestershire Local Nature Partnership."

Once again, in his efforts to search down the back of the sofa for anything that can be claimed as biodiversity gain, Mr Baxter has chosen to base his metric assessment on selective (and simply erroneous) interpretations of extant guidance and outdated sources. At the same time, he also seeks to ignore current and *site specific* guidance from the GWT that shows that multipliers should be applied to the grassland habitats.

[2] Ian Crosher A, Susannah Gold B, Max Heaver D, Matt Heydon A, Lauren Moore D, Stephen Panks A, Sarah Scott C, Dave Stone A & Nick White A. 2019. *The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019)*. Natural England

[3] Bioscan ref: SW20/E1986/EPL2, dated 11th September 2020. Included at Appendix 4 for east of reference.

[4] https://www.gloucestershirenature.org.uk/biodiversity-action-plan-bap

Habitat succession

I do not agree with Mr Baxter's proposed use of habitat succession in the metric in respect of planting of a woodland belt to the east of the development. Within a site designated a Local Wildlife Site and therefore of county value in ecological terms, it does not follow sound ecological principles to propose to deliver biodiversity gains at the expense of habitat that (in part) underpins that very designation. Such a suggestion is nothing other than 'robbing Peter to pay Paul.' It is, though, unlikely that agreement between myself and Mr Baxter could be reached on this point and so in lieu of this, it is helpful to assess whether the replacement woodland habitat would actually deliver the biodiversity gain required. In this instance, it cannot.

Woodland habitats by their very nature are a climax community requiring a significant period of time to develop and reach maturity. It is only at this point that the full biodiversity benefit attributed to them would actually be realised. This fact is explicitly recognised in the metric through the addition of a '32+' years 'Time to Target' condition multiplier for the proposed woodland, which Mr Baxter suggests would be of 'medium' distinctiveness and reach 'good' condition. The thirty-two year figure in the metric is the *minimum* time required; the actual time required is left open ended in the metric as it depends on site specific factors and other considerations. At the appeal site, a significant factor in this time period is the fact that the site has a clay underlying geology. Clay substrates are highly impermeable to water and so impede tree establishment due to the difficultly in creating the deep and expansive root system they require. This can be seen from historic maps[5] which show the presence of the two existing hedgerows (H1 and H2) at least as far back as 1887 (see map below), and the age of their component trees provides evidence of greater antiquity. The fallacy in Mr Baxter's approach is illuminated by the fact that he suggests these long-established features are only in 'moderate' condition at present, while he claims the new woodland to be created by succession will be in 'good' condition after a mere 32 years.

Summary cumulative effect

Overall, and having reviewed the metric submitted by Mr Baxter, it is clear that the following errors, questionable assumptions and inflated or exaggerated claims require to be taken into account in considering the weight to be attached to it. In particular:

i) The area total for habitat creation is inaccurate;
ii) Inflated value has been attributed to the developed areas rather than breaking these down into the correct, lower scoring, components.
iii) The application of strategic multipliers is inconsistent and biased towards outdated reference sources whilst ignoring relevant up to date ones.
iv) There is a reliance on woodland creation via 'habitat succession' which will be achieved at the expense of other habitats on the site and which assumes very optimistic outcomes.

I have calculated that correction of first two errors results in a revised and, in my view, more accurate metric output showing a net loss of -3.92% biodiversity units. If the strategic multipliers and habitat succession parameters are also applied correctly, I calculate that the result is that **Mr Baxter's metric should return a score of -6.18 biodiversity units equivalent to a clear and significant net loss of 17.79% on the site** (see Appendix 5).

[5] www.old-maps.co.uk, accessed 17th March 2021

Hedgerows

I am pleased to note that Mr Baxter has conceded that Hedgerows 3 to 5 should not have been included in the previous metric and that these have removed from his latest assessment. He has not, however, adequately addressed the wider issue of hedgerow creation. Mr Baxter has included a revised landscape strategy in his proof of evidence on the basis that "*As can be seen on the plan at Annex TN21/2, this labelling error has been corrected with `Proposed Hedges and Hedgerows` associated with the darker green planting."* However, there continues to a complete absence of transparency as to where native/species rich hedgerows will be planted and therefore an absence of confidence as to which can justifiably be included in the metric, let alone whether they can justifiably be afforded the distinctiveness and condition attributes that they have been by Mr Baxter.

Whilst an attempt has been made to differentiate between 'hedges' and 'hedgerow' the revised landscape strategy[6] clearly states that hedges are – "*Proposed Hedges: Single species structural adjoining residential properties*." Without exception, all of the hedgerows shown on Mr Baxter's post-development habitat map[7] are located adjoining property boundaries. The species list for these hedgerows includes non-native garden privet *Ligustrum ovafolium*, which is from east Asia. No attempt has been made to define which species will be used where and there is nothing to confirm that this species will not be the primary hedge plant. Furthermore, there would be no impediment to future owners of these properties removing these at any point nor them failing to ever reach the 'moderate' condition indicated to be the basis for Mr Baxter's metric assessment due to inappropriate management. As such, there is no basis on which to include these hedgerows in the metric and the suggested increase of 868.88% in hedgerows shown on Mr Baxter's metric, while appearing impressive, is frankly disingenuous and should be disregarded without the full detail purported to support it being provided.

Conclusion

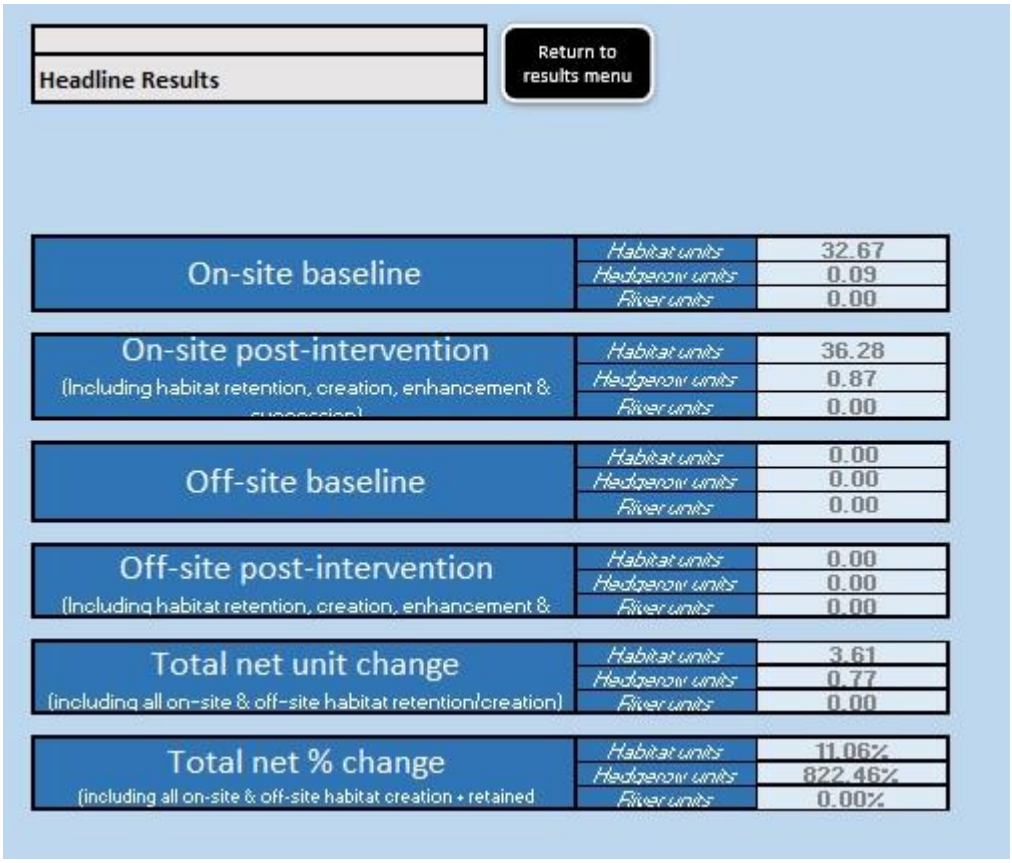
I continue to be deeply concerned about the absence of professional standards and scientific rigour being applied to the ecological information submitted as part of successive planning applications for this site, and the use of smoke and mirrors in the engagement of Metric 2.0. It is also deeply concerning that it falls to a local residents' group to make representations to a planning appeal that bring to light how the Biodiversity metric 2.0 can be manipulated to show a factually incorrect outcome that does not reflect the real-world outcome of the proposed development. Let me be clear, there can be no doubt that the proposed development being considered at the appeal will not only fall short of delivering neutrality, but will actually result in a significant net loss of biodiversity.

Regards
FOR AND ON BEHALF OF BIOSCAN (UK) LTD

Samuel Watson MCIEEM
Principal Ecologist

[6] Appendix 5487/AB18 of Mr Baxter's proof of evidence, Annex TN21/2: Landscape Strategy, Rev H
[7] See Annex TN21/5, of Appendix 5487/AB18 to Mr Baxter's proof.

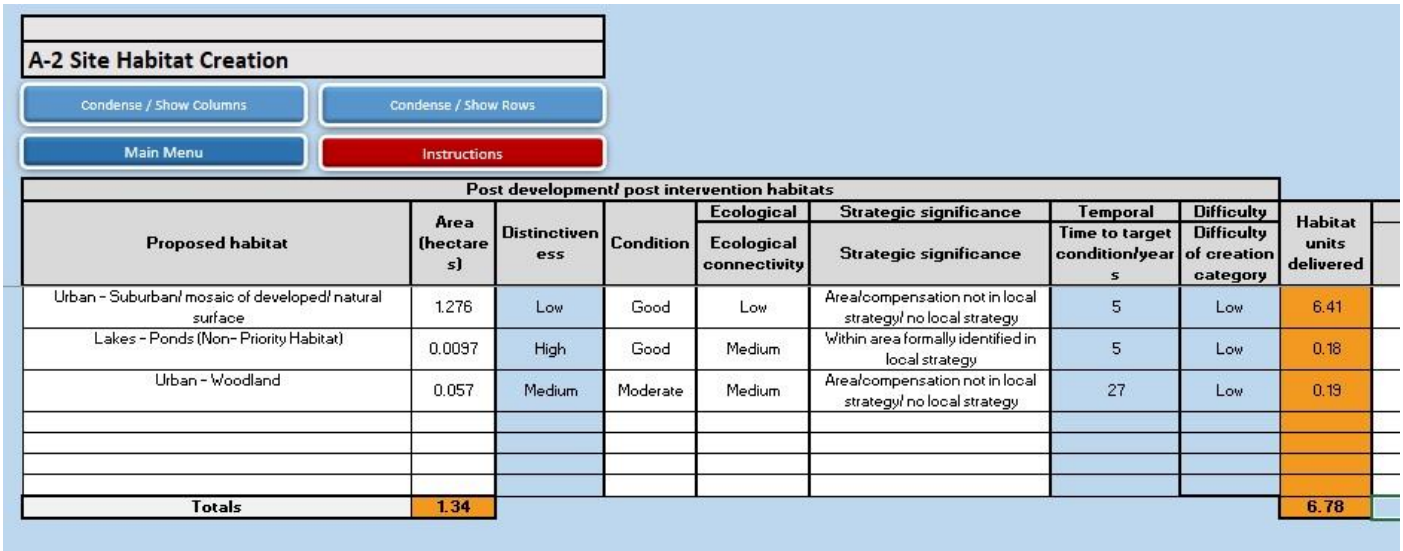
SW20/E1986/SW - Appendix 1



Headline Results

Return to results menu

On-site baseline	Habitat units	32.67
	Hedgerow units	0.09
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement &	Habitat units	36.28
	Hedgerow units	0.87
	River units	0.00
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement &	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	Habitat units	3.61
	Hedgerow units	0.77
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained	Habitat units	11.06%
	Hedgerow units	822.46%
	River units	0.00%

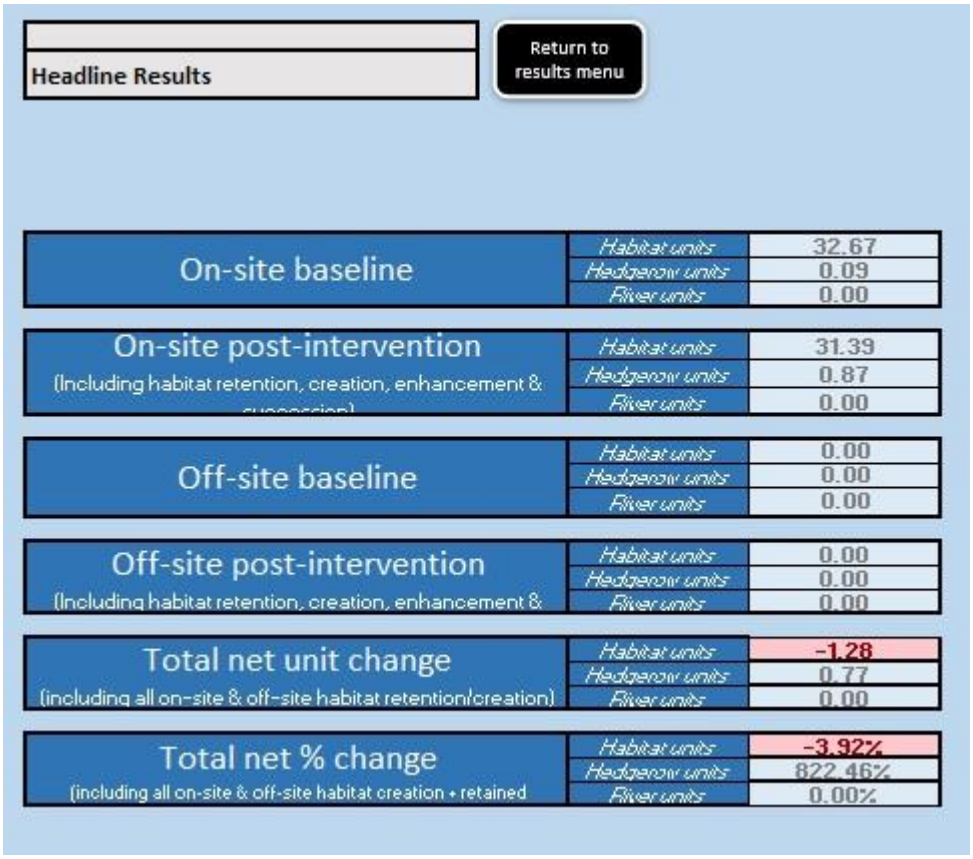


A-2 Site Habitat Creation

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

Post development/ post intervention habitats								
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological	Strategic significance	Temporal	Difficulty	Habitat units delivered
				Ecological connectivity	Strategic significance	Time to target condition/years	Difficulty of creation category	
Urban - Suburban/ mosaic of developed/ natural surface	1.276	Low	Good	Low	Area/compensation not in local strategy/ no local strategy	5	Low	6.41
Lakes - Ponds (Non- Priority Habitat)	0.0097	High	Good	Medium	Within area formally identified in local strategy	5	Low	0.18
Urban - Woodland	0.057	Medium	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	27	Low	0.19
Totals	1.34							6.78

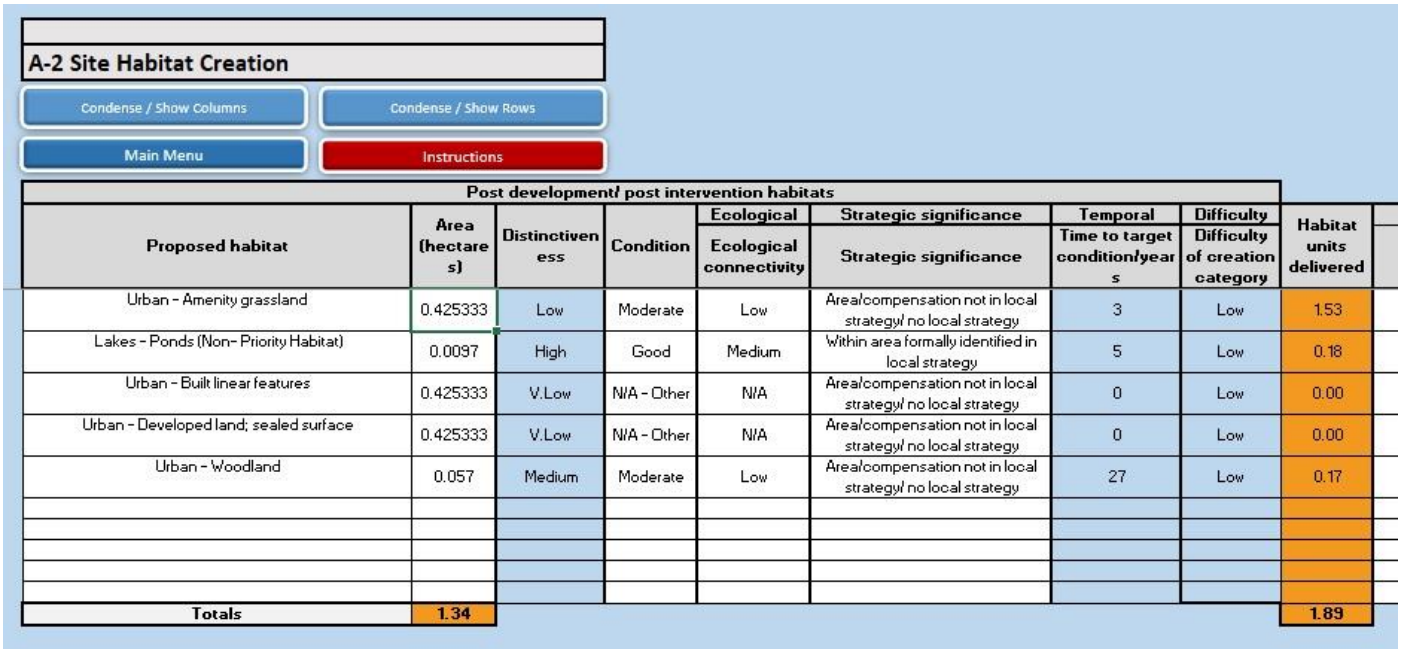
SW20/E1986/SW - Appendix 2



Headline Results

Return to results menu

On-site baseline	Habitat units	32.67
	Hedgerow units	0.09
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement &	Habitat units	31.39
	Hedgerow units	0.87
	River units	0.00
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement &	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	Habitat units	-1.28
	Hedgerow units	0.77
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained	Habitat units	-3.92%
	Hedgerow units	822.46%
	River units	0.00%



A-2 Site Habitat Creation

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

Post development/ post intervention habitats								
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological	Strategic significance	Temporal	Difficulty	Habitat units delivered
				Ecological connectivity	Strategic significance	Time to target condition/years	Difficulty of creation category	
Urban - Amenity grassland	0.425333	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	3	Low	1.53
Lakes - Ponds (Non- Priority Habitat)	0.0097	High	Good	Medium	Within area formally identified in local strategy	5	Low	0.18
Urban - Built linear features	0.425333	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local strategy	0	Low	0.00
Urban - Developed land; sealed surface	0.425333	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local strategy	0	Low	0.00
Urban - Woodland	0.057	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	27	Low	0.17
Totals	1.34							1.89

SW20/E1986/SW - Appendix 3

Natural England Joint Publication JP029

The Biodiversity Metric 2.0

auditing and accounting for biodiversity

USER GUIDE

Beta Version

First published 29th July 2019

www.gov.uk/natural-england

Further information

Natural England evidence can be downloaded from our **Access to Evidence Catalogue**. For more information about Natural England and our work see **Gov.UK**. For any queries contact the Natural England Enquiry Service on 0300 060 3900 or e-mail **enquiries@naturalengland.org.uk** .

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Citation

IAN CROSHER [A], SUSANNAH GOLD [B], MAX HEAVER [D], MATT HEYDON [A], LAUREN MOORE [D], STEPHEN PANKS [A], SARAH SCOTT [C], DAVE STONE [A] & NICK WHITE [A]. 2019. The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019). Natural England

A – Natural England, B – Imperial College, University of London, C – Environment Agency, D – Department for Environment, Food and Rural Affairs

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Our thanks also to Sam Arthur (Associate Ecologist and Biodiversity Net Gain Specialist at FPCR Environment and Design Ltd) for his significant input into the development of the Calculation Tool.

Finally, our thanks to all the various workshop attendees and the people who took the time to provide us with feedback and advice along the way.

Image credits

Title page: Natural England (Nick White)
Box 2-1: Natural England (Matt Heydon, Peter Roworth & Julian Dowse)
Case Study 7-1: Cartographer Studios Ltd. (Lucy Shuker) & Environment Agency (Neale Hider).
Case Study 7-2: Environment Agency (Dave Webb)

The spatial component

5.29. In biodiversity metric 2.0 there are two core spatial components. First, the **strategic significance** of a place for biodiversity, its geography. Second, ecological **connectivity**, the relationship of a habitat in a defined place to its immediate surroundings in respect of biological and ecosystem flows. While these concepts are not completely independent of each other they do represent different qualities of a habitat.

Strategic significance

5.30. The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives. Ideally these aspirations will have been summarised in a local strategic planning document which articulates where biodiversity is of high priority and the places where it is less so. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such Nature Recovery Areas, local biodiversity plans, National Character Area[14] objectives and green infrastructure strategies. Table 5-5 shows the multiplier scores for both impact and compensation sites based on its place in a strategic plan.

5.31. In the absence of a locally or nationally relevant strategic documentation indicating areas of significance for biodiversity, the value of **1** should be used in pre and post development calculations. Use of a score of 1 does not penalise a proposal.

TABLE 5-5: Strategic significance categories and scores

Strategic Significance categories			
Category	**Score**	**Point applied to calculation**	
		Pre-impact	**Post-impact**
High strategic significance High potential & within area formally identified in local policy	1.15	**Yes**	**Yes**
Medium strategic significance Good potential but not in area defined in local policy	1.1	**Yes**	**Yes**
Low Strategic Significance Low potential and not in area defined in local policy	1	**Yes**	**Yes**

Connectivity

5.32. The focus of connectivity in biodiversity metric 2.0 is the relationship of a particular habitat patch to other surrounding **similar** or **related** semi-natural habitats. These help facilitate flows of species and ecosystem services increases habitat resilience.

[14] For more details of National Character Areas see: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles

SW20/E1986/SW - Appendix 4

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11th September 2020
Our ref: SW20/E1986/EPL2
Planning application ref: 20/00683/OUT

Dear Ms Pickernell,

Land off Oakhurst Rise, Cheltenham – Addendum Ecological Response

Following the submission of my previous report in respect of the above site and planning application (ref: SW20/E1986/EOL1, dated 29th July 2020), I am aware that two further submissions have been made by the applicants ecologist's dated 10th and 17th August 2020, and an online comment has also been submitted by the county ecologist, Gary Kennison, dated 14th August 2020. I have also been made aware of a more recent submission by the Gloucestershire Wildlife Trust (GWT), dated 1st September.

I have been instructed by Charlton King Friends (CKF) to comment on these new submissions, which I do below.

Metric-based assessment of biodiversity loss

Assessment of biodiversity loss using Defra Metric 2.0

I thank the applicant's ecologists Aspect for providing accurate measurements for each habitat type on the site, which CKF were, of course, unable to obtain from the submitted drawings due to their PDF format, although it is noted that the estimates were nevertheless within an acceptable error margin of the actual totals. I see no reason to disagree with the figures that have now been provided, although I note there is a discrepancy between the site area on the application form of 4.29ha and the total reached by Aspect of 4.12ha.

In the light of these area measurements, I have updated the Metric 2.0 assessment and discuss the results below. Several important points of clarification need to be made about the input parameters first, however.

i) I note the comment by Aspect Ecology that in Bioscan's Metric 2.0 assessment "*It is assumed that all habitats will be lost and re-created*". I have not been party to discussions regarding the development of the landscape strategy or the proposals for enhancement. In keeping with parties that are outside of the application team, I have had to rely upon the information submitted as part of the application, in this instance the ecological mitigation and enhancements drawing (ref: 5487/EC04) included in the submitted ecological appraisal report (ref: 5487 EcoAp2020 vf /DW). In respect of the two largest blocks of grassland on the site, this drawing

states "*Creation of new grassland habitats"* [underline added]. I concluded (not entirely surprisingly) from this that the existing grassland would be removed and replaced. I thank Aspect Ecology for clarifying the position and note that any suggestion therein that the development would deliver 'new' grassland, cannot, therefore, be correct and any apparent 'benefit' of grassland creation from the scheme should be discounted in the planning balance as a result.

However, in light of the need to create an artificial badger sett in the grassland in the southwest corner of the site, I do question whether in this area any retention of extant resource would be practically achievable, given the ground disturbance required. This means that the only block of grassland that could in reality be retained (rather than recreated) is that on the east side of the development. The result of this is that approximately a quarter (1.06ha) of the existing grassland would actually be retained under the proposals, with some 0.85ha of grassland removed and recreated. I have factored this correction into the revised metric assessment detailed below.

ii) With regard to the suggested re-categorisation of the habitats in the baseline metric assessment, there is little need to debate this point in terms of metric outputs as there is no change in the distinctiveness score between 'other mixed woodland' (Bioscan categorisation) and 'scrub' (Aspect categorisation). In other words, the proposed re-categorisation results in no (zero) change to the assessed unit score. I am content to use either category, noting at the same time that the description in the Ecological Appraisal report[1] refers to scattered scrub (together with 'scrub') as being 'bramble'. The proposed re-categorisation therefore fails to reflect the fact that this area of 'scattered scrub' is in fact a small copse of trees (see Photo 1) and I maintain that 'other mixed woodland' would therefore be more appropriate.

In the absence of an accurate description of this habitat in the ecological appraisal, I have based my assessment of the parameter 'condition' on my own visits to the site. It is clear that the condition of this habitat is being hampered by the extensive badger activity in this area which is restricting the development of the ground flora. As such, based on the combination of these two factors, i.e. the poor ground flora but presence of mature trees, I consider a condition assessment of 'moderate' to be justified.

Even if the 'condition' of this habitat in the Metric is reduced to 'poor' (as Aspect suggest), the result is to only reduce the biodiversity unit value of this area from 0.64 to 0.32 a change of 0.32 units. The need to argue for such a small change is a symptom of the desire by Aspect to achieve every possible fraction of a unit out of disputed tweaks to the input parameters to engineer an output figure that approaches the threshold of acceptability in policy terms. This itself reflects that this is a development proposal that is innately damaging to the on-site biodiversity resource and that inadequate compensation is proposed for such damage. Even if the suggested tweaks are accepted, they have the result of no more than scraping the site's performance over the 'zero' line: the metric calculation Aspect have submitted shows an overall 0.48 unit increase on the site. However the clear direction of travel of national and local planning policy is towards biodiversity net gain being measured as a policy compliant material consideration only where a 10% net increase is demonstrated – indeed this is set to become a national mandatory requirement in the Environment Bill and, pre-empting this, has already been adopted by many

[1] Aspect Ecology ref: 5487 EcoAp2020 vf /DW, dated April 2020

local authorities[2]. At its highest, Aspect Ecology's own assessment shows that the proposed development falls far-short of this target and in fact delivers no meaningful net gain[3].

iii) There has been no error in the assessment by Bioscan of the condition of the hedgerows H1 and H2 – both are assigned a value of 'moderate' in the pre-development (0.58ha) assessment and 'good' in the post-development (0.35ha) assessment.

iv) The inclusion by Aspect of hedgerows H3 to H6 as 'Native hedgerow' in the metric is patently incorrect and should be amended. These are ornamental hedgerows which have 0 (zero) biodiversity units. Inclusion of these as native hedgerows introduces a 0.338 unit bias that should be discounted. Correcting the overall output for this further exposes the claim of net gain as a fallacy.

v) There is no native hedgerow planting proposed by the landscape strategy or shown on the ecological enhancement drawing, and thus the inclusion of 0.461km of native hedgerow creation in the Metric should be removed.

A further element of the Metric assessment undertaken by Aspect that requires more detailed scrutiny is the justification for their application of strategic multipliers.

Strategic multipliers

In their assessment, Aspect Ecology have assigned some habitats a 'strategic location' multiplier, the suggestion being, it is assumed, that these habitats are located in an area that has been formally identified as being strategically important for that habitat. The two 'woodland' habitats (i.e. hedgerows H1 and H2), are noted to be assigned the 'within area formally identified in local strategy' assessment. The suggested rationale for this is outlined at 2.8 of Aspects submission[4], which states –

"*Hedgerows H1 and H2 are considered to qualify as Priority Habitat and the local BAP, as such these habitats are considered to be within an area formally identified in local strategy such that they are of high strategic significance."*

This appears to be a wilful misconception of the function and purpose of strategic multipliers within the Defra metric. The suggestion being made is that simply because the hedgerows meet the criterion for status as a national priority habitat that they are automatically strategically located. A priority hedgerow is a hedgerow that contains 80% or greater native species, a criterion met by most hedgerows in Britain. Conversely 'strategically located' is a function of the location of the hedgerow, for example as part of a wider network or connecting two designated sites. It is entirely possible, as is the case here, for a hedgerow to be a priority habitat but outside of a strategic location, or indeed in an ecologically isolated setting.

[2] See for example https://www.cherwell.gov.uk/news/article/624/council-ramps-up-biodiversity-target

[3] This is also demonstrably below the 10% currently required by several planning authorities and which is the amount likely to be required under the upcoming Environment Bill.

[4] Aspect Ecology ref: 1005487/012.let.CBC.ep, dated 10th August 2020. Technical Briefing Note TN10, dated 7th August 2020.

If additional evidence of this was required, the Metric 2.0 user guide[5], published by Natural England (extract included at Appendix 1) states -

"5.30. The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives…Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such Nature Recovery Areas, local biodiversity plans, National Character Area[14] objectives and green infrastructure strategies".

The guide goes on to state –

*"In the absence of a locally or nationally relevant strategic documentation indicating areas of significance for biodiversity, the value of **1** should be used in pre and post development calculations".*

Aspect provide no evidence for the site being within an area formally identified as strategically important for hedgerows or woodland and a score of 1 (i.e. no multiplier) should therefore have been applied.

There is similarly no evidence provided by Aspect for the existing or proposed ponds being located within a strategically significant location.

Conversely, the comments by the Gloucestershire Wildlife Trust (GWT) (see Appendix 2) confirm that the grassland is in fact strategically located. GWT state "*The site lies within a gap in grassland ecological network connectivity*". Is it therefore appropriate to assign to the neutral grassland on site a strategic significance of *at least* 1.1 (i.e. location ecologically desirable but not in local strategy).

Metric outcome

Having corrected the above errors, the metric assessment undertaken by Aspect should show a 4.21 loss of biodiversity units, equivalent to a 11.98% reduction (output included at Appendix 3). This is patently in conflict with national and local policy on the avoidance of net less of biodiversity.

<u>Published metric assessment</u>

It is noted that both Aspect Ecology and the County Ecologist raise a query as to the benefit of the metric assessment because it is in the process of beta testing. This fact is highlighted in my original submission[6] and is not disputed. It is though noted in Aspects submission of 10th August[7] at 1.3 it states "*It is considered that the most appropriate metric to use for the site is the Defra Biodiversity Metric 2.0 Calculation Tool*". Any suggestion then that this metric is not a recognised and acceptable assessment tool is incorrect. The Defra 2.0 metric is widely and increasingly used to guide planning decisions throughout England and to assess the performance of proposals against the framework of national and local policies that seek to avoid net biodiversity loss and deliver net gain, and is on course to be mandated for such use upon the passing of the Environment Bill into law.

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5 Ian Crosher, Susannah Gold, Max Heaver, Matt Heydon, Lauren Moore, Stephen Panks, Sarah Scott, Dave Stone & Nick White. 2019. *The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide* (Beta Version, July 2019). Natural England

6 Bioscan letter ref: SW20/E1986/EPL1, dated 20th July 2020

7 Aspect Ecology ref: 1005487/012.let.CBC.ep, dated 10th August 2020. Technical Briefing Note TN10, dated 7th August 2020

Neither Aspect nor the County Ecologist have evidenced their assertion that use of the Defra 2.0 metric might give rise to error. One means of testing this might be through the application of an alternative published metric, such as those that preceded the general and widespread adoption of the more recent Defra 2.0 model. For the avoidance of doubt on this point, Bioscan have also, therefore, undertaken this exercise utilising the metric published by Warwickshire County Council[8] and which was employed as part of the 2019 appeal evidence.

The output from this exercise is attached at Appendix 4 and this shows a 7.33 loss of biodiversity, equivalent to -22.9%. This does not suggest an inconsistent result would be obtained by any other metric and again underlines that the proposals are patently in conflict with national and local policy on the avoidance of net less of biodiversity.

Conclusion

Having applied two established metrics to the proposed development, one of which is planned by Government to form the official and mandated tool for measuring biodiversity net gain in future planning decisions, it is clear that, by either measure, significant and demonstrable net loss of biodiversity would occur on this site. Aspect seek to rebut such conclusions by little more than bland repetition of a wholly subjective and unevidenced position shown to be untenable on the facts. Their case is not to engage with the facts but to sow uncertainty by advising that allowances be made for differences in subjective expert opinion and 'gut feeling' and seeking to discredit the application of what are now well-established quantitative methods.

There are of course cases where subjective opinion and quantitative metric outputs will be at odds with each other, and Bioscan are in the vanguard of advocating that care should be used when applying metric-based systems. In this case, however, the veracity of Aspect's competing assessment has to be viewed in the context of the many errors and inconsistencies that have been exposed in their assessments since the commencement of the planning debates over this site, including before the current application. I can confirm that the metric outputs discussed above align with the expert professional subjective opinion of not just myself, but of other highly experienced ecologists within Bioscan, and those views have consistently been found to be on the right side of the facts. Aspect's efforts to disregard any assessment technique that does not give them the answer they seek falls short of the requirements for rigorous and robust assessment of the impact of development proposals on biodiversity - requirements that are not only required by industry best practice in general but that form the thrust of national planning policy demands. Any suggestion that application of established metrics is not valid for the purposes of assessment of compliance with biodiversity net gain policies runs flat contrary to the direction of travel of government and local planning policy and in that context alone should be rejected if a legally safe planning decision is to be made.

KWS assessment

I have reviewed the submission by Aspect Ecology (dated 17th August 2020) in which they attempt to critique the basis on which the site has been put forward for designation as a Key Wildlife Site (now called Local

[8] https://www.warwickshire.gov.uk/biodiversityoffsetting

Wildlife Sites LWS). I am also now in receipt of the submission from GWT dated 1st September 2020 which confirms the site was formally designated a LWS at a meeting of the selection panel on 1st September 2020. There can be no further question that the site does meet the criteria for this status, and the attribution of LWS status also puts beyond any doubt that Aspect's assertion that the grassland is of no more than 'site' value is wrong.

The designation of the site as a LWS is welcome confirmation by an independent panel of third parties of what the facts on the ground have consistently pointed towards throughout my involvement in this site, and brings into play an additional raft of policy considerations that are failed to be met by the current proposals. In the event that Aspect continue to dispute the award of LWS status, I make the following points on their claims that the appropriate criteria were exceeded:

Minimum species threshold

To meet one of the criteria for KWS designation, the grassland needs to contain at least 20 species from those listed in the KWS handbook as being representative of semi-natural grassland. To date 22 species have been recorded. In their submission of 17th August 2020, Aspect attempt to discount the inclusion of four of these species in their letter to Dr Juliet Hynes; bluebell, barren strawberry, primrose and common dog violet. The basis for this is that, in their option, these are "*likely closely associated with the hedgerows and marginal woody vegetation…Accordingly, these should be discounted from the list such that number of relevant KWS grassland species*". Such a statement is erroneous, as Aspect would know if they had spent their time onsite analysing the grasslands in the correct manner, and the very basis for it flawed.

In the first instance, the KWS handbook, published by the GWT, specifically includes these four species in the list of those representative of a semi-natural grassland.

Secondly, and in the event further evidence of the grassland (as well as woodland) affiliation of these species was needed, I need do no more than pick one of a number of sources that confirm this association. The Natural England (formerly English Nature) research report published on the assessment of the condition of lowland grassland Sites of Special Scientific Interest[9] also lists all but barren strawberry as being indicators of higher quality mesotrophic grassland (extract provided at Appendix 5).

There can be no argument that these species can and should be included in the list of indicator species that confirm that the site meets, indeed, exceeds the threshold for KWS-level interest. Any attempt to discount them artificially and erroneously skews the assessment. The bald fact is that Aspect failed to record these species yet now attempt to present a case for them to somehow be set aside as not valid as grassland species. This cherry picking of the facts and data is indefensible and should be rejected.

Other matters

In addition to several other factual inaccuracies in their correspondence to the GWT regarding the LWS assessment, Aspect also assert that "*there is no realistic mechanism*", to secure the future and management of the site other than through development. I do not agree with this position. Aspect have not identified any

[9] Robertson, H & Jefferson, R (2000) *Monitoring the condition of lowland grassland SSSIs* England Nature Research Reports No 315 Part 2.

credible risk to the continued management of the grassland in the absence of development. The land has been in its current form since the early 1800s and there is no record of it having ever been subject to agricultural improvement or chemical treatment. LiDAR imagery also shows relic ridge and furrow through the meadow supporting the case that it has also never been mechanically cultivated. Moreover, and most significantly of all, CKF are fully committed to this site, seeking to secure it as a resource for residents. Crucially, they have ample capability to undertake any necessary targeted management.

Comments by Gary Kennison

Much of the content of the correspondence submitted by the county ecology officer, Gary Kennison, takes a lead from the reports submitted by Aspect Ecology and can therefore be viewed in tandem with the responses above. It is, though, unclear why Mr Kennison, even in his most recent submission disagrees with GWT in respect of the site meeting the criteria for designation as a KWS. He appears to have decided this from a single site visit of unknown duration and thoroughness at a somewhat less than optimal time of year (August). This stands against the clear case on the facts, as confirmed by GWT and their decision to formally designate the site, that the site has significant ecological value and that the impact of the development should be measured against this.

Conclusion

Throughout this and previous applications, Bioscan has acted on behalf of CKF to ensure that the ecological interest of the site is properly and accurately recorded. The process has consistently exposed factual errors and inaccuracies in the work undertaken by the applicant's ecologists, Aspect Ecology. The fund of knowledge now collected by Bioscan (and which ought to have been properly documented by Aspect) has been sufficient to lead to the formal designation of the site as a Local Wildlife Site. Yet, Aspect Ecology seek to undermine this fact by discounting relevant facts on the basis of flawed assumptions.

What is placed beyond dispute by the cumulative evidence is that the current proposal would result in the significant and demonstrable net loss of biodiversity on the site. It would accordingly fail the relevant tests of local and national planning policy and should be rejected.

Regards
FOR AND ON BEHALF OF BIOSCAN (UK) LTD

Samuel Watson MCIEEM
Principal Ecologist

Photo 1

Appendix 1

Natural England Joint Publication JP029

The Biodiversity Metric 2.0

auditing and accounting for biodiversity

USER GUIDE

Beta Version

First published 29th July 2019

www.gov.uk/natural-england

The spatial component

5.29. In biodiversity metric 2.0 there are two core spatial components. First, the **strategic significance** of a place for biodiversity, its geography. Second, ecological **connectivity**, the relationship of a habitat in a defined place to its immediate surroundings in respect of biological and ecosystem flows. While these concepts are not completely independent of each other they do represent different qualities of a habitat.

Strategic significance

5.30. The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives. Ideally these aspirations will have been summarised in a local strategic planning document which articulates where biodiversity is of high priority and the places where it is less so. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such Nature Recovery Areas, local biodiversity plans, National Character Area[14] objectives and green infrastructure strategies. Table 5-5 shows the multiplier scores for both impact and compensation sites based on its place in a strategic plan.

5.31. In the absence of a locally or nationally relevant strategic documentation indicating areas of significance for biodiversity, the value of **1** should be used in pre and post development calculations. Use of a score of 1 does not penalise a proposal.

TABLE 5-5: Strategic significance categories and scores

Strategic Significance categories			
Category	**Score**	**Point applied to calculation**	
		Pre-impact	**Post-impact**
High strategic significance High potential & within area formally identified in local policy	1.15	**Yes**	**Yes**
Medium strategic significance Good potential but not in area defined in local policy	1.1	**Yes**	**Yes**
Low Strategic Significance Low potential and not in area defined in local policy	1	**Yes**	**Yes**

Connectivity

5.32. The focus of connectivity in biodiversity metric 2.0 is the relationship of a particular habitat patch to other surrounding **similar** or **related** semi-natural habitats. These help facilitate flows of species and ecosystem services increases habitat resilience.

[14] For more details of National Character Areas see: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles

Appendix 2

Gloucestershire Wildlife Trust
Robinswood Hill Country Park
Reservoir Road
Gloucester
GL4 6SX

info@gloucestershirewildlifetrust.co.uk
www.gloucestershirewildlifetrust.co.uk
Telephone: 01452 383333

Registered charity number: 232580
Registered in England number: 708575

By email to:
Emma Pickernell, Cheltenham BC

Gary Kennison, Gloucestershire CC

Alistair Baxter, Aspect Ecology

07 Aug 2020

Proposed Local Wildlife Site at St Edwards Prep School, Charlton Kings (Site under planning application 20/00683/OUT)

Dear Sir/Madam

Regarding the proposal for Local Wildlife Site status on land at St Edwards Prep School, Charlton Kings (Site under planning application 20/00683/OUT).

In order to achieve the goal of a balanced and useful Local Sites system, the Gloucestershire Wildlife Sites Partnership uses minimum habitat and species thresholds that fit the unique biodiversity of the county into a wider context, and a set of general criteria based on the DEFRA-recommended version of the Ratcliffe criteria.

The proposed site does meet the criteria set out in the Key Wildlife Sites (now referred to as Local Wildlife Sites [LWS]) handbook (2015), being greater than 0.5 ha (site is approximately 3.5 ha), confirmed as MG1 grassland habitat by NVC survey carried out by Aspect Ecology in July 2019 and Aug 2020 and by Bioscan in July 2019 and recording, through combination of all of the above surveys 22 species from the grassland list. However, MG1 can cover a wide range of grassland condition, from very high grass cover and few herbs through to much lower grass density and significant herb cover. As it stands at the moment, the proposed site is of borderline LWS quality and the LWS process requires it to be examined by the LWS selection panel to determine whether it should be adopted as a LWS or not. The panel may be unable to convene before the planning application goes to committee.

The site lies within a gap in grassland ecological network connectivity. Enhancement to grassland habitat within this area would benefit the ecological network and with appropriate management the quality of the grassland on this site could be enhanced within a relatively short time. Irrespective of the LWS selection panel decision, it is Gloucestershire Wildlife Trusts view that any development on this site should provide a strong commitment to biodiversity net gain and a strong management and maintenance plan for both the grassland and veteran tree features on the site.

Kind regards

Dr Juliet Hynes

Gloucestershire Nature Recovery Network Coordinator

Appendix 3

Headline result

On-site baseline	*Habitat units*	35.15
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	*Habitat units*	31.26
	Hedgerow units	0.00
	River units	0.00
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement &	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	*Habitat units*	-3.89
	Hedgerow units	0.00
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	*Habitat units*	-11.07%
	Hedgerow units	0.00%
	River units	0.00%

Appendix 3 – Metrix 2.0 output

A-1 Site habitat baseline

Habitats and areas			Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Ecological baseline		Retention category biodiversity value						
Broad Habitat	**Habitat type**	**Area (ha)**	**Distinctiveness**	**Condition**	**Ecological connectivity**	**Strategic significance**	**Total habitat units**		**Area retained**	**Area enhanced**	**Baseline units retained**	**Baseline units enhanced**	**Baseline units succession**	**Area lost**	**Units lost**
Grassland	Grassland - Other neutral grassland	3.3967	Medium	Moderate	Low	Location ecologically desirable but not in local strategy	29.89			1.06	0.00	9.33	0.00	2.34	20.56
Heathland and shrub	Heathland and shrub - Mixed scrub	0.15	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	0.60		0.09		0.36	0.00	0.00	0.06	0.24
Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.34	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	2.72			0.26	0.00	2.08	0.00	0.08	0.64
Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.16	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	1.28			0.11	0.00	0.88	0.00	0.05	0.40
Lakes	Lakes - Ponds (Non- Priority Habitat)	0.003	High	Poor	Medium	Area/compensation not in local strategy/ no local strategy	0.02				0.00	0.00	0.00	0.00	0.02
Heathland and shrub	Heathland and shrub - Mixed scrub	0.08	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	0.64				0.00	0.00	0.00	0.08	0.64
	Total site area ha	**4.13**					**35.15**		**0.09**	**1.43**	**0.36**	**12.29**	**0.00**	**2.61**	**22.50**

A-2 Site habitat creation

Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Temporal multiplier	Difficulty multipliers	Habitat units delivered
				Ecological connectivity	Strategic significance	Time to target condition/years	Difficulty of creation category	
Heathland and shrub - Mixed scrub	0.06	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	7	Low	0.56
Urban - Woodland	0.41	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	32+	Low	1.57
Urban - Suburban/ mosaic of developed/ natural surface	1.28	Low	Good	Low	Area/compensation not in local strategy/ no local strategy	5	Low	6.43
Grassland - Other neutral grassland	0.85	Medium	Good	Low	Location ecologically desirable but not in local strategy	15	Low	6.58
Lakes - Ponds (Non- Priority Habitat)	0.0097	High	Good	Medium	Area/compensation not in local strategy/ no local strategy	5	Low	0.16
Totals	**2.61**							**15.30**

A-3 - Site habitat enhancement

Baseline habitats	Change in distinctiveness and condition			Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Temporal multiplier	Difficulty multipliers	Habitat units delivered
Baseline habitat	Proposed habitat (Pre-populated but can be overridden)	Distinctiveness change	Condition change				Ecological connectivity score	Strategic significance	Time to target condition/years	Difficulty of enhancement category	
Grassland - Other neutral grassland	Grassland - Other neutral grassland	Medium - Medium	Moderate - Good	1.06	Medium	Good	Low	Location ecologically desirable but not in local strategy	15	Low	12.06
Woodland and forest - Other woodland; broadleaved	Woodland and forest - Other woodland; broadleaved	Medium - Medium	Moderate - Good	0.26	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	15	Medium	2.49
Woodland and forest - Other woodland; broadleaved	Woodland and forest - Other woodland; broadleaved	Medium - Medium	Moderate - Good	0.11	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	15	Medium	1.05
			Total area	**1.43**						**Enhancement total**	**15.60**

Appendix 4

Appendix 4 – Warwickshire Metric output

Pre-development assessment

Existing habitats on site Please enter all habitats within the site boundary			**Habitat distinctiveness**		**Habitat condition**		**Habitats to be retained with no change within development**		**Habitats to be retained and enhanced within development**		**Habitats to be lost within development**	
code	Phase 1 habitat description	*Habitat area (ha)*	*Distinctiveness*	*Score*	*Condition*	*Score*	*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
B22	Grassland: Semi-improved neutral grassland	3.39	Medium	4	Moderate	2			1.06	8.48	2.33	**18.64**
A131	Woodland: Mixed semi-natural woodland	0.34	Medium	4	Moderate	2			0.26	2.08	0.08	**0.64**
A131	Woodland: Mixed semi-natural woodland	0.16	Medium	4	Moderate	2			0.11	0.88	0.05	**0.40**
A22	Woodland: Scattered scrub	0.23	Medium	4	Poor	1	0.09	0.36			0.14	**0.56**
	Total	4.12				Total	0.09	0.36	1.43	11.44	2.60	20.24
												∑D + ∑F + ∑H
										Site habitat biodiversity value		32.04

Post-development assessment

Proposed habitats on site (Onsite mitigation)			Target habitats distinctiveness		Target habitat condition			Time till target condition		Difficulty of creation / restoration		***Habitat biodiversity value***
code	Phase 1 habitat description	*Area (ha)*	*Distinctiveness*	*Score*	*Condition*	*Score*		*Time (years)*	*Score*	*Difficulty*	*Score*	
	Habitat Creation	N		O		P			Q		R	(N x O x P) / Q / R
A21	Woodland: Dense continuous scrub	0.06	Medium-Low	3	Good	3		3 Years	1.1	Low	1	**0.49**
A112	Woodland: Broad-leaved plantation	0.41	Medium	4	Good	3		10 years	1.4	Medium	1.5	**2.34**
n/a	Built Environment: Gardens (lawn and planting)	1.28	Low	2	Good	3		3 Years	1.1	Low	1	**6.98**
B22	Grassland: Semi-improved neutral grassland	0.85	Medium	4	Good	3		5 years	1.2	Medium	1.5	**5.67**
	Total	**2.60**										
	Habitat Enhancement						Existing value S (= F)					((NxOxP)-S)/Q/R
B22	Grassland: Semi-improved neutral grassland	1.06	Medium	4	Good	3	**8.48**	3 Years	1.1	Low	1	**3.85**
A131	Woodland: Mixed semi-natural woodland	0.26	Medium	4	Good	3	**2.08**	10 years	1.4	Low	1	**0.74**
A131	Woodland: Mixed semi-natural woodland	0.11	Medium	4	Good	3	**0.88**	10 years	1.4	Low	1	**0.31**
	Total	**1.43**									Trading down correction value	-7.47
											Habitat Mitigation Score (HMS)	**12.91**

HBIS = HMS - HIS

Habitat Biodiversity Impact Score	**-7.33**
Percentage of biodiversity impact loss	36.22

	Loss	Gain	Impact
Woodland Habitat	1.60	3.88	**2.28**
Grassland Habitat	18.64	9.52	**-9.12**
Wetland Habitat	0.00	0.00	**0.00**
Other Habitat (including Built Environment)	0.00	6.98	**6.98**
Total	20.24	20.38	**0.14**
		Trading down	**-7.47**
			-7.33

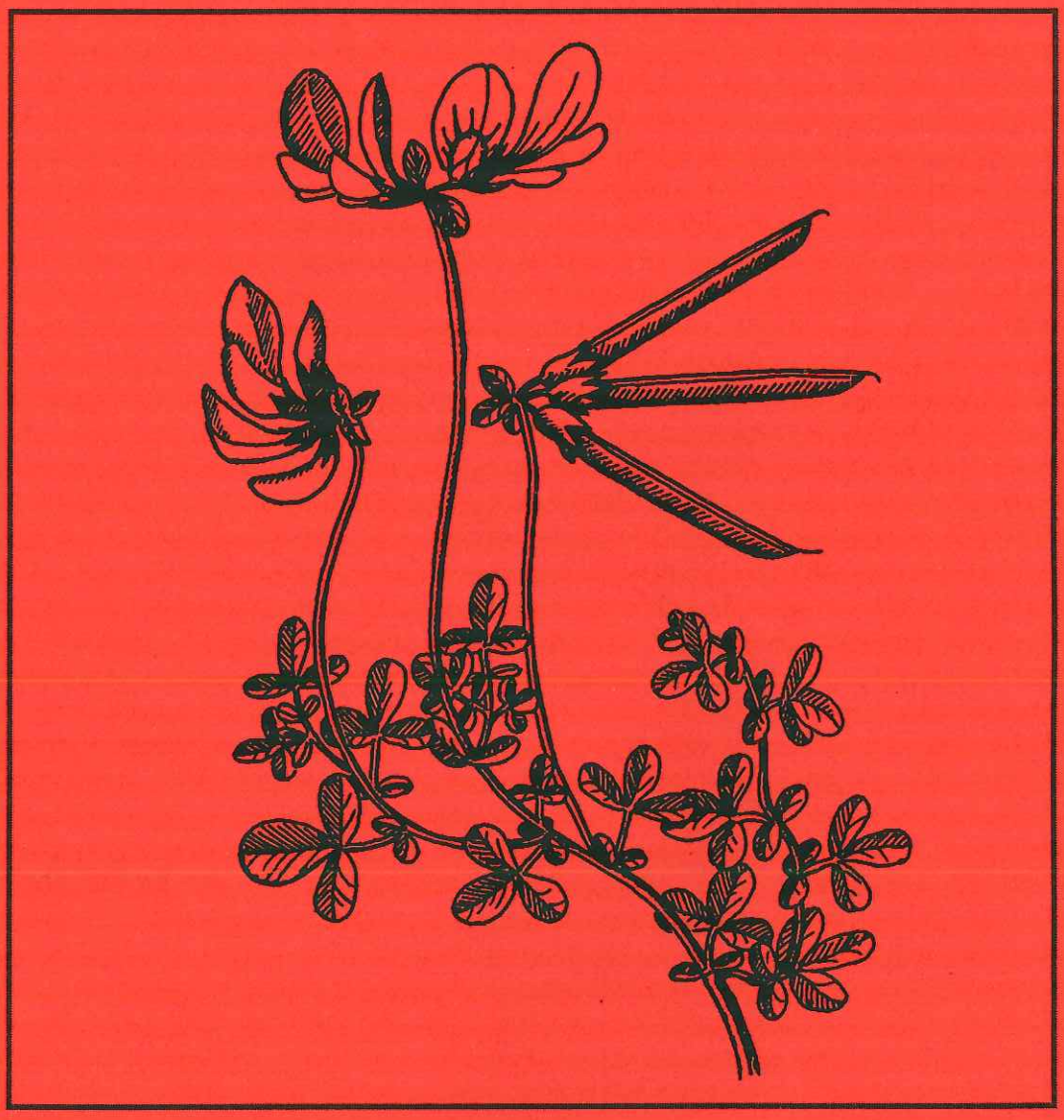
Appendix 5

ENGLISH NATURE

Monitoring the condition of lowland grassland SSSIs

Part 2 - A test of the rapid assessment approach

No. 315 - English Nature Research Reports



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Mesotrophic Grassland Indicator Species

Species name	Mesotrophic Indicator score
Achillea ptarmica	1
Agrimonia eupatoria	1
Agrimonia procera	1
Ajuga reptans	1
Alchemilla filicaulis	4
Alchemilla glabra	4
Alchemilla monticola	8
Alchemilla xanthochlora	4
Allium vineale	1
Alopecurus bulbosus	4
Anemone nemorosa	2
Avenula pubescens	1
Blysmus compressus	2
Botrychium lunaria	2
Brachypodium sylvaticum	1
Briza media	2
Bromus commutatus	4
Bromus racemosus	4
Caltha palustris	1
Campanula rotundifolia	2
Cardamine pratensis	1
Carex acutiformis	1
Carex caryophyllea	2
Carex demissa	2
Carex diandra	2
Carex distans	2
Carex disticha	2
Carex divisa	4
Carex echinata	2
Carex flacca	2
Carex hostiana	2
Carex muricata	4
Carex nigra	2
Carex ovalis	2
Carex pallescens	2
Carex panicea	2
Carex pilulifera	2
Carex pulicaris	2
Carex spicata	2
Carex tomentosa	8
Carex vesicaria	2
Carum verticillatum	2
Centaurea nigra	1
Centaurium erythraea	1
Cirsium dissectum	4

Species name	Mesotrophic Indicator score
Cirsium heterophyllum	4
Coeloglossum viride	1
Colchicum autumnale	4
Conopodium majus	1
Crepis paludosa	2
Dactylorhiza fuchsii	1
Dactylorhiza incarnata	2
Dactylorhiza maculata	2
Dactylorhiza maculata x D. fuchsii	2
Dactylorhiza majalis	4
Dactylorhiza purpurella	4
Dactylorhiza traunsteineri	2
Danthonia decumbens	2
Eleocharis palustris	1
Epilobium palustre	1
Epilobium parviflorum	1
Epipactis palustris	2
Equisetum palustre	1
Equisetum pratense	2
Equisetum sylvaticum	1
Euphrasia anglica	2
Euphrasia arctica ssp borealis	8
Euphrasia nemorosa (incl *E. curta*)	2
Euphrasia rostkoviana ssp rostkoviana	8
Festulolium loliaceum	1
Filipendula vulgaris	2
Fritillaria meleagris	8
Galium palustre	1
Galium uliginosum	1
Galium verum	1
Genista tinctoria	2
Gentianella campestris	1
Geranium pratense	2
Geranium sylvaticum	4
Geum rivale	4
Gymnadenia conopsea	2
Hordeum secalinum	1
Hyacinthoides nonscripta	1
Hydrocotyle vulgaris	1
Hypericum maculatum	1
Hypericum tetrapterum	1
Isolepis setacea	2
Juncus compressus	4

Species name	Mesotrophic Indicator score
Juncus subnodulosus	1
Knautia arvensis	1
Koeleria macrantha	2
Lathyrus montanus	1
Lathyrus nissolia	4
Lathyrus pratensis	1
Leontodon hispidus	2
Leontodon saxatilis	2
Leucanthemum vulgare	1
Linum catharticum	1
Listera ovata	2
Lotus corniculatus	1
Lotus tenuis	1
Lotus uliginosus	1
Luzula campestris	1
Luzula multiflora	1
Lychnis flos-cuculi	1
Lysimachia nummularia	1
Meum athamanticum	4
Molinia caerulea	1
Myosotis discolor	1
Myosotis secunda	1
Narcissus pseudonarcissus	1
Oenanthe fistulosa	1
Oenanthe pimpinelloides	8
Oenanthe silaifolia	8
Ononis repens	1
Ononis spinosa	2
Ophioglossum vulgatum	2
Orchis mascula	2
Orchis morio	4
Oxalis acetosella	1
Parentucillia viscosa	4
Parnassia palustris	2
Pedicularis palustris	1
Pilosella officinarum	1
Pimpinella saxifraga	2
Plantago media	1
Platanthera bifolia	2
Platanthera chlorantha	2
Polygala serpyllifolia	2
Polygala vulgaris	2
Polygonum bistorta	8
Polygonum viviparum	2
Potentilla anglica	1
Potentilla erecta	1
Potentilla palustris	2

Species name	Mesotrophic Indicator score
Primula farinosa	2
Primula veris	2
Primula veris x P. vulgaris	2
Primula vulgaris	2
Pulicaria dysenterica	1
Ranunculus auricomus	2
Ranunculus bulbosus	1
Ranunculus ficaria	1
Ranunculus flammula	1
Rhinanthus minor	1
Sagina nodosa	1
Sanguisorba minor	1
Sanguisorba officinalis	8
Saxifraga granulata	2
Senecio aquaticus	1
Senecio erucifolius	1
Serratula tinctoria	2
Silaum silaus	8
Stachys officinalis	2
Stellaria graminea	1
Stellaria palustris	1
Succisa pratensis	2
Thalictrum flavum	2
Thymus polytrichus	2
Trifolium fragiferum	8
Trifolium medium	1
Trifolium ochroleucon	8
Triglochin palustris	4
Trisetum flavescens	1
Trollius europaeus	4
Valeriana dioica	4
Valeriana officinalis	1
Veronica officinalis	1
Veronica scutellata	2
Vicia orobus	4
Vicia tenuissima	1
Vicia tetrasperma	1
Viola canina	2
Viola hirta	2
Viola riviniana	2

SW20/E1986/SW - Appendix 5

Headline Results

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On-site baseline	Habitat units	34.76
	Hedgerow units	0.09
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement &	Habitat units	28.58
	Hedgerow units	0.87
	River units	0.00
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement &	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	Habitat units	-6.18
	Hedgerow units	0.77
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained	Habitat units	-17.79%
	Hedgerow units	822.46%
	River units	0.00%

A-1 Site Habitat Baseline

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Ref	Habitats and areas: Broad Habitat	Habitat type	Area (hectares)	Habitat distinctiveness: Distinctiveness	Habitat condition: Condition	Ecological connectivity: Ecological connectivity	Strategic significance: Strategic significance	Suggested action to address habitat losses	Ecological: Total habitat units	Retention category biodiversity value: Area retained	Area enhanced	Area succession	Baseline units retained	Baseline units	Baseline units succession	Area lost	Units lost	Bespoke compensation agreed for unaccepta
1	Grassland	Grassland - Other neutral grassland	3.3824	Medium	Moderate	Low	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required	29.77		1.9085		0.00	16.79	0.00	1.47	12.97	
2	Heathland and shrub	Heathland and shrub - Mixed scrub	0.2333	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.93	0.088			0.35	0.00	0.00	0.15	0.58	
3	Woodland and Forest	Woodland and forest - Other woodland; broadleaved	0.3415	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	2.73		0.2626		0.00	2.10	0.00	0.08	0.63	
4	Woodland and Forest	Woodland and forest - Other woodland; broadleaved	0.1643	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	1.31		0.1113		0.00	0.89	0.00	0.05	0.42	
5	Lakes	Lakes - Ponds (Non- Priority Habitat)	0.003	High	Poor	Medium	Area/compensation not in local strategy/ no local strategy	Same habitat required	0.02	0.003			0.02	0.00	0.00	0.00	0.00	
6																		
7																		
8																		
9																		
10																		
11																		
		Total site area ha	4.12					Total Site baseline	34.76	0.09	2.28	0.00	0.37	19.79	0.00	1.75	14.61	

A-2 Site Habitat Creation

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Post development/ post intervention habitats

Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Temporal Time to target condition/years	Difficulty of creation	Habitat units delivered	Comments: Assessor comments	Comments: Reviewer comments
Urban - Amenity grassland	0.425333	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	3	Low	1.53		
Lakes - Ponds (Non- Priority Habitat)	0.0097	High	Good	Medium	Area/compensation not in local strategy/ no local strategy	5	Low	0.16		
Urban - Built linear features	0.425333	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local strategy	0	Low	0.00		
Urban - Developed land; sealed surface	0.425333	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local strategy	0	Low	0.00		
Urban - Woodland	0.057	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	27	Low	0.17		
Woodland and forest - Other woodland; broadleaved	0.4081	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	32+	Medium	1.05		
Totals	**1.75**							**2.91**		

A-3 Site Habitat Enhancement

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Post development/ post intervention habitats

Baseline habitats: Baseline ref	Baseline habitats: Baseline habitat	Change in distinctiveness and condition: Proposed habitat (Pre-populated but can be overridden)	Change in distinctiveness and condition: Distinctiveness change	Change in distinctiveness and condition: Condition change	Area (hectares)	Distinctiveness	Condition	Ecological connectivity: Ecological connectivity score	Strategic significance: Strategic significance	Temporal multiplier: Time to target condition/years	Difficulty multiplier: Difficulty of enhancement	Habitat units delivered
1	Grassland - Other neutral grassland	Grassland - Other neutral grassland	Medium - Medium	Moderate - Good	1.3085	Medium	Good	Low	Location ecologically desirable but not in local strategy	15	Low	21.72
3	Woodland and forest - Other woodland; broadleaved	Woodland and forest - Other woodland; broadleaved	Medium - Medium	Moderate - Good	0.2626	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	15	Medium	2.51
4	Woodland and forest - Other woodland; broadleaved	Woodland and forest - Other woodland; broadleaved	Medium - Medium	Moderate - Good	0.1113	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	15	Medium	1.07
				Total site area	**2.28**						**Enhancement total**	**25.29**