



Biodiversity Net Gain Assessment

Shelley College

Huddersfield Road, Shelley, Huddersfield

June 2023

Prepared for: Sports Labs

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This document is intended to be read in conjunction with the Preliminary Ecological Appraisal, Verity Webster Ltd., January 2022 and the Biodiversity Metric 4.0 Calculation Tool for Shelley College.



EXECUTIVE SUMMARY

- The survey site at Shelley College is composed of hard standing, modified grassland, broadleaf woodland, a tree line and hedgerow.
- The construction of an artificial sports pitch will result in the loss of 0.2ha of modified grassland, which translates to the loss of 0.88 Area Habitat Units.
- To achieve 10% biodiversity net gain in area habitat and linear habitat, enhancement of the site is proposed.
- 2ha of modified grassland will be enhanced from moderate to good condition under a management regime that will create varied sward height and increased species richness. 0.1ha of modified grassland will be enhanced to woodland through the planting of native tree and shrub species. These changes will result in 10.05% net gain in Area Habitat Units.
- The planting of 53m of native species hedgerow will result in 24.64% net gain in Hedgerow Units. Habitat creation and management recommendations have been made. Management over the next 10-15 years will be necessary to encourage that habitats to reach best possible condition, with review of the management regime every 5 years.

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Ecology and Protected Species Consultancy

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1. Introduction

1.1 Application Site

- 1.1.1 This report details a Biodiversity Net Gain Assessment of land at Shelley College, Huddersfield Road, Shelley Woodhouse, Huddersfield, HD8 8NL. Ordnance Survey grid reference (centre of site): SE 2211 1056.
- 1.1.2 Sports Labs commissioned Verity Webster Ltd to undertake a Biodiversity Net Gain Assessment in order to inform the proposals for the site.

1.2 Objectives

- 1.2.1 The objectives of the Biodiversity Net Gain Assessment are to determine:
- Potential for enhancement or compensation (offsetting) on the site for protected species, habitats of conservation interest and overall biodiversity with the aim of achieving 10% net gain in biodiversity.

1.3 Proposals

- 1.3.1 The proposals for the site comprise the construction of an artificial sports pitch on grounds to the southwest of the school building complex.

1.4 Ecologist

- 1.4.1 The Ecological Assessment was undertaken by Verity Webster. Verity is a Chartered Ecologist and a full member of the Chartered Institute of Ecology and Environmental Management.
- 1.4.2 Verity has worked as an ecological consultant since 2007. She has undertaken Ecological Assessments and protected species surveys for a large variety of projects and schemes, producing the required impact assessment and subsequent mitigation schemes and method statements when necessary.



2. Site Location

- 2.1.1 Shelley College is located in a semi-rural location between Shelley Woodhouse and Skelmanthorpe, Huddersfield.
- 2.1.2 The College is located to the south of Huddersfield Road, which runs northwest to southeast. Shelley Woodhouse Lane runs north to south along the western boundary of the college grounds and approximately 50m west of the proposed development site.
- 2.1.3 The Kirkees Light Railway runs southwest to northeast approximately 250m to the northwest of the College. The railway forms a habitat corridor of woodland through the countryside and built-up landscape.
- 2.1.4 There are houses with gardens immediately to the northeast of the college, but to the south and southeast beyond Shelley Woodhouse Lane, and to the north and northwest beyond Huddersfield Road there is open countryside comprising arable land and pasture divided by tree lines and hedgerows.
- 2.1.5 There are scattered waterbodies throughout the landscape and small brooks.
- 2.1.6 Overall, the site is in an area with moderate to high suitability for wildlife including protected species.

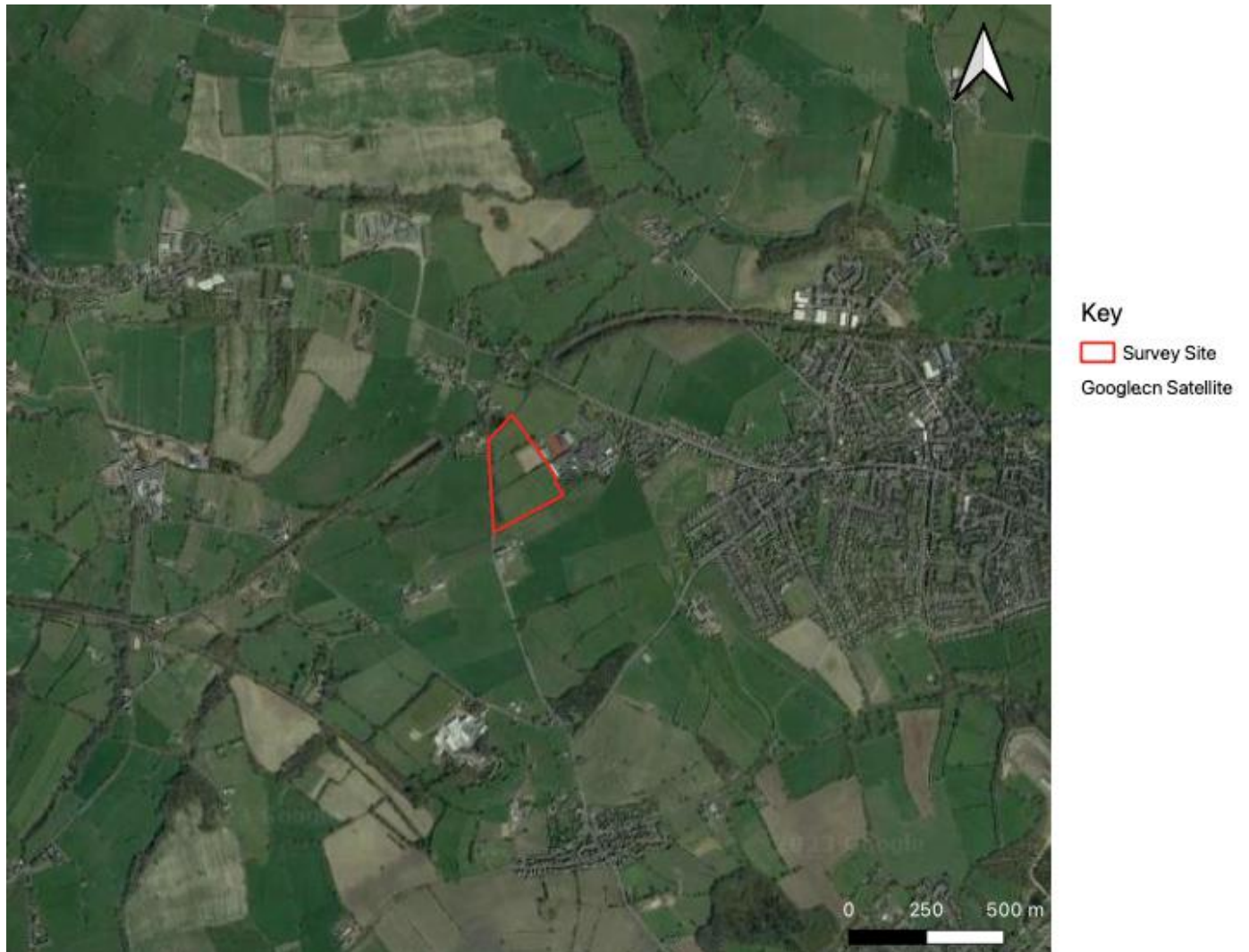


Figure 1: Ordnance Survey Map Showing the Location of the Proposed Development Site.





Figure 2: Aerial Image of the Survey Site in Relation to the Surrounding Habitats





3. Site Description

- 3.1.1 Shelley College comprises a complex of buildings to the northeast of the site, just south of Huddersfield Road, with playing fields to the southwest, between the buildings and Shelley Woodhouse Lane.
- 3.1.2 The survey site comprises the land to the southwest of the building complex and one building on this southwestern side of the site closest to the proposed development.
- 3.1.3 The survey site encompasses an area of hard standing (gravel) and amenity grassland with a tree line to the northwest, a hedgerow to the south and a wooded boundary to the east along Shelley Woodhouse Lane.
- 3.1.4 The building is a single-storey brick structure with a flat, metal roof and metal fascia.



Looking northwest across the survey site



Looking west towards the woodland boundary



4. Habitats

4.0.1 The BNG survey site supports the following habitat types as described by UK Habitat Classification (UK Hab, 2023). See Figure 3:

- Modified Grassland G4, secondary code 66 (frequently mown) – 3.8ha
- Broadleaf woodland W1g7 – 0.88ha
- Hard standing/sealed surface – 0.52ha
- Native species hedgerow H2a – 0.16km
- Tree line (broadleaved) – 0.1km

Modified Grassland

4.0.2 The grassland is composed of species typical of this managed, improved (nutrient enriched) habitat. Grasses, which are dominant and form over 75% of cover, include Yorkshire fog (*Holcus lanatus*), false oat-grass (*Arrhenatherum elatius*), rye grass (*Lolium perenne*), cock's-foot grass (*Dactylus glomerata*) and creeping bent-grass (*Agrostis stolonifera*). Herbs are occasional and include ribwort plantain (*Plantago lanceolata*), daisy (*Bellis perennis*), white clover (*Trifolium repens*), dandelion (*Taraxacum agg.*), meadow buttercup (*Ranunculus acris*) and yarrow (*Achillea millefolium*). Broad-leaved dock (*Rumex obtusifolius*), common hogweed (*Heracleum sphondylium*) and spear thistle (*Cirsium vulgare*) are also present in the longer grassland along with cut-leaved crane's-bill (*Geranium dissectum*) and bush vetch (*Vicia sepium*).



Modified Grassland

4.0.3 The grassland is regularly mown, as would be expected in a school grounds, but with longer grassland around the boundaries and on the slope to the west of the area of sealed ground.

4.0.4 **With reference to the Condition Assessment Sheet (BNG 4.0) this habitat is considered to be of 'moderate' condition owing to the poor variation in sward height. Management to a varied sward would increase the condition in some areas to 'good'.**

Broadleaf Woodland

4.0.5 The woodland along the west and northwest boundary is composed mainly of broadleaf trees with a Corsican pine (*Pinus nigra*). Along the western boundary ash (*Fraxius excelsior*) is dominant, with aspen (*Populus tremuloides*), pendulous birch (*Betula pendula*) and occasional beech (*Fagus sylvatica*). Hawthorn (*Crataegus monogyna*) is occasional in the understorey. Along the northwest boundary there is occasional alder (*Alnus glutinosa*) with birch and stretches of hawthorn.



Broadleaf Woodland Boundary



- 4.0.6 The age range of the species is quite varied along the length of the woodland strip, with open areas, providing heterogeneity.
- 4.0.7 **With reference to the Condition Assessment Sheet (BNG 4.0) this habitat is considered to be of 'moderate' condition owing to the poor variation in age (i.e no saplings).**

Tree Line

- 4.0.8 The tree line is composed predominantly of sycamore (*Acer pseudoplatanus*) with elm (*Ulmus* sp.), rowan (*Sorbus aucuparia*), pendulous birch, whitebeam (*Sorbus aria*), oak (*Quercus* sp.), beech and smaller hawthorn.
- 4.0.9 **With reference to the Condition Assessment Sheet (BNG 4.0) this habitat is considered to be of 'moderate' condition owing to gaps in the tree line and managed grassland around the trees. Planting of additional trees and creating a 6m buffer of grassland each side would increase the condition to 'good'.**

Hedgerow

- 4.0.10 The hedgerow along the southeast boundary is composed of hawthorn with cleavers (*Galium aparine*), bramble (*Rubus fruticosus*) and bush vetch at the base.
- 4.0.11 **With reference to the Condition Assessment Sheet (BNG 4.0) this habitat is considered to be of 'poor' condition owing to nutrient enrichment and little undisturbed ground either side of the hedgerow. Planting of additional intermediary shrubs and creating a 1m buffer of grassland each side could increase the condition to 'good'.**



Native Species Hedgerow

**Figure 3: The Survey Site and Associated Habitats**



5 Legislation

5.0 Planning Policy and Legislation

- 5.0.1 Under the NERC Act 2006, planning authorities are obliged to make sure that they have all the information on the presence of protected species on site before they make a decision on the planning permission.
- 5.0.2 The National Planning Policy Framework (NPPF) encourages Local Planning Authorities to conserve and enhance biodiversity.

Chapter 15, Para 174 of NPPF states: *"The planning system should contribute to and enhance the natural and local environment by:*

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils....*
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures".*

Para 175 states: *"Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries."*

Para 179 identifies that plans should do the following to protect and enhance biodiversity and geodiversity:

- a) "Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and**
- b) Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and peruse opportunities for securing measurable net gains for biodiversity."**

Para 180 states that *"when determining planning applications, local authorities should apply the following principles:*

- a) if significant harm to biodiversity from a development cannot be avoided...,adequately mitigated, or, as a last resort compensated for, then planning permission should be refused"*
- b) Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
- c) Development result in the loss of deterioration of irreplaceable habitats (such as ancient woodland or ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensatory strategy exists; and*
- d) Development whos primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.*



Para 182 states “the presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site is being planned or determined.”

- 5.0.3 The local planning authority has a responsibility, therefore, to obtain all information regarding the potential for protected species on a site prior to making a decision about a proposal.

6 Methodology

6.0 Biodiversity Net Gain Assessment

- 6.0.1 Biodiversity Offsetting was developed by Defra. The pilots of the study were first published in 2012.
- 6.0.2 The Biodiversity Calculator is a system created by Defra to quantify change in biodiversity of a site in biodiversity units.
- 6.0.3 *The Biodiversity Offsetting Pilots: Guidance for Developers* (Defra, 2012) details the original metric for calculating biodiversity loss or gain as a result of development proposal.
- 6.0.4 *The Biodiversity Metric 4.0* (Natural England, 2023) and the associated guidance was used to assess the habitat condition and calculate potential change in biodiversity within the survey site.
- 6.0.5 The calculation of change in biodiversity units has been based upon areas provided by HNA architects.



7 Biodiversity Net Gain Assessment

7.0 Baseline condition and potential impacts on Biodiversity

Offsetting and the Biodiversity Calculator

- 7.0.1 The baseline condition of the habitat and the predicted change as a result of the proposals has been assessed with the use of the Biodiversity Offset principals.
- 7.0.2 Biodiversity offsetting principal: What is it?
- “Using the biodiversity offsetting approach means that an offset provider delivers quantifiable amount of biodiversity benefit to offset the loss of the biodiversity resulting from the development. The losses and gains are measured in the same way, even if the habitats concerned are different. In the biodiversity offsetting pilot, the measurement is done in ‘**biodiversity units**’, which are the product of the **size of an area**, **the distinctiveness** and **the condition** of the habitat it comprises. The assessment of biodiversity units lost and gained can be calculated” (Defra, 2012).
- 7.0.3 The Biodiversity Calculator is a system created by Defra to quantify change in biodiversity of a site in biodiversity units. The current calculator is known as Biodiversity Metric 4.0 (Natural England, 2023).
- 7.0.4 This quantitative assessment will be considered in relation to the other qualitative ecological functions of the site in order to assess the impact (i.e. functionality for protected species), but is a useful tool to show predicted or potential loss of habitat, change in condition and enhancement (net gain).

Distinctiveness of the Habitat

- 7.0.5 Habitat types are described in Section 2.1. Under the Biodiversity Calculator principals each habitat is categorised into a distinctiveness band.
- 7.0.6 The distinctiveness of the habitat is based upon parameters such as species richness, diversity, rarity (at local, regional, national and international scales) and the degree to which a habitat supports species rarely found in other habitats (Treweek *et al*, 2010)
- **Modified grassland has low distinctiveness** as the habitat is common and widespread, composed of common plant species and highly managed.
 - **Broadleaved woodland has medium distinctiveness** as the habitat is of conservation value for a variety of wildlife.
 - **Tall Herb and Fern have HIGH distinctiveness** due to the valuable mosaic of microhabitats provided to other taxa.



- **Other Lowland Mixed Deciduous Woodland has HIGH distinctiveness** as the habitat is of high conservation value and will support a variety of wildlife.
- **Developed Land, bare ground has low distinctiveness.**

Habitat Condition Assessment

7.0.7 The condition of each habitat can be categorised as low, moderate or good and is based upon the Habitat Condition Assessment Sheets within the Biodiversity Metric 4.0 guidance. See Section 2.1. The assessment sheets can be seen in Appendix 1.

- Modified Grassland G4, secondary code 66 (frequently mown) – Moderate Condition
- Broadleaf woodland W1g7 – Moderate Condition
- Hard standing/sealed surface – Condition not applicable
- Native species hedgerow H2a – Moderate Condition
- Tree line (broadleaved) – Poor Condition

7.1 Losing and Gaining Biodiversity Units

- 7.1.1 The EU is committed to halt the loss of biodiversity and the degradation of ecosystem services by 2020. The Biodiversity Strategy sets out 6 targets and 20 specific actions geared towards this overall objective. Action 7 is to ensure no net loss of biodiversity and ecosystem services.
- 7.1.2 The 'mitigation hierarchy' is included with current planning policy, aiming to halt the loss of biodiversity. The National Planning Policy Framework, consolidating planning guidance states that '*if significant harm cannot be avoided, adequately mitigated, or as a last resort, compensated for, planning permission should be refused*'.
- 7.1.3 Defra's biodiversity offsetting pilot was developed to address this requirement and ensure development, economic growth and biodiversity conservation are compatible (British Ecological Society, 2013)
- 7.1.4 Biodiversity net gain, as a good practice principal, has been developed by Ciria, CIEEM and IEMA (2016). At the very least developments should aim for no net loss as part of the proposals.
- 7.1.5 The associated Biodiversity Metric 4.0 Calculation Tool shows the areas of habitat at baseline and following development:

At baseline there is a total of 24.46 on-site biodiversity units. A total of 0.88 units will be lost as a result of the development.

7.1.6 The following habitats will be lost:

- **Loss of 0.2ha of Modified grassland**

7.1.7 A total of 12.56 habitat units will be delivered through the enhancement of:

- **Modified grassland (3.7ha) from moderate to good condition**



- **Modified grassland (0.1ha) to broadleaf woodland of moderate condition**

7.1.8 Note that hedgerows, being linear, are treated differently to 'area' or habitat units. Units calculated for linear features are separate.

7.1.9 Given that there are linear habitats present at baseline (tree line and hedgerows) it is necessary to attain 10% net gain in linear habitats even though there is no loss of linear habitats. A gain of 0.2 hedgerow units will be achieved though:

- **Planting of 0.053km of native species hedgerow.**

7.2 Enhancement and Creation of Habitats and Linear Features On-Site.

7.2.1 The following habitats are to be enhanced (created) on site (see Figure 4):

- **Modified grassland of good condition**
This will involve enhancing 2ha of grassland.
- **Planting of native-species broad-leaved woodland**
This will take place on an area of 0.1ha

7.2.2 The following linear features are to be created on site:

- **Planting of native-species hedgerow**
A length of 0.053km will be planted.

7.2.3 A suitable habitat management plan to facilitate this enhancement and habitat creation will be necessary.



Location of proposed hedgerow planting

**Figure 4 – Proposed Habitat Enhancement and Creation On-Site**



Enhancement of Modified Grassland

7.2.4 Modified grassland will be enhanced in an area of 2ha. across the site (see Figure 4). Meadow will provide valuable habitat for great crested newts and other wildlife on site. Creation of this habitat will involve development of a mosaic of grassland sward managed as meadow:

- The areas of enhanced modified grassland will be cut *once per year* in August/September and if possible, arisings removed after being left to dry and to allow dispersal of seed.
- Patches of the grassland can be cut more regularly to create shorter openings and pathways. A maze effect could be created such that it would be aesthetically pleasing and of value to wildlife, retaining interest for students.
- A native species seed mix such as those from Emorsgate Seeds (www.wildseed.co.uk) will be sown across patches the grassland to encourage biodiversity. Small patches of the ground should be scoured with a rake or similar prior to sowing to encourage growth. Seed is best sown in autumn or spring. Most of the mix will be perennial and will likely not flower in the first year.



Grassland maze



Pathways mown through long grassland to create mosaic



- 7.2.5 It is proposed that a mix of EM2 (standard general purpose meadow mixture) is sown in the scoured patches.

EM2 – meadow mixture to enhance wildflower areas.	Wildflowers: Yarrow (<i>Achillea millefolium</i>), common knapweed (<i>Centaurea nigra</i>), lady's bedstraw (<i>Galium verum</i>), oxeye daisy (<i>Leucanthemum vulgare</i>), birdsfoot trefoil (<i>Lotus corniculatus</i>), ribwort plantain (<i>Plantago lanceolata</i>), hoary plantain (<i>Plantago media</i>), cowslip (<i>Primula veris</i>), selfheal (<i>Prunella vulgaris</i>), meadow buttercup (<i>Ranunculus acris</i>), bulbous buttercup (<i>Ranunculus bulbosus</i>), yellow rattle (<i>Rhianthus minor</i>), common sorrel (<i>Rumex acetosa</i>), red clover (<i>Trifolium pratense</i>) Grasses: Common bent (<i>Agrostis capillaris</i>), crested dogtail (<i>Cynosurus cristatus</i>), red-fescue (<i>Festuca rubra</i>) and small cat's-tail (<i>Phleum bertolonii</i>) This species mix is available from Emorsgate Seeds (EM2 – Standard general purpose meadow mixture). (www.wildseed.co.uk) Mix specification is 4g/m²
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Planting of Broad-leaved Woodland

7.2.6 Broad-leaved woodland will be created, enhancing the area of 0.1ha of modified grassland (see Figure 4). This will extend the existing woodland. Lowland broadleaf woodland is a Habitat of Principle Importance under the NERC Act, 2006 and provides habitat for a variety of wildlife. Over 10 years the woodland is expected to reach good condition.

7.2.7 This woodland will comprise the planting of native tree and shrub whips. Refer to Table 1 below:

- Pendulous birch (*Betula pendula*)
- Beech (*Fagus sylvatica*)
- Sessile Oak (*Quercus petraea*)
- Rowan (*Sorbus aucuparia*)
- Holly (*Ilex aquifolium*)

To create this habitat

7.2.8 Preparation of the ground for new hedgerows, shrubs and trees is important to ensure the health and long-term success of the hedgerow:

- The grassland in this area should not be mown, to encourage development of scrub and growth of naturally sown tree saplings.
- Remove existing ground vegetation where trees/shrubs are to be planted
- Dig over the soil
- Ensure newly planted hedgerows are protected from trampling by people and machinery by using fencing
- Use mulch around and between the base of new plants to prevent growth of competitive grasses.
- Whips of native-species trees will be planted at 4m spaced intervals to encourage development of woodland.
- Planting season is from mid-November – mid-March.

Sourcing plants

- The Woodland Trust are currently providing free tree and hedgerow packs for schools and communities: <https://www.woodlandtrust.org.uk/plant-trees/schools-and-communities/>
- Ideally, plants should be sourced from local garden centres within 20km of the site.
- Shrubs and trees should be bought in 5L pots and will be 60-80cm in height.
- Pots are recommended over bare root-produce, as bare roots require planting immediately.

Shrub and tree aftercare

- Suppression of weed growth may be required to prevent smothering of the new shrubs or trees.
- It may be necessary to replace trees or shrubs the following season if some plants have not taken.



- Growth of the shrubs should be trimmed back by half in the first 2 years or, if for landscape purposes, only as required.
- The trees and shrubs will not be established for 3-5 years.

Hedgerow (linear) habitats created on-site

- 7.2.9 Creation of 53m of native species hedgerow will ensure a net gain in hedgerow units. The desirable condition is 'moderate'. The creation of linear habitat will ensure that the heterogeneity of habitat on site is improved.
- 7.2.10 A hedgerow would provide opportunities for nesting and foraging birds, foraging bats, amphibians and small mammals, as well as providing a wildlife corridor. Hedgerows are a Habitat of Principle Importance under the NERC Act, 2006.
- 7.2.11 The native species hedgerow will be composed of the species listed in Table 1:

Table 1: Hedgerow Species

<i>Species</i>	<i>Latin</i>	<i>Density of boundary planting</i>
Hawthorn	<i>Crataegus monogyna</i>	70%
Holly	<i>Ilex aquifolium</i>	20%
Rowan	<i>Sorbus aucuparius</i>	Complementary (occasional) only
Hazel	<i>Corylus avellana</i>	Complementary (occasional) only

To create this habitat

- 7.2.12 Preparation of the ground for new hedgerows, shrubs and trees is important to ensure the health and long-term success of the hedgerow:
- Remove existing ground vegetation where trees/shrubs are to be planted
 - Dig over the soil
 - Ensure newly planted hedgerows are protected from trampling by people and machinery by using fencing
 - Use mulch around and between the base of new plants to prevent growth of competitive grasses.
 - Hedgerow whips should be planted in a double staggered row 30-40cm apart, with the two rows 50cm apart. There should be approximately 7 plants per meter.
 - Planting season is from mid-November – mid-March.



Sourcing plants

- The Woodland Trust are currently providing free tree and hedgerow packs for schools and communities: <https://www.woodlandtrust.org.uk/plant-trees/schools-and-communities/>
- Ideally, plants should be sourced from local garden centres within 20km of the site.
- Shrubs and trees should be bought in 5L pots and will be 60-80cm in height.
- Pots are recommended over bare root-produce, as bare roots require planting immediately.

Hedgerow Aftercare

- Suppression of weed growth may be required to prevent smothering of the new hedgerow plants.
- It may be necessary to interplant the hedgerow the following season if some plants have not taken.
- For the first three years the hedgerow should be trimmed back to encourage low lateral growth of branches.
- Growth of the hedgerow should be trimmed back by half in the first 3 years.
- The hedgerow will not be established for 3-5 years.
- Ideally the new hedgerows will establish to be 2-3m in height with an A-shaped profile. This allows for maximum sun exposure and can be cut with a flail mower.
- After 3-5 years the new hedgerows can be treated as 'established' hedgerows.

Management for Established Hedgerows

- Hedgerows should be cut back in the winter months January– February to avoid conflicts with nesting birds.
- Each side of the hedgerow should be pruned alternatively, every 2 years, with the top cut in association with one side only so also cut every 2 years.
- If possible the hedgerows should be trimmed into an A-shaped profile to encourage maximum sunlight and growth.
- Grassy margins will be allowed to establish approx. 1m wide (or wider) along the base of the hedgerows.



Table 2: Management of Hedgerows / Boundary Planting From Year 1-5

Hedgerow Type	Year 1	Year 2	Year 3	Year 4	Year 5
New Hedgerows: Shrubs only	Plant new plants. Suppress weeds	Replace where necessary. Prune back new growth 50%	*Prune back new growth 50%	Avoid pruning – only if necessary	Prune one side only and follow management for Established Hedgerows
Established Hedgerows	Once established hedgerows should ideally be pruned on each side in alternative years to allow growth and protection for wildlife. The top of the hedgerow can be trimmed annually.				

*Pruning should take place in autumn to avoid bird-nesting season unless it is evident (for example when plants are very young) that no birds are nesting or if a nesting bird check has been undertaken by a suitably qualified individual.

7.3 Percentage Change in Biodiversity Units: Conclusion

7.3.1 **Overall, with the proposed enhancement of habitats on site, and the creation of additional hedgerow, there will be a 10.05% gain in Habitat Units and a 24.64% gain in Hedgerow Units. Trading rules are satisfied.**

7.3.2 **Management over the next 10-20 years will be necessary to encourage that habitats to reach best possible condition, with review of the management regime every 5 years.**



Appendix 1 – Condition Assessment Sheet for Modified Grassland.

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	Y	There are frequently 6 species present in the areas of longer grassland
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 vertebrates and invertebrates to live and breed.	N	
C	Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	N	
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Y	
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Y	
Essential criterion achieved (Yes or No)			Yes
Number of criteria passed			5
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 6 or 7 criteria including passing essential criterion A	Good (3)		
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)		
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	Y	
Suggested enhancement interventions to improve condition score			



Condition Assessment Sheet for Woodland

Condition Assessment Criteria					
Indicator	Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)
A Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	2	
B Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3	
C Invasive plant species	No invasive species ³ present in woodland.	<i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	<i>Rhododendron</i> or cherry laurel present, or other invasive species ³ >10% cover.	3	
D Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	3	
E Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	3	
F Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	3	
G Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	2	



Condition Assessment Sheet for Tree Line

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	At least 70% of trees are native species.	Y	
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	N	
C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	Y	
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice ² .	N	
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Y	
		Number of criteria passed	
Condition Assessment Result (out of 5 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 5 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)	Yes	
Passes 2 or fewer criteria	Poor (1)		
Suggested enhancement interventions to improve condition score			
Increase in score could be achieved by planting trees in the gap of the tree line and extending the tree line and creating undisturbed herb/grassland within the 6m on each side of the tree line.			
Footnotes			



Condition Assessment Sheet for Hedgerow

Core groups - applicable to all hedgerow types				
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	Y
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	Y
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Y
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length; - Measured from outer edge of hedgerow; and - Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	N
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	N



D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ .	Y	
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting).	Y	
Additional group - applicable to hedgerows with trees only					
E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	N	
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	Y	
The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the metric. The scores for each are set out in the tables below.					
Condition categories for hedgerows without trees					
Category	Category Requirements	Metric Score			
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3			
Moderate	No more than 4 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and C2 = Moderate condition).	2			
Poor	Fails a total of more than 4 attributes; OR <u>Fails both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition).	1			
		Score achieved:	1		
Condition categories for hedgerows with trees					