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Biodiversity Impact Calculation

Site Name

Grainingfold Farmhouse, Five Oaks

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Client

Manorwood

Author

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Document Control

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About the Author

This report has been prepared by Jess Saunders, a GIS consultant at The Ecology Co-op. Jess holds a BSc in Environmental Science and an MSc in GIS and Remote Sensing with Environmental Management. After being with the company for over a year she has completed UKHab mapping in QGIS for a number of Biodiversity Net Gain and large-scale projects, including a 290ha site.

About the Reviewer

This report has been reviewed by Kate Priestman, who is a Principal Ecologist with over twenty years' experience. Kate has undertaken extensive survey work and reporting, encompassing a breadth of deliverables, and prepared European Protected Species licences for numerous schemes. As a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and a Chartered Environmentalist (CEnv), she is bound by CIEEM's code of professional conduct.



Report Summary

Purpose	The Ecology Co-operation was commissioned by Manorwood to undertake a Biodiversity Impact Calculation of a proposal to implementation of a paved pathway through an existing field, removing the existing strip of grassland and bordering native hedgerows, on Grainingfold Farmhouse, using the Statutory Biodiversity 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 0.049ha other neutral grassland (g3c), in good condition; 0.02km species-rich native hedgerow (h2a5), in good condition. Off-site 0.194ha modified grassland (g4), in good condition. Post intervention the following habitats will be created: On-site 0.049ha developed land, sealed surface (u1b); 0.016km species rich native hedgerow (h2a5), in moderate condition; 0.016km species rich native hedgerow (h2a5), in moderate condition; 0.008km species rich native hedgerow (h2a5), in moderate condition. Post intervention the following habitats will be enhanced: Off-site 0.194ha other neutral grassland (g3c), in good condition.
Final Metric Results	The Biodiversity Impact Calculation has demonstrated that the proposed scheme will result in a likely net gain of 0.09 habitat units (+16.01%). The linear feature calculation for the proposed scheme indicates a likely net gain of 0.03 hedgerow units (+11.58%). The current scheme does satisfy the trading rules of the Statutory Biodiversity Metric.
Does the scheme meet net gain requirements?	The current scheme does meet the 10% mandatory net gain value set out within the Environment Act 2021 and achieves the no net loss through development goals detailed by Horsham District Council.



CONTENTS PAGE

1 INTRODUCTION	1
1.1 Purpose of the Report.....	1
1.2 On-site Background.....	2
1.3 Off-site Background.....	6
1.4 Summary of Previous Survey Work	8
1.5 Policy and Legislation	8
2 METHODOLOGY	9
2.1 Data Sources.....	10
3 RESULTS	11
3.1 Existing Habitats Assessment.....	11
3.2 Habitat Losses and Gains.....	12
4 CONCLUSIONS	13
APPENDIX 1 – Habitat Condition Assessment Sheets	14



1 INTRODUCTION

1.1 Purpose of the Report

There has been a mandatory requirement for all new developments to demonstrate 'net gains' in biodiversity from the 12th of February 2024, following the release of updated National Planning Policy Framework¹ by the Department of Housing, Communities and Local Government and the Environment Act 2021². A mandatory value of 10% net gain in biodiversity value for all developments (that do not meet exemption criteria) is required under the Environment Act 2021.

This document includes a baseline 'Biodiversity Impact Calculation' (BIC) for the proposed development at Grainfold Farmhouse. The calculation utilises the Statutory Biodiversity Metric and assigns 'biodiversity 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 development of the site. BICs 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 will be used in relation to a proposal for the implementation of a paved pathway through an existing field, removing the existing strip of grassland and bordering species-rich native hedgerows. Given the likelihood of proposed changes in the design scheme, some of the recommendations will potentially be subject to change. The results of the BIC are deemed accurate for the most recent layout plan.

This report was commissioned and produced at the request of Manorwood.

¹ HM Government (2023). National Planning Policy Framework. Department for Housing, Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/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 On-site Background

The site measures 0.049ha and is in a rural village of Horsham, in West Sussex. The site is located within a field and comprises of a strip of grassland with native hedgerows and trees on the southern and northern borders.

The full site address is Grainingfold Farmhouse, Horsham Road, Five Oaks, West Sussex RH14 9AT; the site's central grid reference is TQ 101 284.

The site was subject to a preliminary ecological assessment (PEA) in August 2025³.

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

- other neutral grassland (g3c)
- species rich native hedgerow (h2a5).

³ The Ecology Co-op (2025). Preliminary Ecological Appraisal UKHab survey. – P10800

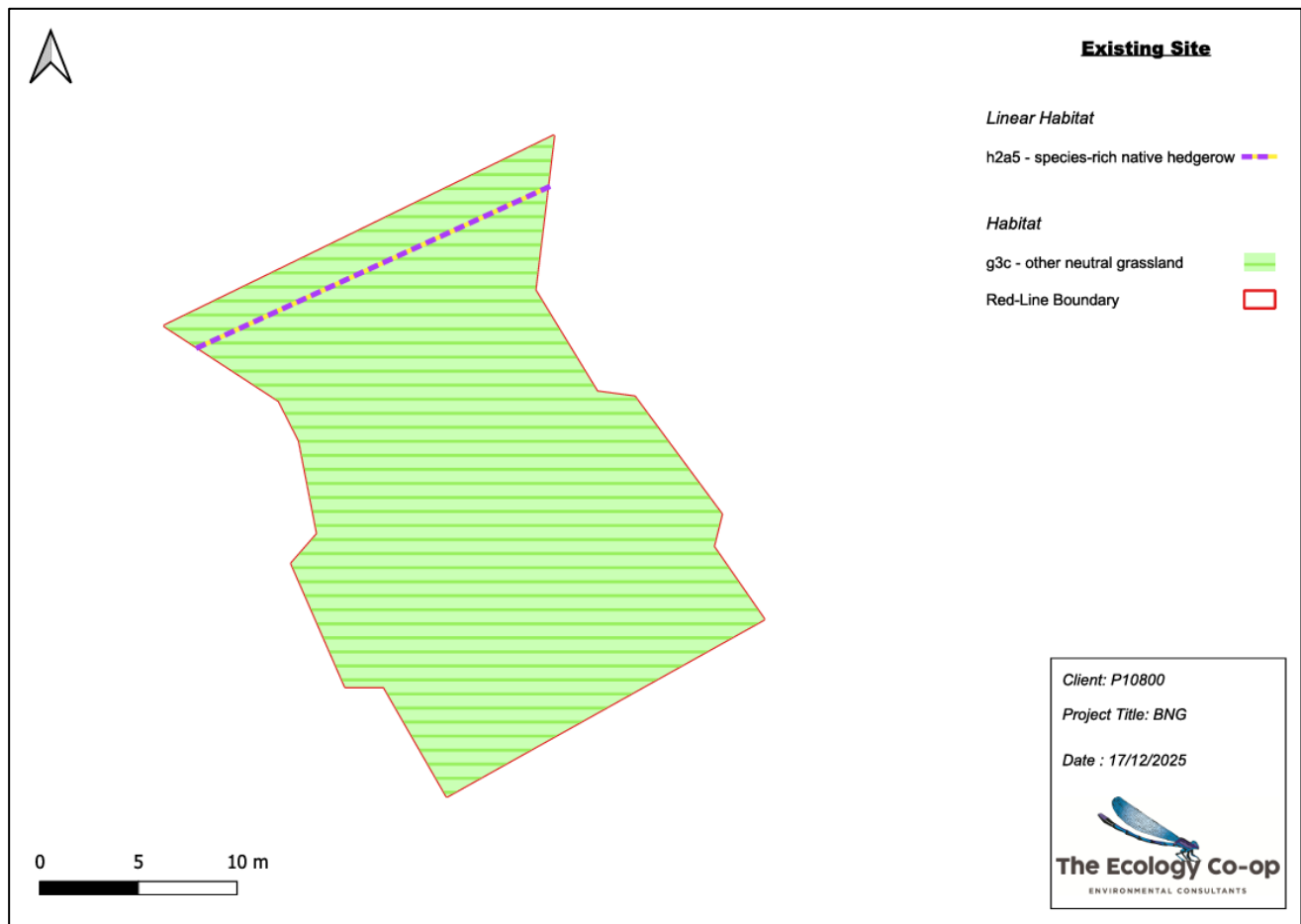


Figure 1. UKHAB map showing existing habitats within the site. The site boundary is indicated with a red line. Produced using QGIS software, version 3.40.5 – Bratislava.



Figure 2. Proposed scheme layout for the development at Grainingfold Farmhouse, produced by Manorwood, issued on the 20th of November 2025, drawing number 2507GR_100.



Figure 3. UKHAB map showing proposed habitats within the site. The site boundary is indicated with a red line. Produced using QGIS software, version 3.40.5 – Bratislava.



1.3 Off-site Background

The survey of the site was undertaken in December 2025 by The Ecology Co-op. The site measures 0.402ha in area and is located roughly 250km away from the on-site location, with a central grid reference of TQ 099 282.

The site comprises of modified grassland in good condition, and orchard trees that were planted on site in 2016 (Figure 4). The site is proposed for the enhancement of grassland to other neutral grasslands in good condition around the established orchard tree planting. A 4m buffer has been added around the planted tree locations to incorporate the canopy of mature trees in a 30-year time span (Figure 5).

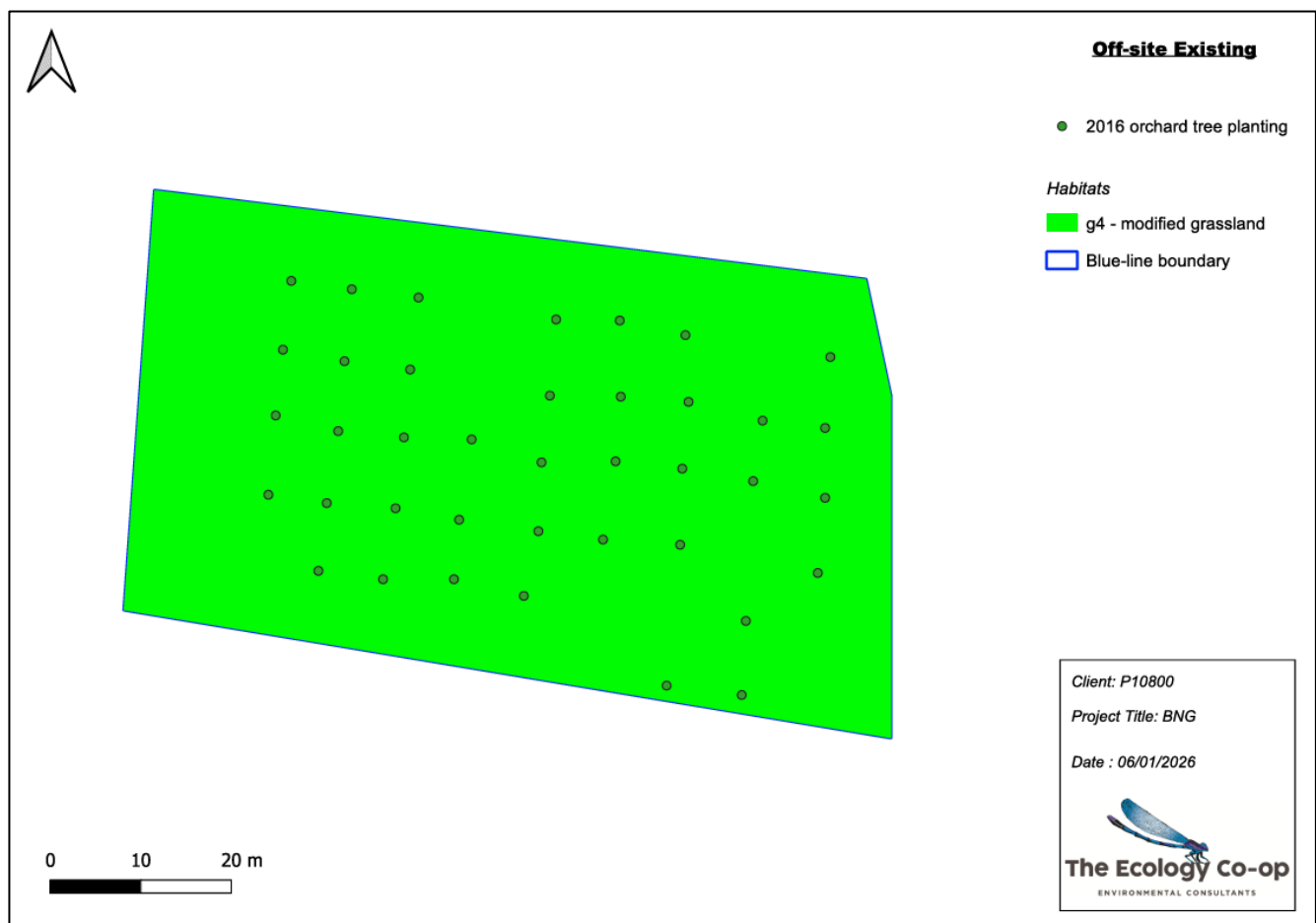


Figure 4. UKHAB map showing existing habitats off-site. The site boundary is indicated with a red line. Produced using QGIS software, version 3.40.5 – Bratislava.

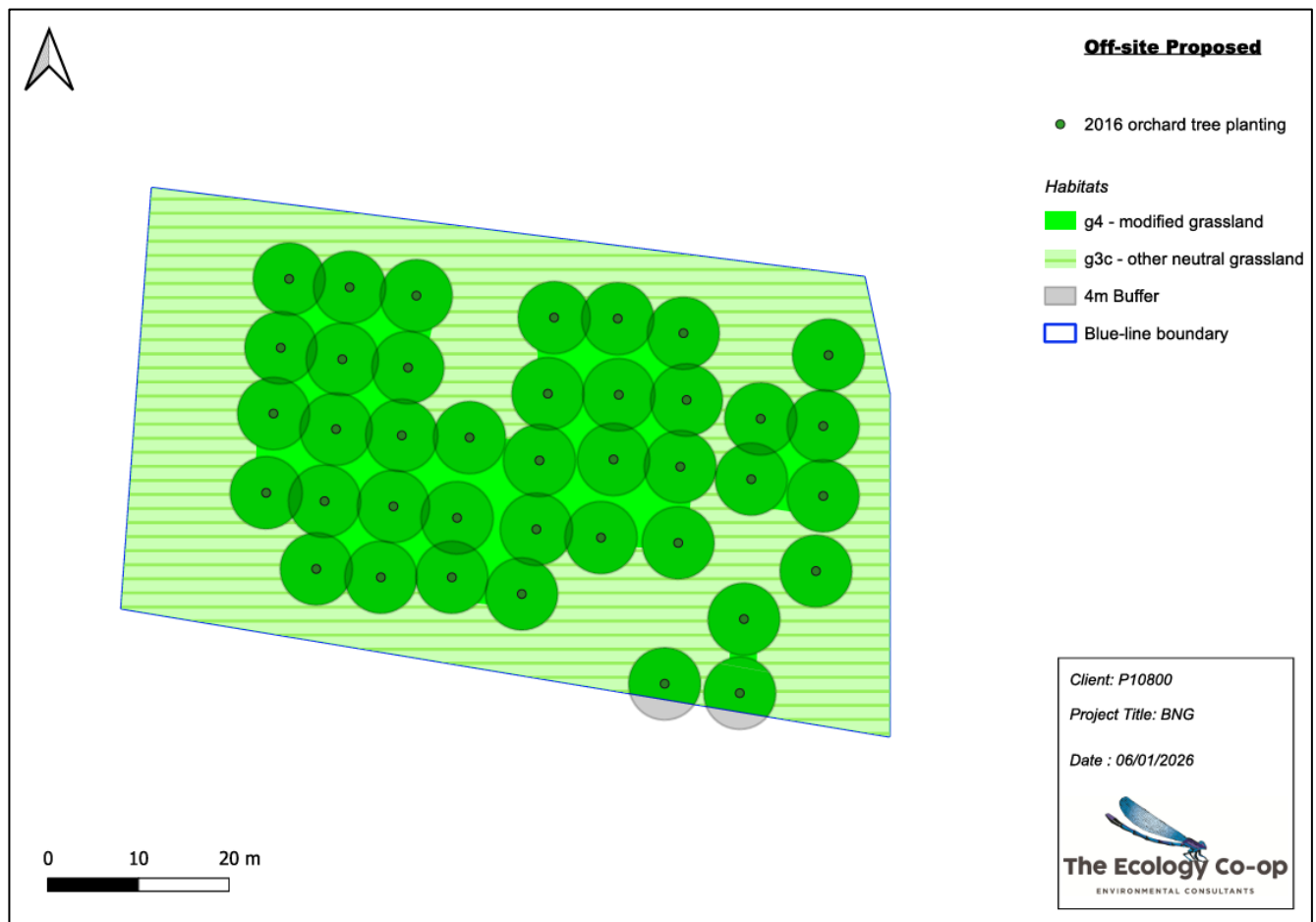


Figure 5. UKHAB map showing proposed habitats off-site. The site boundary is indicated with a red line. Produced using QGIS software, version 3.40.5 – Bratislava.



1.4 Summary of Previous Survey Work

A Preliminary Ecological Appraisal with UKHab³, completed by The Ecology Co-op in August 2025, identified that the site supports habitat with the potential to support populations of reptiles, foraging bats, nesting birds and dormice *Muscardinus avellanarius*. It is proposed that the site is subjected to a reptile presence/absence survey using artificial refugia and dormouse survey, employing a nest search by a licensed ecologist. Mitigation to protect nesting birds is detailed.

1.5 Policy and Legislation

NPPF (2024)

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 187d, 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 192b, 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 193d, 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

Policy 25 (Strategic Policy: The Natural Environment and Landscape Character) of the current District Planning Policy Framework from Horsham District Council⁴ notes that it will support development proposals which:

“Maintains and enhances the existing network of geological sites and biodiversity, including safeguarding existing designated sites and species, and ensures no net loss of wider biodiversity and provides net gains in biodiversity where possible”.

2 METHODOLOGY

This Biodiversity Impact Calculation uses the Statutory Biodiversity Metric calculation tool published by Natural England⁵. This is used to calculate ‘habitat units’ and ‘hedgerow units’ by multiplying the area (ha) or lengths (km), ‘distinctiveness’ (habitat type), ‘condition’ (quality), and strategic significance (location in relation to the authority’s local strategy) of each habitat parcel.

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, or off-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 elsewhere and are assessed using the same metric to balance the predicted gains against the losses to ensure no net loss will be achieved. 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 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 Statutory Biodiversity 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 lowland meadow priority habitat (high

⁴ Horsham District Council (2015) Horsham District Planning Framework (excluding South Downs National Park). Available online at: https://www.horsham.gov.uk/_data/assets/pdf_file/0016/60190/Horsham-District-Planning-Framework-November-2015.pdf

⁵ Natural England (2023) *The Statutory Biodiversity Metric – Calculation Tool*. Available online at: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>



distinctiveness) will not be offset by a larger area of modified grassland (medium distinctiveness) and will only be offset by an equivalent area of habitat of the same distinctiveness or higher.

2.1 Data Sources

This calculation uses the most up to date survey information, using botanical data and specific condition assessments gathered during the site visit in August 2025. The areas of each habitat category were measured using GIS mapping tools (QGIS). Condition assessments were made in accordance with the Statutory Biodiversity Metric condition assessments document⁶ and the Statutory Biodiversity Metric: draft user guide⁷. Applying the precautionary principle, a presumption for the higher condition was used where there was any uncertainty in the condition of existing habitats.

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 Statutory Biodiversity Metric calculation tool 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 hedgerow units generated for linear features are not equivalent or interchangeable with biodiversity calculations for areas of habitat.

⁶ Natural England (2023) *Statutory Biodiversity Metric Condition Assessments* Available online at: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>

⁷ Natural England (2023). *Statutory Biodiversity Metric draft user guide*. Available online at: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>



3 RESULTS

3.1 Existing Habitats Assessment

A summary of habitats and condition assessments is provided in Table 1 & 2. Full results of condition assessments for habitats which require it (using the Statutory Biodiversity Metric condition assessment document) are provided in Appendix 1.

Overall, the on-site calculated baseline is 0.59 habitat units and 0.24 hedgerow units.

Table 1. Existing on-site habitat conditions for Grainingfold Farmhouse.

Habitats		Condition Assessments
UKHab	Location	
Other neutral grassland (g3c)	The whole site comprises of other neutral grassland.	Good condition.
Species-rich native hedgerow (h2a5)	A long strip running along the top north of the site boundary.	Good condition.

Overall, the off-site calculated baseline is 1.16 habitat units.

Table 2. Existing off-site habitat conditions for Grainingfold Farmhouse.

Habitats		Condition Assessments
UKHab	Location	
Modified grassland (g4)	The whole site comprises of modified grassland with newly planting scattered orchard trees.	Good condition.



3.2 Habitat Losses and Gains

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

On-site

- 0.049ha other neutral grassland (g3c), in good condition;
- 0.02km species-rich native hedgerow (h2a5), in good condition.

Off-site

- 0.194ha modified grassland (g4), in good condition.

Post intervention the following habitats will be created:

On-site

- 0.049ha developed land, sealed surface (u1b);
- 0.016km species-rich native hedgerow (h2a5), in moderate condition;
- 0.016km species-rich native hedgerow (h2a5), in moderate condition;
- 0.008km species-rich native hedgerow (h2a5), in moderate condition.

Post intervention the following habitats will be enhanced:

Off-site

- 0.194ha other neutral grassland (g3c), in good condition.

The overall results of the calculations are presented in Table 3. Please refer to the Statutory Biodiversity Metric calculation tool supplied with this document (submitted separately) for full details of the calculation.

Table 3. Headline results of the Biodiversity Impact Calculation for the proposed development at *Grainingfold Farmhouse*.

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.09
	<i>Hedgerow units</i>	0.03
	<i>Watercourse units</i>	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	16.01%
	<i>Hedgerow units</i>	11.58%
	<i>Watercourse units</i>	0.00%
Trading rules satisfied?	Yes ✓	



Table 4. Habitat trading summary results of the Biodiversity Impact Calculation for the proposed development at Grainingfold Farmhouse.

Trading Summary		
Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Same habitat required – bespoke compensation option Δ	Yes ✓
High	Same habitat required =	Yes ✓
Medium	Same broad habitat or a higher distinctiveness habitat required (Σ)	Yes ✓
Low	Same distinctiveness or better habitat required $\geq$	Yes ✓

Table 5. Hedgerows trading summary results of the Biodiversity Impact Calculation for the proposed development at Grainingfold Farmhouse.

Trading Summary		
Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Same habitat required =	Yes ✓
High	Like for like or better	Yes ✓
Medium	Same distinctiveness or better habitat required	Yes ✓
Low	Same distinctiveness or better habitat required	Yes ✓
Very Low	Same distinctiveness or better habitat required	Yes ✓

4 CONCLUSIONS

The Statutory Biodiversity Metric calculation has demonstrated that the proposed scheme will result in a likely net gain of **0.09 habitat units (+16.01%)**.

The linear feature calculation for the proposed scheme results in a likely gain of **0.03 hedgerow units (+11.58%)**.

The current scheme does satisfy the trading rules within the Statutory Biodiversity Metric.

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



APPENDIX 1 – Habitat Condition Assessment Sheets

CONDITION ASSESSMENT SHEET FOR USE WITH STATUTORY BIODIVERSITY METRIC (SBM)- AREA BASED HABITATS			
Date	26 th August 2025	Unique polygon reference	G4
Surveyor name(s)	Ryan Walker	SBM habitat type	Other neutral grassland
Condition assessment required? (Y/N)			Yes
Onsite or offsite?	Onsite	Condition sheet used	Yes
Limitations (if applicable)	N/A		
Habitat description			
The site is dominated by rough other neutral grassland, supporting the following species; yarrow <i>Achillea millefolium</i>, foxtail <i>Alopecurus</i> sp., Yorkshire fog <i>Holcus lanatus</i>, creeping buttercup <i>Ranunculus repens</i>, creeping thistle <i>Cirsium arvense</i>, hogweed <i>Heracleum</i> sp., common mouse-ear <i>Cerastium fontanum</i>, <i>Juncus</i> sp., knapweed <i>Centaurea nigra</i>, ragwort <i>Jacobaea vulgaris</i>, fleabane <i>Pulicaria dysenterica</i>, red clover <i>Trifolium pratense</i> and plantain <i>Plantago</i> sp.			
Condition assessment results			
Photo ref			
Are any criteria non-negotiable? (Y/N) If Yes are they passed?	N/A	Condition (Good/Moderate/Poor):	Good



CONDITION ASSESSMENT SHEET FOR USE WITH STATUTORY BIODIVERSITY METRIC (SBM)- AREA BASED HABITATS			
Date	26 th August 2025	Unique polygon reference	H2a5
Surveyor name(s)	Ryan Walker	SBM habitat type	Species-rich native hedgerow
Condition assessment required? (Y/N)			Yes
Onsite or offsite?	Onsite	Condition sheet used	Yes
Limitations (if applicable)	N/A		
Habitat description			
The northern boundary is fringed with a native species-rich hedgerow, supporting the following species; <i>hawthorn</i>, <i>hazel</i> <i>Corylus avellana</i>, <i>dogwood</i> <i>Cornus sanguinea</i>, <i>blackthorn</i> <i>Prunus spinosa</i>, <i>oak</i> <i>Quercus robur</i> and <i>field maple</i> <i>Acer campestre</i>.			
Condition assessment results			
Photo ref			
Are any criteria non-negotiable? (Y/N) If Yes are they passed?	N/A	Condition (Good/Moderate/Poor):	Good



CONDITION ASSESSMENT SHEET FOR USE WITH STATUTORY BIODIVERSITY METRIC (SBM)- AREA BASED HABITATS

Date	10th December 2025	Unique polygon reference	G4
Surveyor name(s)	Ryan Walker	SBM habitat type	Modified grassland
Condition assessment required? (Y/N)			Yes
Onsite or offsite?	Onsite	Condition sheet used	Yes
Limitations (if applicable)	N/A		
Habitat description			
Modified grassland with orchard tree planting.			
Condition assessment results			
Photo ref			
Are any criteria non-negotiable? (Y/N) If Yes are they passed?	N/A	Condition (Good/Moderate/Poor):	Good