



BIODIVERSITY NET GAIN DESIGN STAGE REPORT

Client: Mr. Steve Homewood

Site: Hawksfold House, Fernhurst

14.08.2023

Version 001



aLyne Ecology Ltd.

The Cabin
54 Woodlands Road
Bookham
Leatherhead
Surrey
KT23 4HH
01372 602372 / 07443 652988
sarahlyne@aLyneecology.co.uk
www.aLyneecology.co.uk

DOCUMENT STATUS AND QUALITY CONTROL

Document Control			
Project Title and Our Reference	Hawksfold House, Fernhurst		
Surveyor(s)	Martin Roche BSc (Hons) ACIEEM Senior Ecologist Accredited Agent, NE Bat Class Licence: WML-CL18 Registration Reference: 2017-32546-CLS-CLS NE Great Crested Newt Class Licence: WML-CL08 Registration Reference: 2018-33257-CLS-CLS NE Hazel Dormouse Class Licence: WML-CL10a Registration Number: 2019-39316-CLS-CLS		
Author	Martin Roche BSc (Hons) ACIEEM Senior Ecologist Accredited Agent, NE Bat Class Licence: WML-CL18 Registration Reference: 2017-32546-CLS-CLS NE Great Crested Newt Class Licence: WML-CL08 Registration Reference: 2018-33257-CLS-CLS NE Hazel Dormouse Class Licence: WML-CL10a Registration Number: 2019-39316-CLS-CLS		
Approver	Josh Brown BSc (Hons) Senior Ecologist Accredited Agent, NE Bat Class Licence: WML-CL18 Registration Reference: 2017-32546-CLS-CLS Accredited Agent, NE Hazel Dormouse Licence: WML-CL10a Registration Reference: 2021-55169-CLS-CLS		
Revision Details			
Version	Date of Issue	Pages affected	Comments
001	28.07.2023	N/A	Issued to client.
002	14.08.2023	1 & 4	Addressed client comments
Life Span of Survey Data and Report			
Report	This report remains valid for 12 to 18 months from date of issue. The report, conclusions and recommendations are valid for current development plans only. Should this change, the report should be reviewed and, if necessary, further survey work and desk study review undertaken.		
Survey Data	Survey data are valid for 12 to 18 months from the date the survey was undertaken.		

Copyright aLyne Ecology Ltd.

This report is intended for the commissioning party only and should not be copied or reproduced in any way without prior written permission from aLyne Ecology Ltd.

This report has been prepared for the sole use of the client. Any third party referring to this report or relying on the information contained herein, does so entirely at their own risk.

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

Contents

1. Summary	1
2. Introduction	3
2.1 Biodiversity Net Gain: Good Practice Principles	3
2.2 Site Details	3
2.3 Project Background	4
2.4 Proposed Development	4
2.5 Aims and Objectives	5
2.6 Survey Limitations and Assumptions	5
3. Legislation and Planning Policy Framework	7
3.1 Legislation	7
3.2 National Planning Policy	7
3.3 Local Planning Policy	7
4. Methods	9
4.1 Baseline Biodiversity Units Calculation	9
4.2 Post-Development Biodiversity Units Calculation	9
4.3 Change in Biodiversity Units	9
5. Biodiversity Net Gain Assessment	10
5.1 Baseline Biodiversity Units	10
5.2 Post-Development Biodiversity Units	12
5.3 Baseline Biodiversity Units Calculation	16
5.4 Post-Development Biodiversity Units Calculation	17
5.5 Change In Biodiversity Units	19
5.6 Conclusion	19
6. Further Ecological Enhancements	20
7. Management and Monitoring	20
7.1 Other Neutral Grassland	20
7.2 Ponds (Non-Priority Habitat)	20
7.3 Tree Planting	20
7.4 Native Hedgerow	21
7.5 Bat Boxes	21
7.6 Bird Boxes	21
7.7 Bee Bricks and Hedgehog Hibernaculum	21
7.8 Log Piles	21
8. References	22
9. Figure 1 – Results of Field Survey	24

10. Figure 2 – Habitat Condition Assessment Map	25
11. Figure 3 – Draft Proposed Site Plan	26
12. Figure 4 – Biodiversity Retention, Creation, and Enhancement Plan	27
13. Appendix 1 – Biodiversity Net Gain	28
13.1 Introduction.....	28
13.2 Biodiversity Net Gain Principles.....	28
13.3 Exclusions	30
13.4 Biodiversity Net Gain Processes and Pathways.....	30
13.5 Measuring Biodiversity Net Gain.....	30
13.6 Management and Monitoring	31
14. Appendix 2 – Habitat Condition Assessments	32

1. Summary

Site Details
<ul style="list-style-type: none"> • Site Address: 1 Hawksfold House, Hawksfold Lane, Fernhurst, Haslemere, GU27 3JW. • OS grid reference: SU 8921 2856. • Approximate Area: 3000 m² (0.3 ha).
Scope of Works
<ul style="list-style-type: none"> • aLyne Ecology Ltd was commissioned by Mr. Steve Homewood to undertake a Biodiversity Net Gain Assessment, based on the Biodiversity Metric 4.0 (Defra, 2023) of the Planning Application Boundary (hereafter referred to as the 'site' – see Figure 1). The baseline biodiversity units have been based on the Preliminary Ecological Appraisal (PEA) carried out by aLyne Ecology in 2023 (see Figure 2) (report reference: <i>Preliminary Ecological Appraisal, Hawksfold House, Fernhurst, 24.07.2023, Version 001</i>). • Post-development biodiversity units have been based on the Draft Proposed Site Plan (see Figure 3) (reference: <i>Hawksfold House, Fernhurst, Draft Proposed Site Plan, 26th July 2023, File Name: 394-21-01, One-World Design Architects</i>).
Development Proposals
<ul style="list-style-type: none"> • The development proposals are for of the construction of a single storey dwelling with associated driveway and footpath (see Figure 3). • The development proposals also include the following proposed landscaping: <ul style="list-style-type: none"> ○ Construction of a biodiverse green roof. ○ Planting of four trees. ○ Creation of a pond (non-priority). ○ Planting of a native species-poor hedgerow comprising hornbeam. ○ Installation of log pile hibernacula, bat and bird boxes, invertebrate and hedgehog hibernacula. • Avoidance and mitigation measures recommended at a later date for protected habitats may slightly alter the development proposals but are not likely to significantly impact the outcome of this assessment.
Development Impacts
<ul style="list-style-type: none"> • Under current proposals, the majority of lost habitat will be confined to areas of existing other neutral grassland and bramble scrub within the Biodiversity Net Gain boundary (see Figure 4). Habitats outside the Biodiversity Net Gain boundary will be retained, including the parcel of semi-natural ancient woodland.
Biodiversity Net Gain Assessment
<u>Habitats</u>
<ul style="list-style-type: none"> • As shown in Table 6, the development proposals will result in a measurable biodiversity net gain of + 36.99 % (+ 0.12 units) for broad habitats units. • The current proposals also do not comply with the trading rules, i.e., habitats proposed should be like-for-like or better than habitats lost.

Hedgerows

- As shown in Table 7, the 10% biodiversity net gain target for hedgerows has been met and exceeded. Under current proposals, a biodiversity net gain of + 100 % (+0.67 units) in hedgerow units will be achieved.

Management and Monitoring

- Aquatic and marginal plants should be replaced in and around the pond, where required. The ponds should not be stocked with fish. Barley straw should be used when algae growth forms.
- The manufacturer's instructions will be followed for management and monitoring of all newly created grassland, rain gardens, and introduced shrub. Fertilisers, pesticides, and herbicides will be avoided.
- Planting of trees and hedgerows will take place from October to February. Trees and hedgerows will be well-watered to aid establishment, for at least one year following planting. All new trees/hedgerows will be checked annually for damage/disease. Protective fencing/guards will be checked bimonthly for damage/adjustments.
- Management of bat and bird boxes is not required. If a bat or bird box is damaged, it will be replaced. Replacement of bat boxes will only be carried out by a licensed bat ecologist.
- The refugia and hibernaculum will be checked annually and replaced, where necessary.

2. Introduction

2.1 Biodiversity Net Gain: Good Practice Principles

Biodiversity net gain has been defined as ‘*development that leaves biodiversity in a better state than before, and an approach where developers work with local governments, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation*’ (Baker, 2016).

The system of biodiversity units used to measure biodiversity before and after site development is a quantitative assessment, demonstrating the change in biodiversity in a robust, consistent, and transparent way.

Biodiversity Net Gain, Good Practice Principles for Development (CIEEM, CIRIA, IEMA, 2019) sets out the principles for achieving net gain. Key principles include:

- Apply the ‘Mitigation Hierarchy’ (in line with CIEEM Guidelines for Ecological Impact Assessment (EclA) (CIEEM, 2018) and be ‘additional’ by achieving outcomes that exceed existing obligations.
- Avoid losing biodiversity which cannot be off set elsewhere (e.g., irreplaceable habitats).
- Address risk (e.g., difficulty of achieving habitat creation / enhancement for net gain).
- Make a ‘measurable’ net gain contribution (e.g., calculated using an appropriate metric) and ensure that calculations consistent and transparent (i.e., limitations and assumptions are clearly identified).
- Ensure that net gain design achieves the best outcome for biodiversity (this may require both quantitative and qualitative assessment) and create a net gain legacy for long-term benefits.

2.2 Site Details

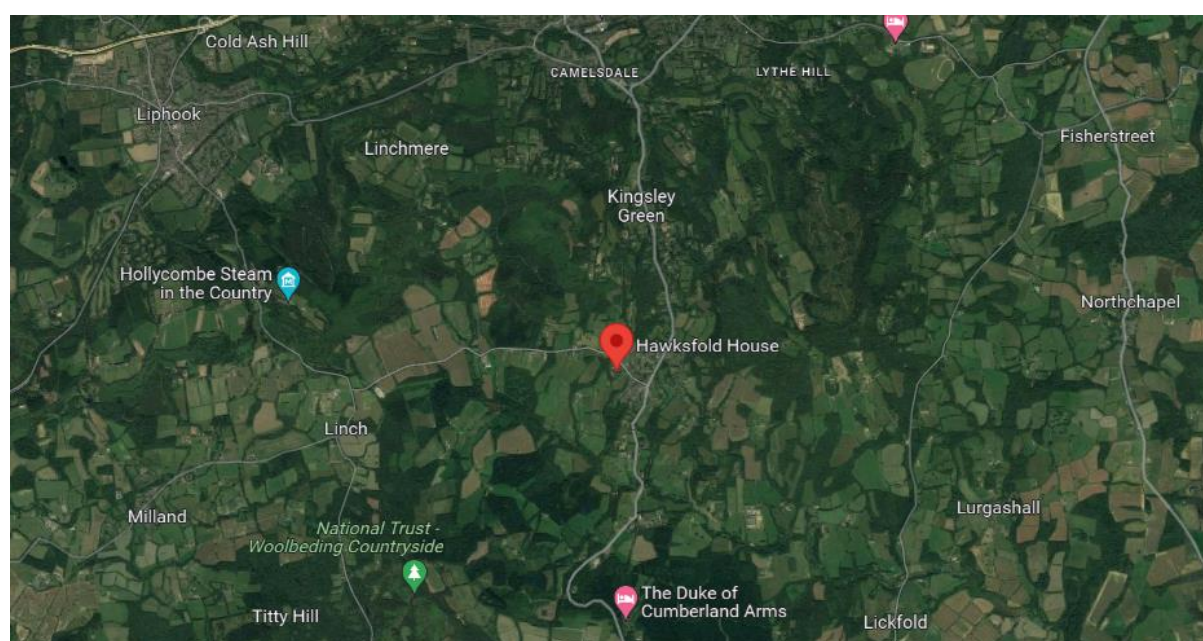
Table 1 provides details of the site, intended as a summary of key features, as provided in aLyne Ecology’s Preliminary Ecological Appraisal report, Hawksfold House, Fernhurst, 20.07.2023, Version 001.

Table 1. Site Details

Site Name	Hawksfold House, Fernhurst
Site Address	1 Hawksfold House, Hawksfold Lane, Fernhurst, Haslemere, GU27 3JW
OS Grid Reference	SU 8921 2856
Approximate Total Area	3000 m ² (0.3 ha)
Landowner and Local Authority	Mr. Steve Homewood, Chichester District Council
Geology and Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils
Hydrology	Impeded drainage
Nature Conservation Designations	Network Enhancement Zone 2
Other Designations	None on site
The Woodland Trust Ancient and Notable Tree Inventory	None on site
Biodiversity Opportunity Area	None on site
National Habitat Network	Semi-natural ancient woodland site
Primary Habitats	Semi-natural ancient woodland, buildings, lawns, ornamental shrubs, and trees
Protected Species	Reptiles, nesting birds, foraging/commuting bats, and European hedgehogs (<i>Erinaceus europaeus</i>)
Current Land Use	Garden space and former sweet chestnut plantation

Surrounding Habitats and Land Use	The site is situated within a parcel of semi-natural ancient woodland located on the edge of an urban area, with pastureland and woodland parcels to the south and west and residential buildings and associated gardens to the north and east.
Urban Context / Locality	The site is located off Hawksfold Lane West on the western edge of Fernhurst. The A286 is located 400 m to the east of the site.
Connectivity to Wider Landscape	There is a parcel of semi-natural ancient woodland located on site, which connects directly to Perry Copse to the north of the site, which are likely to support key foraging habitat for bats.

An aerial plan showing the location of the site is provided below.



Site Location (© Google Earth Pro, accessed 20th July 2023).

2.3 Project Background

Full details on ecological surveys carried out at the site are provided in the following reports produced by aLyne Ecology:

- aLyne Ecology's Preliminary Ecological Appraisal report, Hawksfold House, Fernhurst, 20.07.2023, Version 001.

2.4 Proposed Development

The development proposals as shown in the Proposed Site Plan (*reference: Hawksfold, Proposed Site Plan, 26th May 2023, File Name: 394-21-01, One-World Design Architects*), the following has been proposed (see Figure 3):

- Construction of a single storey dwelling, which has been classified as developed land, sealed surface.
- Construction of a biodiverse green roof.
- Construction of footpaths and car parking spaces, which has been classified as developed land, sealed surface.

- Creation of a pond (non-priority).
- Planting of four trees.
- Planting of a native species-poor hedgerow comprising hornbeam (*Carpinus betulus*).
- Installation of a log pile hibernacula for invertebrates and reptiles.
- Installation of a Schwegler 2F bat boxes.
- Installation of a 2GR Schwegler nest box.
- Installation of a swift brick.
- Installation of a bee bricks.
- Installation of a Royal hedgehog house.

The development will result in the loss or partial loss of the following habitats:

- Bramble scrub.
- Developed land, sealed surface.
- Other neutral grassland.

Avoidance and mitigation measures recommended in aLyne Ecology Ltd PEA report (report reference: *Hawksfold House, Fernhurst, Preliminary Ecological Appraisal report, Hawksfold House, Fernhurst, 20.07.2023, Version 001*) for protected habitats and species may slightly alter the development proposals but are not likely to significantly impact the outcome of this assessment.

2.5 Aims and Objectives

The objectives of this Biodiversity Net Gain Assessment are as follows:

- Establish the baseline biodiversity units for the site, classifying the type, distinctiveness, condition, and strategic significance of habitats and hedgerows present prior to development. Baseline biodiversity units are based on the Habitat Condition Assessment carried out by aLyne Ecology Ltd (see Figure 2).
- Establish the post-development biodiversity units for the proposed scheme, based on the habitats and hedgerows to be retained, enhanced, and created detailed in the Draft Proposed Site Plan (see Figure 3).
- Determine whether the proposed scheme will result in a net loss or net gain for biodiversity (habitats and hedgerows).
- Make recommendations for maximising net gain, in accordance with the NPPF, 2021 and Chichester District Council Local Plan 2021-2039: Proposed Submission.
- Clearly identify limitations and assumptions.

The Biodiversity Metric 4.0 (Defra, 2023) has been used to calculate biodiversity units before and after development.

2.6 Survey Limitations and Assumptions

2.6.1 Survey Limitations

The Habitat Condition Assessment was carried out in July 2023, which is within 12 months of preparing this assessment. Therefore, the use of this data is concluded to be appropriate, in accordance with current guidelines set out by CIEEM concerning the lifespan of ecological data.

The site was visited over the period of one day, as such seasonal variations cannot be observed and only a selection of all species that potentially occur within the site have been noted. Therefore, the survey provides a general assessment of potential nature conservation value.

There were no limitations to the field survey in terms of the following:

- Optimal time of year for habitat surveys.
- The site could be fully accessed.
- Weather conditions (dry and sunny).
- Personal competence (qualifications, training, skills, and experience).
- Time spent surveying.

2.6.2 Biodiversity Net Gain Assumptions

The size of the site is less than 0.5 ha, and the development proposals include the construction of a single dwelling; however, a parcel of semi-natural ancient woodland is located on site (see Other Lowland Mixed Deciduous Woodland on Figure 1), which is situated directly adjacent to the Biodiversity Net Gain Boundary (see Figure 2), where the development footprint will be situated. Therefore, the Biodiversity Defra Metric 4.0 has been used for this assessment as the development proposals could potentially impact an irreplaceable habitat.

The classification of created broad habitat and hedgerow types have been selected based on those most closely matching the composition of species outlined in the Draft Proposed Site Plan (see Figure 3). The condition of the proposed habitats has been assumed based on which relevant condition criteria can feasibly be achieved on site.

3. Legislation and Planning Policy Framework

3.1 Legislation

3.1.1 Environment Act 2021

Under The Environment Act 2021, all granted planning applications in England will be required to deliver at least a 10% biodiversity net gain. This policy is anticipated to become mandatory in November 2023.

3.2 National Planning Policy

3.2.1 National Planning Policy Framework (2021)

The NPPF, 2021 sets out policies for, *inter alia*, biodiversity and geological conservation directing that schemes should seek to protect and enhance, where possible, designated, and non-designated nature conservation sites and features.

Chapter 15 (Conserving and enhancing the natural environment), Paragraph 174 (d) states: “*minimising impacts on and providing net gains for biodiversity, including establishing coherent ecological networks that are more resilient to current and future pressures.*”

Paragraph 179(b) states: “*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.*”

3.3 Local Planning Policy

3.3.1 Chichester District Council Local Plan 2021-2039: Proposed Submission

Policy NE5: Biodiversity and Biodiversity Net Gain

Policy NE5 of the Chichester District Council Local Plan 2021-2039: Proposed Submission, states, ‘*All development shall ensure the conservation, protection, enhancement, and restoration of biodiversity, avoiding any adverse impact on the condition and recovery of all types of nature conservation sites, habitats and species within their ecological networks including:*

- B. Irreplaceable habitats, including ancient woodland and ancient or veteran trees.*
- E. Priority Habitats and Species.*
- G. Locally designated sites, such as local wildlife sites and Local Nature Reserves.*
- H. Wildlife corridors and stepping-stones.*

Opportunities to conserve, protect, enhance, and recover biodiversity and contribute to wildlife and habitats connectivity will be undertaken, including the preservation, restoration and recreation of priority habitats, ecological networks and the protection and recovery of priority species populations.

Policy NE5 also specified the Council’s policy on biodiversity net gain stating, ‘*Development proposals will be permitted where it can be demonstrated that the following criteria have been met:*

- 1. Development proposals adhere to the NPPF mitigation hierarchy, and in addition, demonstrate that proposals provide a minimum of 10% net gain in biodiversity against a pre-development baseline:*
 - b. For minor development of 1 – 9 dwellings or on sites of less than 0.5 hectares the Small Sites Metric (or future equivalent) will be applied.*

4. Methods

4.1 Baseline Biodiversity Units Calculation

The extent of habitat loss, retention, and creation has been calculated using the Biodiversity Metric 4.0 (Defra, 2023). The Field Survey Map is provided in Figure 1 and the Habitat Condition Assessment map is provided in Figure 2. The habitat condition assessments (habitat and hedgerow) were completed by aLyne Ecology Ltd in July 2023. The habitat condition assessments for each habitat parcel are provided in Appendix 2.

The Biodiversity Net Gain Site Boundary does not contain irreplaceable habitats (i.e., ancient woodland and veteran trees).

4.2 Post-Development Biodiversity Units Calculation

The calculation of post-development biodiversity units has been based on the Draft Proposed Site Plan (see Figure 3) and mapped using QGIS 3.22 Białowieża.

4.3 Change in Biodiversity Units

The change in biodiversity units is calculated by subtracting the baseline biodiversity units from post-development biodiversity units. A net gain in biodiversity units for habitats and hedgerows are required for the project to achieve biodiversity net gain. A biodiversity retention, creation, and enhancement plan is provided in Figure 4.

5. Biodiversity Net Gain Assessment

The following industry recognised best practice methods have been followed:

- Baker J. et al (2019). Biodiversity Net Gain. Good Practice Principles for Development. A Practical Guide. CIRIA.
- British Standards Institute (BSI) (2013). BS42020 - Biodiversity Code of Practice for Planning and Development. BSI, London.
- British Standards Institute (BSI) (2021). BS 8683 - Process for designing and implementing Biodiversity Net Gain – Specification. BSI, London.

Chichester District Council Local Plan 2021-2039: Proposed Submission has been considered.

5.1 Baseline Biodiversity Units

The biodiversity baseline habitats and hedgerows are presented in map form in Figure 2 and the calculation of baseline biodiversity units includes all habitats and hedgerows on site, recorded as follows:

- Other neutral grassland – 0.055 ha.
- Bramble scrub – 0.022 ha.
- Developed land, sealed surface – 0.0056 ha.

The habitat distinctiveness for each habitat is auto populated in the Biodiversity Metric 4.0 (Defra, 2023). The following sections provide information on how the habitat condition and the strategic significance have been scored.

Further information on scoring habitat condition is provided in Appendix 2.

5.1.1 Other Neutral Grassland

The grassland on site was assessed as other neutral grassland habitat as there are between nine and 15 plant species per m² with no calcareous or acidic plant indicator species dominating.

Habitat Condition Assessment

The original field survey was undertaken during the optimal time of year for habitat condition assessments.

The other neutral grassland has been set as 'Poor'. This is a result of the other neutral grassland passing two of the six condition criteria and failing the essential criteria A to achieve at least 'Moderate' condition as the habitat is not a good representation of any of the Level 5 habitat descriptions in the UKHab description because the grassland was closely mown at the time of the assessment.

Strategic Significance

The strategic significance for the parcel of other neutral grassland was set as medium i.e., 'Location ecologically desirable but not in local strategy'. This is because the habitat is not designated within the local strategy but provides an ecologically beneficial stepping-stone from habitats on site to habitats located in the wider landscape.

5.1.2 Bramble Scrub

Bramble scrub habitat on site comprises dense scrub dominated by bramble.

Habitat Condition Assessment

The bramble scrub habitat is auto-populated as 'N/A' by the Biodiversity Metric.

Strategic Significance

The strategic significance for the parcels of bramble scrub was set as medium i.e., 'Location ecologically desirable but not in local strategy'. This is because the habitat is not designated within the local strategy but provides an ecologically beneficial stepping-stone from habitats on site to habitats located in the wider landscape.

5.1.3 Developed Land, Sealed Surface

There is a hardstanding footpath and a shed present on site, which have both been classified as developed land, sealed surface.

Habitat Condition Assessment

The condition for the developed land, sealed surface habitat is auto-populated as 'N/A' by the Biodiversity Metric.

Strategic Significance

The strategic significance for the parcel of ruderal/ephemeral was set as low i.e., 'Area/compensation not in local strategy/no local strategy'. This is because the habitat is not designated within the local strategy and is not in an ecologically desirable location.

5.2 Post-Development Biodiversity Units

5.2.1 Habitat Retention and Loss

The following habitats have been included in the calculation of post-development biodiversity units:

The areas of habitats to be retained are as follows:

- Bramble scrub – 0.0185 ha.
- Developed land, sealed surface – 0.004 ha.

The areas of habitats to be lost are as follows:

- Other neutral grassland – 0.319 ha.
- Bramble scrub – 0.0035 ha.
- Developed land, sealed surface – 0.0016 ha.

5.2.2 Habitat Creation

The following sections provide information on how the habitat condition and the strategic significance have been scored for habitats to be created on site. The habitat distinctiveness for each habitat is auto-populated in the Biodiversity Metric 4.0 (Defra, 2023). A biodiversity retention, creation, and enhancement plan is provided in Figure 4.

Other Neutral Grassland

The proposed other neutral grassland will total 0.0103 ha and will be planted with the Meadow Mixture for Clay Soils EM4, which includes the following species:

- Agrimony (*Agrimonia eupatoria*).
- Betony (*Stachys officinalis*).
- Bird's-foot trefoil (*Lotus corniculatus*).
- Common bent (*Agrostis capillaris*).
- Common dandelion (*Taraxacum officinale*).
- Common knapweed (*Centaurea nigra*).
- Cowslip (*Primula veris*).
- Crested dog's-tail (*Cynosurus cristatus*).
- Glaucous sedge (*Carex flacca*).
- Lady's bedstraw (*Galium verum*).
- Meadow buttercup (*Ranunculus acris*).
- Meadowsweet (*Filipendula ulmaria*).
- Meadow vetchling (*Lathyrus pratensis*).
- Musk mallow (*Malva moschata*).
- Oxeye daisy (*Leucanthemum vulgare*).
- Pepper saxifrage (*Silaum silaus*).
- Quaking grass (*Briza media*).
- Ragged robin (*Silene flos-cuculi*).
- Red fescue (*Festuca rubra*).
- Ribwort plantain (*Plantago lanceolata*).
- Sweet vernal-grass (*Anthoxanthum odoratum*).
- Wild carrot (*Daucus carota*).
- Yarrow (*Achillea millefolium*).
- Yellow oat-grass (*Trisetum flavescens*).

The habitat distinctiveness is auto populated by the Biodiversity Metric as 'Medium' distinctiveness. The habitat condition has been assessed as 'Moderate' as the proposed other neutral grassland will be able to realistically pass between three and five of the six condition criteria including the essential criteria

A for 'Moderate' condition, provided the management and monitoring recommendations have been followed (see Section 7.1).

The strategic significance for other neutral grassland was set as medium i.e., 'Location ecologically desirable but not in local strategy'. This is because the habitat is not designated within the local strategy but provides an ecologically beneficial stepping-stone from habitats on site to habitats located in the wider landscape.

Ponds (Non-Priority Habitat)

Creation of the ponds (non-priority habitat) totals 0.0032 ha. The proposed pond will be saucer shaped with scalloped edges and planted with Pond Edge Mixture EP1, which includes the following species:

- Common bent.
- Common knapweed.
- Corky-fruited water-dropwort (*Oenanthe pimpinelloides*).
- Crested dog's-tail.
- Crosswort (*Cruciata laevipes*).
- Grey sedge (*Carex grayi*).
- Gypsywort (*Lycopus europaeus*).
- Hedge bedstraw (*Galium mollugo*).
- Hedge cranesbill (*Geranium pyrenaecium*).
- Meadowsweet.
- Pendulous sedge (*Carex pendula*).
- Quaking grass.
- Ragged robin.
- Red fescue.
- Red campion (*Silene dioica*).
- Selfheal (*Prunella vulgaris*).
- Sweet vernal-grass.
- Tufted hair-grass (*Deschampsia cespitosa*).
- Water avens (*Geum rivale*).
- Wild teasel (*Dipsacus fullonum*).
- Yellow flag iris (*Iris pseudacorus*).
- Yellow rattle (*Rhinanthus minor*).

The habitat distinctiveness is auto populated by the Biodiversity Metric as 'Medium' distinctiveness. The habitat condition has been assessed as 'Moderate' as the proposed wildlife pond will be able to realistically pass between six and eight of the nine condition criteria for non-woodland ponds.

The strategic significance for ponds (non-priority) was set as medium i.e., 'Location ecologically desirable but not in local strategy'. This is because the habitat is not designated within the local strategy but provides an ecologically beneficial stepping-stone from habitats on site to habitats located in the wider landscape.

Developed Land; Sealed Surface

Buildings and Hardstanding

The construction of the proposed new dwelling, parking, and paving areas has been classified as developed land; sealed surface because the soil surface will be sealed with impervious materials.

The habitat distinctiveness is auto populated by the Biodiversity Metric as 'Very Low' distinctiveness. The habitat condition is auto populated by the Biodiversity Metric as 'N/A'.

The strategic significance was set as low i.e., 'Area/compensation not in local strategy/no local strategy'. This is because the habitat is not designated within the local strategy and is not in an ecologically desirable location.

Biodiverse Green Roof

The proposed green roof to be created on site will be the Native Wildflower Blanket Biodiverse Green Roof from Bauder, which will total 0.012 ha. The proposed green roof has been classified as a biodiverse green roof in the Biodiversity Metric as the roof will be planted with 36 wildflower species including 24 native species that are beneficial to pollinators, with less than 10% of the species composition comprising grass species.

The habitat distinctiveness is auto populated by the Biodiversity Metric as 'Medium' distinctiveness. The habitat condition has been assessed as 'Moderate' as the proposed biodiverse green roof will be able to realistically pass at least five of the six condition criteria including the essential criteria F for 'good' condition provided the management and monitoring recommendations have been followed (see Section 7.3).

The strategic significance for other neutral grassland was set as i.e., 'Location ecologically desirable but not in local strategy'. This is because the habitat is not designated within the local strategy but will support pollinating invertebrates and increase the floristic diversity on site.

Urban Trees

Four trees will be planted on site, with a Root Protection Area totalling 0.0163 ha. All proposed tree planting on site have been classified as 'urban' trees rather than 'rural' trees as they will occur within the boundaries of a dwelling within close proximity to hard standing paths and roads. Potential proposed species include the following:

- Apple (*Malus domestica*).
- Bird cherry (*Prunus padus*).
- Crab apple (*Malus sylvestris*).
- Pear (*Pyrus communis*).
- Plum (*Prunus domestica*).
- Rowan (*Sorbus aucuparia*).
- Wayfaring (*Viburnum lantana*).

The habitat distinctiveness is auto populated by the Biodiversity Metric as 'Medium' distinctiveness. The habitat condition has been assessed as 'Moderate' condition as the proposed tree planting is likely to pass between three and four of the six condition criteria for individual trees.

The strategic significance for all individual trees was set as medium i.e., 'Location ecologically desirable but not in local strategy'. This is because the habitat is not designated within the local strategy but will support invertebrates and nesting birds and provide connectivity to other habitats on site and in the wider landscape.

Native Hedgerow

The proposed native hedgerow will be a total length of 0.2 km and the only species proposed will include hornbeam.

The habitat distinctiveness is auto populated by the Biodiversity Metric as 'Low' distinctiveness. The habitat condition has been assessed as 'Moderate' condition as the hedgerow will likely pass between six and eight of the ten condition criteria.

The strategic significance was set as medium i.e., 'Location ecologically desirable but not in local strategy'. This is because the habitat is not designated within the local strategy but will support invertebrates and nesting birds and provide connectivity to other habitats on site and in the wider landscape.

5.2.3 Habitat Enhancement

The following sections provide information on how habitat condition has changed as a result of enhancing the retained other neutral grassland on site.

Existing Other Neutral Grassland Retained and Increased to Moderate Condition

The existing other neutral grassland habitat passes two of the six condition criteria but fails the essential criteria A to achieve 'Moderate' condition. The areas of retained other neutral grassland will be enhanced by the following management techniques:

- Removal of undesirable plant species including, creeping buttercup (*Ranunculus repens*), creeping thistle (*Cirsium arvense*), greater plantain (*Plantago major*), and white clover (*Trifolium repens*), which were all recorded within this habitat.
- Mowing yearly in rotation in the autumn to no lower than 10 cm in height and removing the arisings to reduce the nutrient input into the soil and prevent the grass species from dominating.
- Fertilisers, pesticides, and herbicides will be avoided.

Provided the above management and monitoring measures are carried out, the other neutral grassland habitat will pass between three and five of the six condition criteria including the essential criteria A.

The habitat distinctiveness is unchanged as the broad habitat type will stay the same. The strategic significance will be unchanged as the habitat is not designated within the local strategy but will still provide an ecologically beneficial stepping-stone from habitats on site to habitats located in the wider landscape.

5.3 Baseline Biodiversity Units Calculation

Table 3 below provides the baseline biodiversity units for the site.

Table 3. Baseline Biodiversity Units

Site Habitat Baseline	Approximate Area (ha)	Habitat Distinctiveness	Habitat Condition	Strategic Significance	Suggested Action to Address Habitat Losses	Baseline Biodiversity Units	Baseline Biodiversity Units Retained
Other Neutral Grassland	0.0319	Medium	Poor	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.14	0
Other Neutral Grassland	0.0229	Medium	Poor	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.1	0
Bramble Scrub	0.022	Medium	N/A	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.1	0.08
Developed Land, Sealed Surface	0.0056	Very low	N/A	Area/compensation not in local strategy/ no local strategy	Compensation not required	0	0
Total Habitat Baseline Units						0.34	0.08

5.4 Post-Development Biodiversity Units Calculation

Table 4 below provides the biodiversity units for created habitats for the site.

Table 4. Biodiversity Units for Created Habitats

Habitat Type	Approximate Area (ha)	Habitat Distinctiveness	Habitat Condition	Strategic Significance	Biodiversity Units Delivered
Other Neutral Grassland	0.0103	Medium	Moderate	Location ecologically desirable but not in local strategy	0.08
Ponds (Non-Priority Habitat)	0.0032	Medium	Moderate	Location ecologically desirable but not in local strategy	0.03
Developed Land, Sealed Surface (Buildings and Hardstanding)	0.0235	Very low	N/A	Area/compensation not in local strategy/ no local strategy	0
Biodiverse Green Roof	0.012	Medium	Moderate	Location ecologically desirable but not in local strategy	0.06
Urban tree	0.0163	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	0.05
Total Post-Development Habitat Units Delivered					0.21

Linear Habitat Type	Length (km)	Habitat Distinctiveness	Habitat Condition	Strategic Significance	Biodiversity Units Delivered
Native Hedgerow	0.2	Low	Moderate	Area/compensation not in local strategy/ no local strategy	0.67
Total Post-Development Hedgerow Units Delivered					0.67

Table 5 below provides the biodiversity units for enhanced habitats for the site.

Table 5. Biodiversity Units for Enhanced Habitats

Baseline Habitat Type	Proposed Habitat	Habitat Distinctiveness Change	Habitat Condition Change	Area (ha)	Strategic Significance	Biodiversity Units Delivered
Other Neutral Grassland	Other Neutral Grassland	Medium-Medium	Poor-Moderate	0.0229	Location ecologically desirable but not in local strategy	0.17
Total Post-Development Enhancement Units Delivered						0.17

5.5 Change In Biodiversity Units

Tables 6 and 7 show the changes in biodiversity units for habitats and hedgerows.

Table 6. Change in Biodiversity Units for Habitats

On-Site Habitat Baseline Units	0.34
On-Site Habitat Post-Intervention Units (Includes habitat retention, habitat creation, and enhancement)	0.46
Total Net Change in Biodiversity Units	+ 0.12
Total Net % Change	+ 36.99 %

Table 7. Change in Biodiversity Units for Hedgerows

On-Site Hedgerow Baseline Units	0
On-Site Hedgerow Post-Intervention (Includes habitat retention, habitat creation, and enhancement)	0.67
Total Net Change in Biodiversity Units	+ 0.67
Total Net % Change	+ 100 %

5.6 Conclusion

Habitats

Under current proposals, the majority of lost habitat will be confined to areas of existing other neutral grassland and bramble scrub within the Biodiversity Net Gain boundary (see Figure 4). Small pockets of retained other neutral grassland will be enhanced to increase their floristic diversity. Habitats outside the Biodiversity Net Gain boundary, including the parcel of semi-natural ancient woodland, will be retained.

Therefore, as shown in Tables 6 and 7, a biodiversity net gain of + 0.12 units (+ 36.99 %) for broad habitats and + 0.67 units (+ 100 %) for hedgerows on site will be achieved; however, the current proposals do not comply with the trading rules, i.e., habitats proposed should be like-for-like or better. Trading down should be avoided, where possible. Ideally, new, or restored habitats should aim to achieve a higher distinctiveness and habitat type, and the same condition or better. Baseline habitats on site, including other neutral grassland and bramble scrub habitats are proposed to be replaced by either habitats of lower distinctiveness or a habitat which is not like-for-like (e.g., developed land; sealed surface). This is calculated as trading down by the Biodiversity Metric.

6. Further Ecological Enhancements

Further ecological enhancements were recommended in aLyne Ecology Ltd Preliminary Ecological Appraisal report, Hawksfold House, Fernhurst, 24.07.2023, Version 001 and the locations of where further ecological enhancements will be installed on site is provided in the Biodiversity Retention, Creation and Enhancement Plan in Figure 4. These enhancements include the following:

- One log pile for invertebrates and reptiles.
- One Schwegler 2F bat boxes.
- One 2GR Schwegler nest box.
- One swift brick.
- One Bee brick.
- One Royal hedgehog houses.

7. Management and Monitoring

The management and monitoring of habitats to be retained, created, and enhanced is crucial to achieving biodiversity net gain. Management and monitoring measures are provided for each habitat in the following sections.

Management and monitoring will be the responsibility of the landscape contractor, appointed by the developer.

7.1 Other Neutral Grassland

The manufacturer's instructions will be followed for management and monitoring of the newly created grassland. This will include removal of annual weed growth and mowing regularly during the first year of establishment, removing arisings, and mowing in rotation in autumn in subsequent years to no lower than 10 cm in height. Fertilisers, pesticides, and herbicides will be avoided.

7.2 Ponds (Non-Priority Habitat)

The pond should have varying depths and scalloped edges. The pond should not be stocked with fish. Barley straw should be used when algae growth forms. Just Add Water (Froglife 2021) provides further details on how to build and manage wildlife ponds. The Great Crested Newt Conservation Handbook (Langton *et al* 2001) should be consulted when managing the pond and surrounding habitats.

7.3 Tree Planting

Planting will take place from October to February, avoiding frozen ground and using an organic peat-free compost. Tubes and stakes will be used to protect the trees and shrubs from grazing animals.

Trees and scrub will be well-watered to aid establishment, for at least one year following planting. In the initial maintenance period (the first three years), the planting area will be kept weed-free using herbicides approved by Natural England (see The Herbicide Handbook - Guidance on the use of herbicides on nature conservation sites, 2003), or by hand.

All new trees and scrub will be checked annually for damage/disease.

At the end of the first growing season, the landscape contractor will mark all dead, dying, and diseased trees, which will be replaced during the following planting season. Dead/dying/diseased trees will be replaced each year.

Watering will be carried out at least once every two weeks during the establishment period of the newly planted trees and shrubs.

Protective fencing/guards will be checked bimonthly for damage/adjustments. Trees will be pruned annually at the end of the growing season (winter months, avoiding the bird breeding season), to facilitate healthy and bushy growth.

7.4 Native Hedgerow

Planting will take place from October to February, avoiding frozen ground and using an organic peat-free compost. Tubes and stakes will be used to protect the hedging plants from grazing animals.

Trees and shrubs will be well-watered to aid establishment, for at least one year following planting. In the initial maintenance period (the first three years), the planting area will be kept weed-free using herbicides approved by Natural England (see The Herbicide Handbook – Guidance on the use of herbicides on nature conservation sites, 2003), or by hand.

All new trees and shrubs will be checked annually for damage/disease.

At the end of the first growing season, the landscape contractor will mark all dead, dying, and diseased trees, which will be replaced during the following planting season. Dead/dying/diseased plants will be replaced each year.

Watering will be carried out at least once every two weeks during the establishment period of the newly planted trees and shrubs.

Protective fencing/guards will be checked bimonthly for damage/adjustments.

Hedgerows will be pruned annually at the end of the growing season (winter months, avoiding the bird breeding season), to facilitate healthy and bushy growth.

Hedgerows will be laid, where possible.

7.5 Bat Boxes

Management of bat boxes is not required. If a bat box is damaged, it will be replaced. Replacement of bat boxes will only be carried out by a licensed bat ecologist.

7.6 Bird Boxes

The boxes will be cleaned once a year during the late autumn/winter period. If any of the bird boxes are damaged, they will be replaced.

7.7 Bee Bricks and Hedgehog Hibernaculum

The invertebrate hibernaculum and hedgehog houses will be checked annually and replaced, where necessary.

7.8 Log Piles

The hibernaculum will be checked annually and replaced, where necessary.

8. References

aLyne Ecology Ltd. (2023) *Hawksfold House, Fernhurst, Preliminary Ecological Appraisal*, Version 001, 20.07.2023.

Baker J. *et al* (2019). *Biodiversity Net Gain. Good Practice Principles for Development. A Practical Guide*. CIRIA.

British Standards Institute (BSI) (2013). *BS42020 - Biodiversity Code of Practice for Planning and Development*. BSI, London.

British Standards Institute (BSI) (2021). *BS 8683 - Process for designing and implementing Biodiversity Net Gain – Specification*. BSI, London.

Collins (2016). *Bat Surveys: Good Practice Guidelines, 3rd edition*. Bat Conservation Trust.

Chartered Institute of Ecology and Environmental Management (2017). *Guidelines for Preliminary Ecological Appraisal. Technical Guidance Series*. CIEEM.

Chartered Institute of Ecology and Environmental Management (2017). *Guidelines for Ecological Report Writing. Technical Guidance Series*. CIEEM.

CIEEM, CIRIA, IEMA (2016). *Biodiversity Net Gain. Good practice principles for development*. CIEEM.

CIEEM, CIRIA, IEMA (2019). *Biodiversity Net Gain. Good practice principles for development. A practical guide, CIRIA C776a. London, 2019*. CIEEM.

Chartered Institute of Ecology and Environmental Management (2019). *Advice Note on the Lifespan of Ecological Reports and Surveys*. CIEEM.

Chartered Institute of Ecology and Environmental Management (2020). *Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK*. CIEEM, Winchester, UK.

Chichester District Council (2021) Chichester District Council Local Plan 2021-2039: Proposed Submission.

Crick, H. *et al* (2020). *Natural England Research Report NERR081. Nature Networks Evidence Handbook*. Natural England.

Department for Environment, Food and Rural Affairs (2011). *Biodiversity 2020: A Strategy for England's wildlife and ecosystem services*. Defra.

Froglife (2021) *Just Add Water: How to Build a Wildlife Pond*, 7th Edition 2021.

HM Government (1981). *Wildlife and Countryside Act 1981 (as amended)*.

HM Government (2000). *Countryside and Rights of Way Act, 2000*.

HM Government (2005) *ODPM Circular 06/05 Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*.

HM Government (2006). *Natural Environment and Rural Communities Act 2006*.

HM Government (2017). *Conservation of Habitats and Species Regulations 2017 (as amended)*.

HM Government (2021). *National Planning Policy Framework*. Department for Communities and Local Government.

HM Government (2021). *Environment Act 2021. Part 6: Nature and Biodiversity*.

JNCC (2011). *UK Biodiversity Action Plan Priority Habitat Descriptions, updated Dec 2011*.

Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), *Great Crested Newt Conservation Handbook*, Froglife, Halesworth.

Natural England (2023). *The Biodiversity Metric 4.0 User Guide, Natural England Joint Publication JP039*.

Natural England (2023). *The Biodiversity Metric 4.0 User Guide, Technical Annex 2 – Technical Information, Natural England Joint Publication JP039*.

One-World Design Architects (2023) *Hawksfold, Proposed Site Plan, 26th May 2023, File Name: 394-21-01, One-World Design Architects*

Stace (2010). *New Flora of the British Isles (third edition)*. Cambridge University Press, Cambridge.

UK Habitat Classification Working Group (2018). *UK Habitat Classification User Manual* at <http://ecountability.co.uk/ukhabworkinggroup-ukhab>

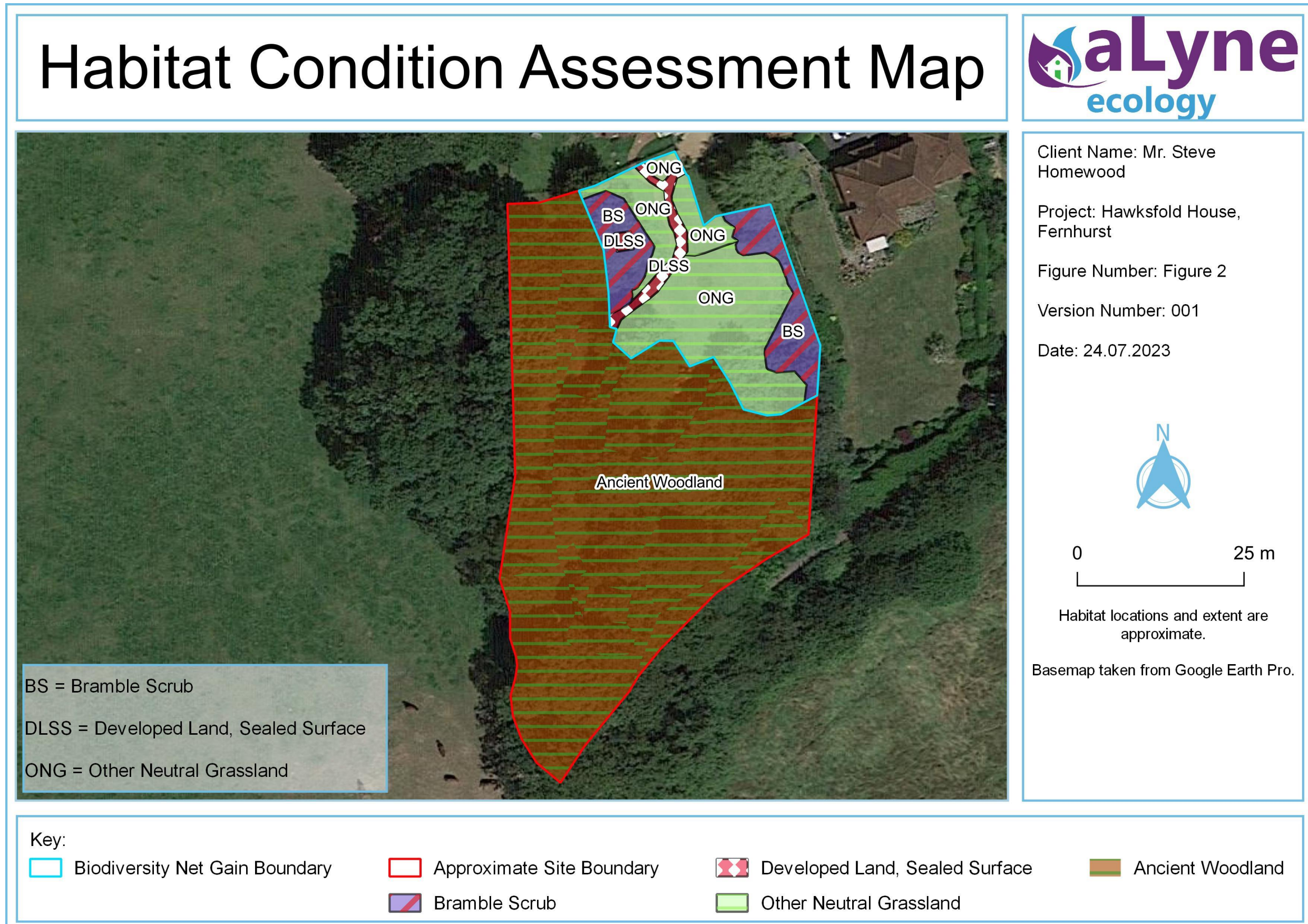
The UK Habitat Classification-V1 (May 2018). UK Habitat Classification Working Group.

The UK Habitat Classification – Habitat Definitions – V1.0 (May 2018). UK Habitat Classification Working Group.

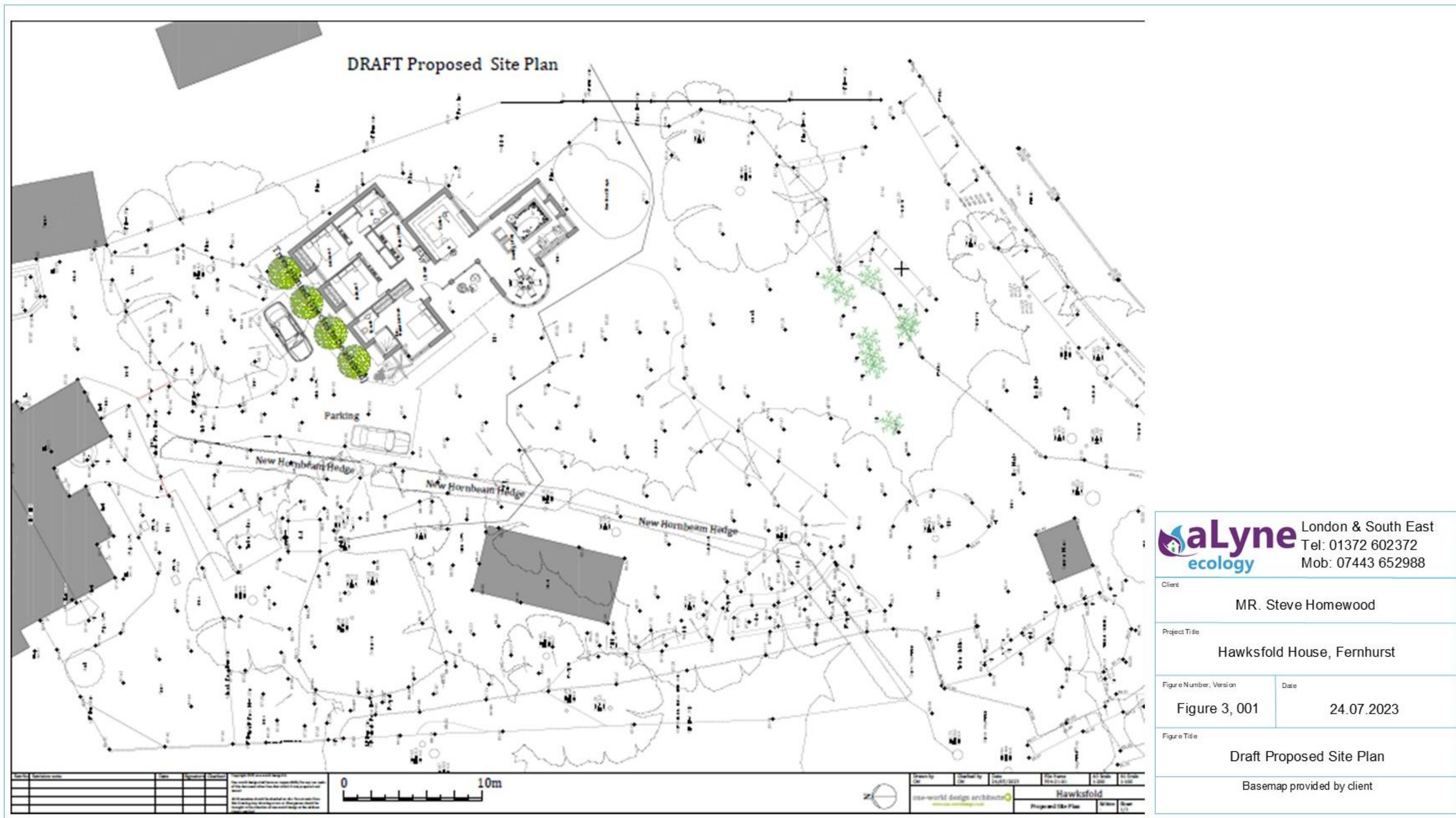
The UK Habitat Classification Field Key (May 2018). UK Habitat Classification Working Group.

Wiltshire Council (2015) *Wiltshire Core Strategy, Adopted January 2015*, Wiltshire Local Development Framework.

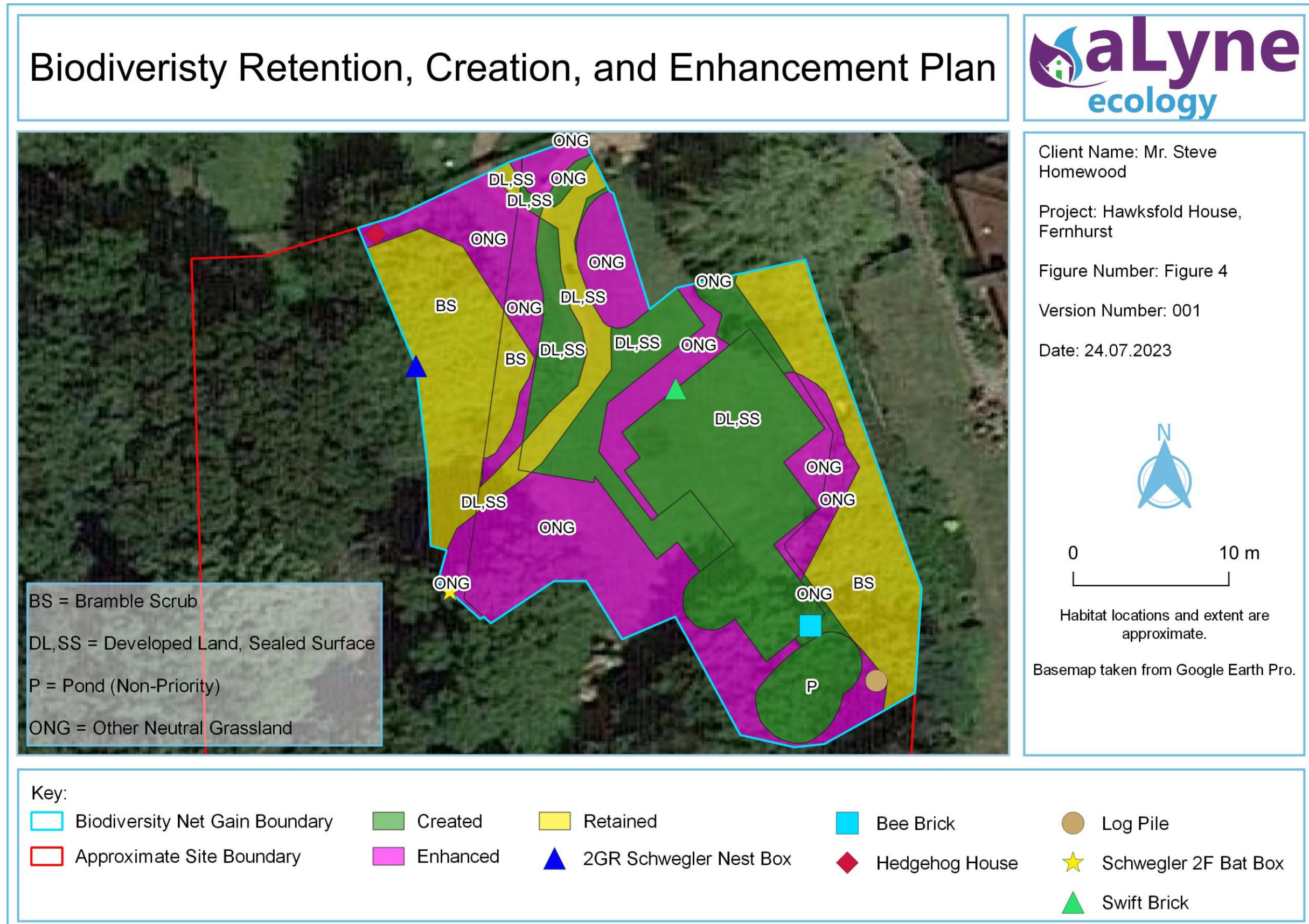
10. Figure 2 – Habitat Condition Assessment Map



11. Figure 3 – Draft Proposed Site Plan



12. Figure 4 – Biodiversity Retention, Creation, and Enhancement Plan



13. Appendix 1 – Biodiversity Net Gain

13.1 Introduction

13.1.1 What is Biodiversity Net Gain?

Biodiversity Net Gain is defined as: “*Development that leaves biodiversity in a better state than before, and an approach where developers works with local governments, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation*” (Baker, 2019). The UK’s Good Practice Principles for Biodiversity Net Gain provides a framework for development projects to show that they are following good practice (see Baker, 2019).

Biodiversity Net Gain has been described as a measurable target for development projects, where impacts on biodiversity are outweighed by a clear mitigation hierarchy approach to first avoid and then minimise impacts, including through restoration and/or compensation. Adhering to these Biodiversity Net Gain principles will help in underpinning good practice for achieving and sustaining Biodiversity Net Gain. Biodiversity compensation should be planned for a sustained net gain over at least the lifetime of the development (often 25-30 years), with the objective of Biodiversity Net Gain management continuing in the future.

Biodiversity Net Gain should be proportionate to the scale of the development and scale of biodiversity impact, fit in with the project’s lifespan and have the appropriate level of detail for the complexity of the Biodiversity Net Gain targets.

13.1.2 Legislation and Policy Drivers

For some time, the requirement to include ecological enhancements in development projects has been supported by the National Planning Policy Framework (NPPF, 2021) and the Natural Environment and Rural Communities (NERC) Act, 2006. Both place a requirement on Local Planning Authorities to thread ecological enhancement requirements through regional and local planning policy.

The forthcoming Environment Bill will make the implementation of Biodiversity Net Gain mandatory for development projects. Part 3(1) of Schedule 15 of the Environment Bill makes it clear that planning authorities will only approve a Biodiversity Net Gain plan if they are satisfied with the following:

1. The existing pre-development biodiversity value of the site is identified.
2. The proposed post-development biodiversity value of the site is as specified in the Biodiversity Net Gain plan.
3. That any required off-site Biodiversity Net Gain is formally registered and allocated and delivers sufficient gain.
4. That any biodiversity credits specified in the plan have been purchased.
5. Overall, the Biodiversity Net Gain objective has been met.

Local Planning Authorities will be required to prepare Local Nature Recovery Strategies (LNRS), which will provide the local framework for the delivery of Biodiversity Net Gain and inform the development planning process. In the meantime, Biodiversity Net Gain plans should be aligned to existing local plan biodiversity targets and Supplementary Planning documents.

13.2 Biodiversity Net Gain Principles

The following principles are taken from Biodiversity Net Gain. Good Practice Principles for Development (CIRIA, 2016).

13.2.1 Principle 1 – Applying the Mitigation Hierarchy

Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.

13.2.2 Principle 2 – Avoid Losing Biodiversity that cannot be Offset by Gains Elsewhere

Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve No Net Loss or Net Gain.

13.2.3 Principle 3 – Be Inclusive and Equitable

Engage stakeholders early, and involve them in designing, implementing, monitoring, and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible and share the benefits fairly among stakeholders.

13.2.4 Principle 4 – Address Risks

Mitigate difficulty, uncertainty, and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.

13.2.5 Principle 5 – Make a Measurable Net Gain Contribution

Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.

13.2.6 Principle 6 – Achieve the Best Outcomes for Biodiversity

Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly justified choices when:

- Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses.
- Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation.
- Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional, and national levels.
- Enhancing existing or creating new habitat.
- Enhancing ecological connectivity by creating more bigger, better, and joined areas for biodiversity.

13.2.7 Principle 7 – Be Additional

Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway).

13.2.8 Principle 8 – Create a Net Gain Legacy

Ensure Net Gain generates long-term benefits by:

- Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity.
- Planning for adaptive management and securing dedicated funding for long-term management.
- Designing Net Gain for biodiversity to be resilient to external factors, especially climate change
- Mitigating risks from other land uses.
- Avoiding displacing harmful activities from one location to another.

- Supporting local-level management of Net Gain activities.

13.2.9 Principle 9 – Optimise Sustainability

Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.

13.2.10 Principle 10 – Be Transparent

Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

13.3 Exclusions

Biodiversity Net Gain does not apply to statutory designated sites (i.e., Sites of Special Scientific Interest – SSSIs) or irreplaceable habitats (i.e., ancient woodlands).

13.4 Biodiversity Net Gain Processes and Pathways

The following is a summary of the process of designing a Biodiversity Net Gain plan, once the feasibility of the plan has been tested, the mitigation hierarchy has been applied to the project and the pre and post development baseline biodiversity of a sites' individual features have been measured.

- Consider and justify choices for delivering Biodiversity Net Gain, including whether to deliver the same or different type of habitat, locating either within or outside of the site, enhancing existing habitats, or creating new habitats, creating more, bigger and better linked habitats, improving the quality of local wildlife sites, optimising social and economic benefits and being additional.
- Deliver like-for-like or better (trading in kind, trading between low distinctiveness habitats, trading carefully between moderate distinctiveness habitats, trading up where possible and appropriate and not trading between high distinctiveness habitats).
- Designing enhancement measures to deliver local biodiversity objectives and achieve net gains in features affected by the development in ways which contribute towards strategic policies.
- Avoid or minimise time-lags between losses and delivery.
- Avoid or minimise risks to delivering Biodiversity Net Gain.
- Measure the predicted net gain for individual habitats using the same metrics throughout.
- Specify timescales for the long-term.
- Develop a Biodiversity Net Gain management and monitoring plan.

13.5 Measuring Biodiversity Net Gain

Defra have produced a biodiversity metric 4.0 (Defra, 2023) to measure Biodiversity Net Gain. The metric is based on the following parameters. Full details can be found in Natural England Joint Publication JP029 – The Biodiversity Metric 4.0 Technical Supplement.

- Habitat condition.
- Distinctiveness.

A summary of these parameters is provided in the following sections:

13.5.1 Habitat Condition

The 'condition' component of quality measures the biological 'working-order' of a habitat type judged against the perceived ecological optimum state for that particular habitat. It is – therefore – a means of measuring variation in quality of patches of the same habitat type (i.e., an 'intra-habitat' quality measure)

rather than a measure of quality between habitat types (i.e., an ‘inter-habitat’ quality measure) – which is assessed through the ‘distinctiveness’ of habitats. Full details of how habitat condition is assessed is provided in Natural England Joint Publication JP029.

13.5.2 Distinctiveness

In biodiversity metric 4.0 habitats have been assigned to distinctiveness bands based on the following criteria of distinguishing features:

- Total amount of remaining habitat in England (its rarity).
- Percentage of habitat protected in SSSI: where less is protected in SSSI’s, it is considered of higher distinctiveness.
- UK Priority Habitat Status: Priority Habitats area classed as High or Very High.
- European Red List Categories for the habitat.

Distinctiveness categories are as follows:

Distinctiveness Band	Criterion Threshold
Very High Distinctiveness	Small amount of remaining habitat with a lot of it unprotected by designation. Endangered or Critical European red List habitats.
High Distinctiveness	Remaining Priority Habitats not in very high distinctiveness band & other red list of habitats.
Medium Distinctiveness	Non-Priority Habitats with significant wildlife benefit and 1 replaceable Priority Habitat (Arable field Margins).
Low Distinctiveness	Agricultural and Urban land use of lower biodiversity value.
Very Low Distinctiveness	Urban – with artificial structure which are un-vegetated, unsealed surface or built linear features of very low biodiversity value.

13.5.3 Strategic Significance

The following options are available in the Biodiversity Metric 4.0 for Strategic Significance:

- Within area formally identified in local strategy (high strategic significance).
- Local ecologically desirable, but not in local strategy (medium strategic significance).
- Area/compensation not in local strategy/no local strategy (low strategic significance).

13.6 Management and Monitoring

Costed management and monitoring plans are essential to the success of Biodiversity Net Gain. Plans should keep track of timing, extent, quality, and condition.

The purpose of monitoring is to determine success or failure, gives an early warning system when aspects of management are not working and provides an opportunity to plan for remedial measures (adaptive management). Monitoring needs to take into consideration frequency, duration, timing and costs. The results of monitoring need to be clearly documented.

Management and monitoring plans should set out activities over at least 5 years, with objectives for the longer-term.

The responsibility for management can fall to the main contractor, a broker, a local stakeholder or a third-party company.

14. Appendix 2 – Habitat Condition Assessments

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Lowland calcareous grassland			
Grassland - Lowland dry acid grassland			
Grassland - Lowland meadows			
Grassland - Other lowland acid grassland			
Grassland - Other neutral grassland			
Grassland - Tall herb communities (H6430) [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as 'Other neutral grassland'] [Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.]			
Grassland - Upland acid grassland			
Grassland - Upland calcareous grassland			
Grassland - Upland hay meadows			
Sparsely vegetated land - Calaminarian grassland			
Site name and location	Hawksfold House, Fernhurst	On-site or off-site	On-site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference	SU 8921 2857	Habitat parcel reference	ONG
Habitat Description			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	No	Grassland is closely mown with no one species dominating
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed	No	Grassland is closely mown
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	Yes	No large areas of bare ground present
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Yes	No bracken present
E	Combined cover of species indicative of sub-optimal condition ² and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) are present, this criterion is automatically failed.	No	Creeping buttercup, creeping thistle, greater plantain, and white clover recorded on the grassland
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	No	Not more than 10 vascular plant species recorded within 1 m ²
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		No	
Number of criteria passed		2	

Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓	
Acid Grassland Types (Result out of 5 criteria)			
Passes 5 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)		
Passes 2 or fewer criteria	Poor (1)		
Non-acid grassland Types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)		
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)		
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)	Y	
Suggested enhancement interventions to improve condition score			
Notes			
<p>Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.</p> <p>Footnote 2 - Species indicative of sub-optimal condition for this habitat type include: creeping thistle <i>Cirsium arvense</i>, spear thistle <i>Cirsium vulgare</i>, curled dock <i>Rumex crispus</i>, broad-leaved dock <i>Rumex obtusifolius</i>, common nettle <i>Urtica dioica</i>, creeping buttercup <i>Ranunculus repens</i>, greater plantain <i>Plantago major</i>, white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i>. There may be additional relevant species local to the region and or site.</p> <p>Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.</p> <p>Footnote 4 – Wildlife and Countryside Act 1981 (as amended).</p>			