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Biodiversity Impact Calculation

Site Name

Orchard Farm, Scaynes Hill

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Client

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About the Author

This report has been prepared by Alice Motola, with 9 months experience working as an Assistant Ecologist at The Ecology Co-op. She has a bachelor`s degree in Environmental Sciences, a master`s degree in Nature Sciences and a 1-year MSc in Environmental Forestry.

About the Reviewer

This report has been reviewed by Paul Whitby, who is a Senior ecologist with 18 years experience. He has experience working on a range of developments in ecological impact assessment and biodiversity net gain. As a Full member of the Chartered Institute for Ecology and Environmental Management (CIEEM), he is bound by their code of professional conduct.



Report Summary

Purpose	The Ecology Co-operation was commissioned by Fairfax to undertake a Biodiversity Impact Calculation of a proposal to convert the existing old equestrian barn building to a new 1 storey residential building on Orchard Farm using the Small Sites Metric, to quantify net change in biodiversity.
Summary of Losses and Gains	The proposed development scheme at this site will result in the loss of: On-site - 28m² of g3c – other neutral grassland - 5m of w22 – line of trees The proposed development scheme at this site will retain: On-site - 95m² of g3c – other neutral grassland - 22m² of u1b5 – old barn building - 32m² of u1b - developed land; sealed surface Post intervention the following habitats will be created: On-site - 28m² of u1b - developed land; sealed surface (new road track) - 22.78m of species-rich native hedgerow – moderate condition The proposed development scheme at this site will enhance: On-site - 235m² of g3c – other neutral grassland to g3c – wildflower meadow – good condition
Final Metric Results	The Small Sites Metric calculation has demonstrated that the proposed scheme will results in a likely net gain of 0.0499 habitat units (+ 10.42%) The linear feature calculation for the proposed scheme results in a likely gain of 0.1524 hedgerow units (+ 27.22%). The current scheme does satisfy the trading rules within the Small Sites Metric.
Does the scheme meet net gain requirements?	The current scheme meets the 10% mandatory net gain value set out within the Environment Act 2021 and achieves the no net loss through development goals detailed by Mid Sussex District Council.



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1 INTRODUCTION

1.1 Purpose of the Report

There is a movement in planning policy and legislation towards a requirement for all new developments to demonstrate 'net gains' in biodiversity following the release of an updated National Planning Policy Framework¹ by the Department of Housing, Communities and Local Government. A mandatory value of 10% net gain for all developments has now also been outlined within the new Environment Act 2021².

This document includes a baseline 'Biodiversity Impact Calculation' (BIC) for the proposed development at Orchard Farm, Scaynes Hill. This report will be used in relation to a proposal to convert the existing old equestrian barn building to a new 1 storey residential building. The results of the BIC are deemed accurate for the most recent layout plan (see Figure 2).

The calculation utilises the Small Sites Metric and assigns 'habitat/hedgerow units' to the pre-existing habitats contained within a proposed development site and those that are predicted to be lost, restored and/or created once the development has been constructed. This allows an objective comparison to be made between the existing biodiversity value of a given site and the predicted biodiversity value post development, with the net change in biodiversity value subsequently quantified.

The purpose of this document is to present the findings of the BIC based on the most up-to date existing habitat survey information and the most current outline plans for the proposed residential development of the site. Biodiversity Impact Calculations provide an evidence base for discussions between the ecological consultant, developer and the local planning authority regarding on-site avoidance, on-site mitigation and off-site compensation requirements.

This report was commissioned and produced at the request of Ms Lisa Baker.

¹ HM Government (2023). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/media/65819679fc07f3000d8d4495/NPPF_December_2023.pdf

² HM Government (2021). Environment Act 2021. Available online at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>



1.2 Background

The site measures 0.412ha in area, and comprises a field of other neutral grassland, mature trees bordering Nash Lane and an old barn.

The site was subject to a Preliminary Ecological Appraisal (PEA)³ site walkover on the 4th of June 2024.

Habitats (UKHAB⁴) within the site and along the site boundaries are shown in (Figure 1), these include:

- u1b5 – old barn building (to be converted)
- u1b – developed land; sealed surface
- g3c – other neutral grassland
- w22 – line of trees
- 1 individual medium size tree (DBH>30cm to ≤ 60cm)



Figure 1. UKHAB map showing existing habitats within the site. The site boundary is indicated with a black line. Produced

³ The Ecology Co-op (2024). P6509. Orchard Farm Combined Preliminary Ecological Appraisal and Bat Scoping 2024 ISSUE

⁴ UKHab (2020) The UK Habitat Classification – Habitat Definitions Version 1.1.



using QGIS software, version 3.36 – Maidenhead.



Figure 1. Proposed scheme layout for the development at Orchard Farm, reproduced by Ms Lisa Baker, from Paul Hewett R.I.B.A., in July 2024, drawing number: 2416/SK.10, Rev. A.

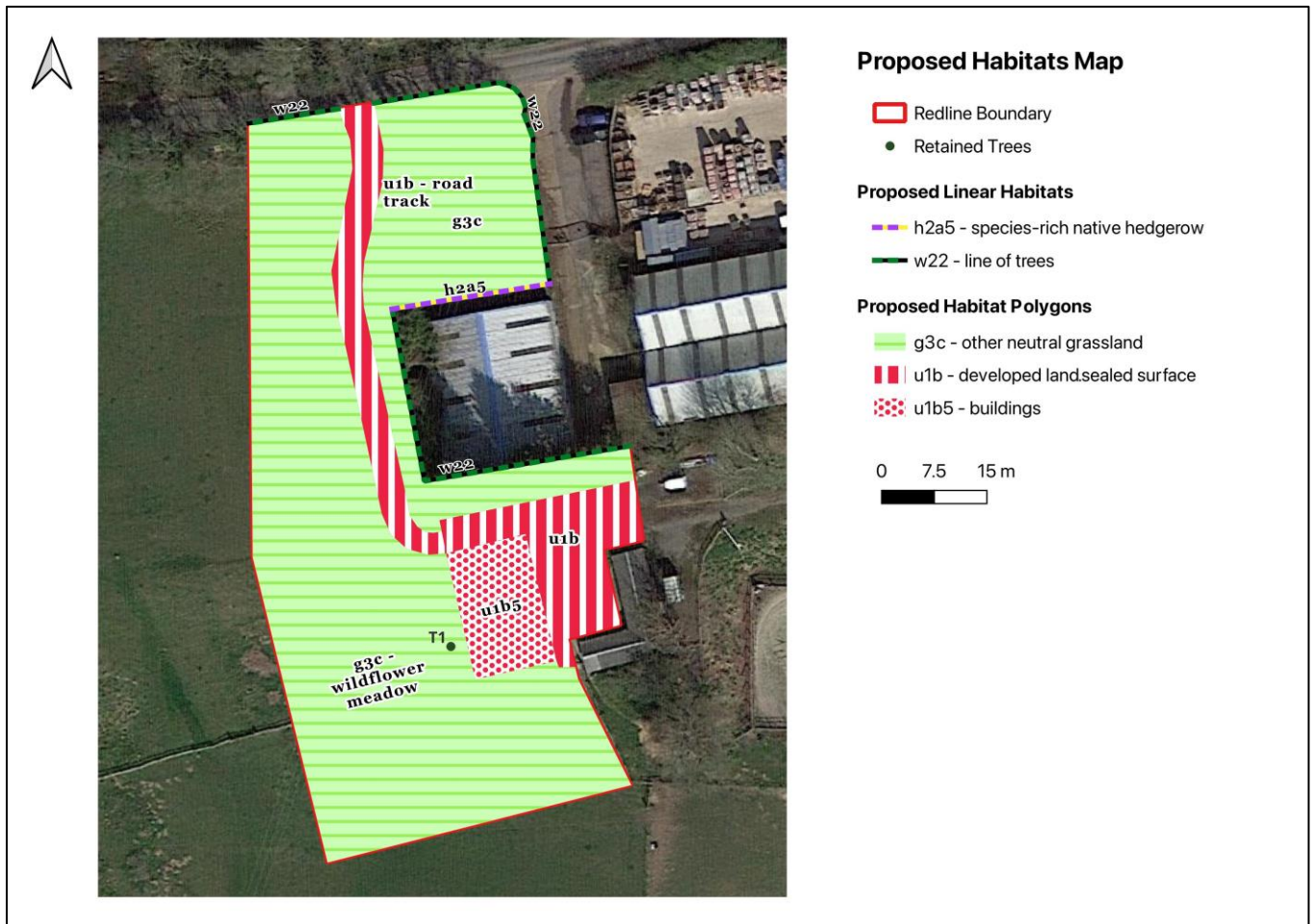


Figure 3. UKHAB map showing the proposed habitats at Orchard Farm. The site boundary is indicated with a red line. Produced using QGIS software, version 3.36 – Maidenhead.

Policy and Legislation

NPPF (2023)

The NPPF sets out the Government's view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regards to the operation of the planning system.

Paragraph 180d, states that planning policies and decisions should contribute to and enhance the local environment by:

- “*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*”

Paragraph 185b, states that to protect and enhance biodiversity and geodiversity, plans should;

- “*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*”

Paragraph 186d, states that when determining planning applications, authorities should apply the following principle:



- “development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate

Environment Act (2021)

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

Local Policy

Table 1. Mid Sussex District Plan 2014-2031 (March 2018)⁵.

Policy Number/Title	Policy Summary
DP38 - Biodiversity	• Protect landscape for biodiversity qualities • Maintain green corridors to act as wildlife corridors Biodiversity will be protected and enhanced by ensuring development: • Contributes and takes opportunities to improve, enhance, manage and restore biodiversity and green infrastructure so there is a net gain in biodiversity including through creating new designated sites and locally relevant habitats, and incorporating biodiversity features within developments • Protects existing biodiversity, so there is no net loss of biodiversity • Unavoidable damage to biodiversity should be offset through enhancements and mitigation measures • Minimises habitat and species fragmentation and maximises opportunities to enhance and restore ecological corridors to connect natural habitats and increase coherence and resilience • Promotes the restoration, management and expansion of priority habitats in the district • Avoids damage to, protects and enhances the qualifying features of internationally designated sites of importance Designated sites will be given protection and appropriate weight according to their importance and the contribution they make to the wider ecological networks Valued soils will be protected and enhanced, including the best and most versatile agricultural land and development should not contribute to unacceptable levels of soil pollution.

⁵ Mid Sussex District Plan 2014-2031 (March 2018). Available online at: <https://www.midsussex.gov.uk/media/3406/mid-sussex-district-plan.pdf>.



1.3 Methodology

This Biodiversity Impact Calculation uses the Small Sites Metric Calculation Tool published by Natural England⁶. This uses the Government Biodiversity Metric developed by DEFRA ('the DEFRA Biodiversity Metric') to calculate 'habitat units' and 'hedgerow units' by multiplying the area (m²) or lengths (m), 'distinctiveness' (habitat type), 'condition' (quality), and strategic significance (location in relation to the authority's local strategy) of each habitat parcel. Note that the baseline condition of habitats within this metric are 'fixed' and not calculated using condition assessments.

The calculation provides a negative value to the biodiversity units where habitat is being directly lost to development. Where habitats are enhanced or created on-site, the calculation gives a positive value but adds risk factors that account for uncertainty - difficulty in creating new habitats and time delays while they establish; habitats that are more difficult to restore or that will take a long time to reach a set target condition will score lower and therefore make a smaller positive contribution.

Where on-site gains are equal to or larger than the losses, the project is deemed to have neutral biodiversity impact or biodiversity 'net gain' respectively.

Where on-site gains do not outweigh on-site losses and a biodiversity 'net loss' is calculated, this becomes an 'offset requirement'. Offsets can be provided by further habitat creation or enhancement in-situ or through a third party to ensure no net loss will be achieved. Note that the Small Sites Metric cannot be used to calculate off-site habitat creation or enhancements. This will require use of the Statutory Biodiversity Metric⁷. It follows that a biodiversity net gain can still be achieved by providing higher biodiversity gains through the offset than the net loss resulting from the development.

Note that the Biodiversity Metric does not allow for 'trading down'; one of the key principles in measuring biodiversity net losses or gains is that habitats of high ecological importance cannot be offset by the creation of larger areas of habitats with lower value. The Small Sites Metric Calculation Tool includes a 'trading down correction' that deducts the number of biodiversity units that are not accounted for through the creation of equivalent high distinctive habitats than that lost. For example, the loss of a small area of neutral grassland habitat (medium distinctiveness) will not be offset by a larger area of modified grassland (low distinctiveness) and will only be offset by an equivalent area of habitat of the same distinctiveness or higher.

1.4 Data Sources

This calculation uses the most up to date survey information, using botanical data gathered during the site visit in June 2024. The areas of each habitat category were measured using GIS mapping tools (QGIS). Condition

⁶ Natural England (2024) The Small Sites Metric. Available online at: https://assets.publishing.service.gov.uk/media/65c60ec19c5b7f0012951bdd/The_Small_Sites_Metric_Statutory_Biodiversity_Metric_-_User_Guide.pdf

⁷ Natural England (2024) Statutory Biodiversity Metric. Available online at: https://assets.publishing.service.gov.uk/media/65c60e5114b83c000ca715f4/The_Statutory_Biodiversity_Metric_Calculation_Tool_-_Macro_enabled_02.24.xlsm



assessments are built into the Small Sites Metric and therefore a separate assessment was not required.

To predict habitat/hedgerow units supported after by the site after completion of the development, the aerial imagery was overlaid by the proposed scheme layout (see Figure 2). This allowed direct losses of habitats to be measured where the built environment overlaps with pre-existing habitat, with gardens and amenity areas treated separately. The habitats that are 'created' after development are assumed to achieve the highest level of condition as appropriate; a separate landscape and enhancement plan should be produced to ensure this condition is achieved.

The Small Sites Metric uses a separate calculator spreadsheet for linear features. This works under the same principles as above but replaces areas of habitat with linear length of a feature. It should be noted that because linear features often have higher ecological importance, linear habitats are assigned higher distinctiveness and must be offset with other linear features. The biodiversity units generated for linear features are not equivalent or interchangeable with biodiversity calculations for areas of habitat.

1.5 Results

1.5.1 Habitat Losses and Gains

The proposed development scheme at this site will result in the loss of:

On-site

- 28m² of g3c – other neutral grassland
- 5m of w22 – line of trees

The proposed development scheme at this site will retain:

On-site

- 95m² of g3c – other neutral grassland
- 22m² of u1b5 – old barn building
- 32m² of u1b - developed land; sealed surface

Post intervention the following habitats will be created:

On-site

- 28m² of u1b - developed land; sealed surface (new road track)
- 22.78m of species-rich native hedgerow – moderate condition

The proposed development scheme at this site will enhance:

On-site

- 235m² of g3c – other neutral grassland to g3c – wildflower meadow – good condition



The overall results of the calculations are presented in Table 2. Please refer to the Small Sites Metric calculation tool supplied with this document (submitted separately) for full details of the calculation.

Table 2. Headline results of the Biodiversity Impact Calculation for the proposed development at Orchard Farm.

Baseline Units	Habitat units	0.4791	
	Hedgerow units	0.5598	
	Watercourse units	Zero Units Baseline	
Post-development Units	Habitat units	0.5291	
	Hedgerow units	0.7122	
	Watercourse units	0.0000	
Total net unit change	Habitat units	0.0499	✓
	Hedgerow units	0.1524	✓
	Watercourse units	0.0000	
Total net % change	Habitat units	10.42%	✓
	Hedgerow units	27.22%	✓
	Watercourse units	% target not appropriate	
Habitats units required to meet target		0.0000	
Hedgerow units required to meet target		0.0000	
Watercourse units required to meet target		0.0000	

Table 3. Trading summary results of the Biodiversity Impact Calculation for the proposed development at Orchard Farm.

1e. Trading Summary	
Broad Habitat Type - Medium Distinctiveness Habitats	Trading Rules Satisfied ✓
Medium and Low Distinctiveness Band	Trading Rules Satisfied ✓

1.6 Conclusions

The Small Sites Metric calculation has demonstrated that the proposed scheme will results in a likely net gain of **0.0499 habitat units (+ 10.42%)**

The linear feature calculation for the proposed scheme results in a likely gain of **0.1524 hedgerow units (+ 27.22%)**.

The current scheme does satisfy the trading rules within the Small Sites Metric and can be achieved through he production and implementation of a suitable Biodiversity Enhancement and Management Plan (BEMP).

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.