

APPLIED ECOLOGY

Shurgard, Hampton

Biodiversity Net Gain Assessment

Produced for Shurgard UK Ltd

By Applied Ecology Ltd

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1 Introduction

Background

- 1.1 In June 2023, Applied Ecology Ltd (AEL) was commissioned by Shurgard UK Ltd to carry out a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) of land at Oldfield Road, Hampton, in the London Borough of Richmond upon Thames ("the Site"). A plan showing the location of the Site is provided in **Figure 1.1**.
- 1.2 The PEA and PRA, which are reported in full elsewhere¹, were required in order to determine the likely ecological constraints associated with a proposal for the construction of a self storage facility within the Site ("the Development"), and to establish the potential scope of any further, more detailed ecological surveys which may be needed to support a planning application in this respect.
- 1.3 The PEA and PRA found no features of notable ecological importance on the Site, although recommendations were made regarding construction phase measures which may need to be taken in order to ensure compliance with the legislation which protects nesting birds. However, a number of suggestions were also made with respect to opportunities within the Site for ecological enhancement, which could subsequently form part of the evaluation of scheme compliance with Biodiversity Net Gain (BNG) requirements now mandatory in England.

Purpose of this report

- 1.4 This report provides details of the biodiversity features associated with the Development, and an assessment of how these will deliver net gain. It includes an outline of the methodology adopted, a description of the findings, and an evaluation of the Development's compliance with statutory BNG requirements. The official MS Excel version of the Metric is available under separate cover.

Report qualification

- 1.5 The assessment described here was undertaken in accordance with the best practice methodologies current at the time of commissioning. Site circumstances, scientific knowledge or methodological requirements can change during the course of a project, and these external factors may impact on the scope of subsequent work requirements.
- 1.6 All survey work and reporting were undertaken by experienced and qualified ecologists in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management (CIEEM), as well as guidance provided by Defra², and that contained in BS 42020:2013 (Biodiversity).

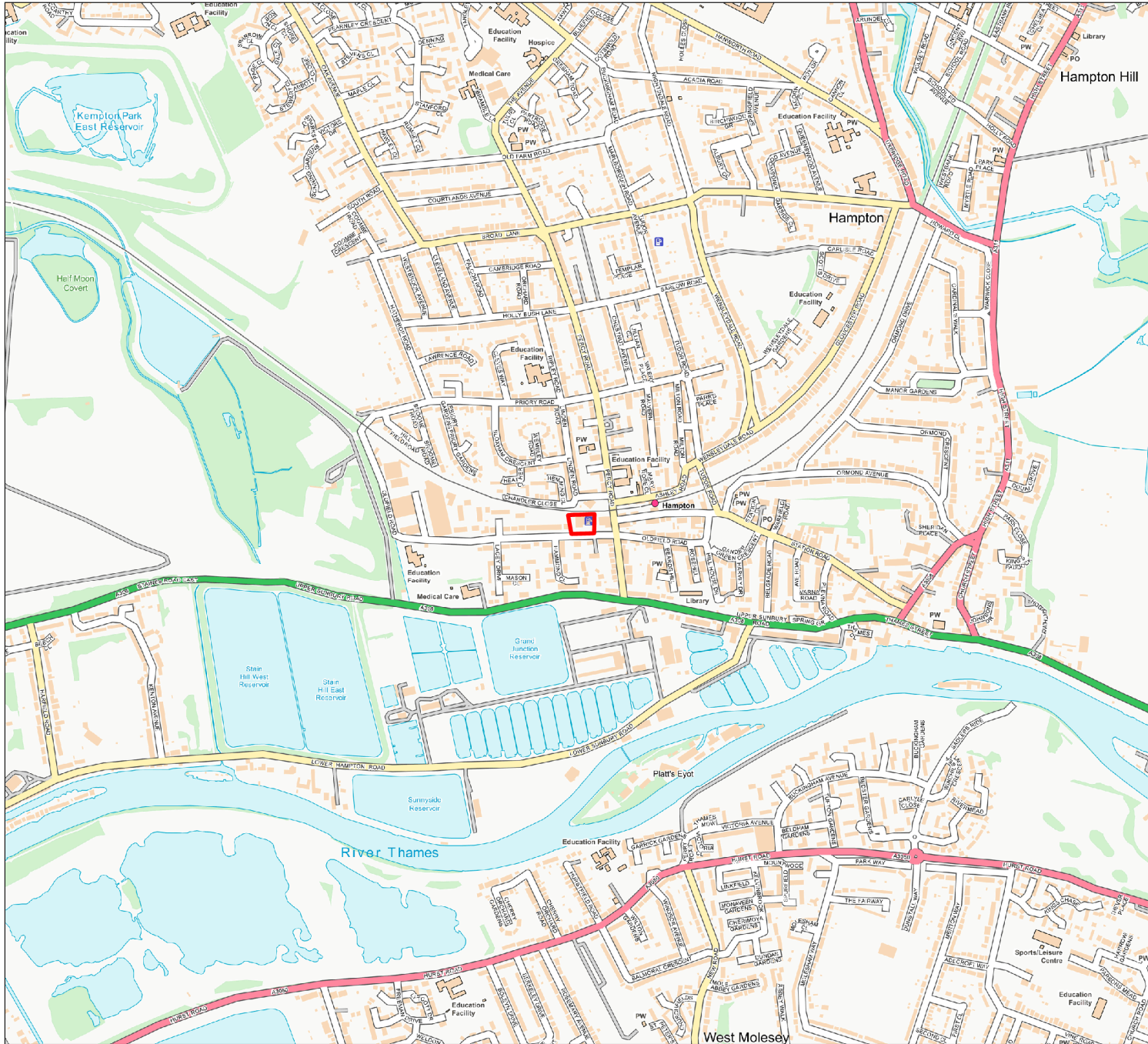
¹ **AEL (2023)** Shurgard, Hampton – Preliminary Ecological Appraisal and Preliminary Roost Assessment. Unpublished contract report produced for Shurgard UK Ltd, August 2023.

² **Defra (2024)** The Statutory Biodiversity Metric – User Guide. February 2024.




- 1.7 All ecological surveys have an expected validity period, owing to the tendency of the natural environment to change over time. This validity period varies from feature to feature, and is also dependent on the degree of change in a site's management and overall landscape ecology. Where the potential for change is considered to be relevant to the Site, this is highlighted in the appropriate section.
- 1.8 This report does not purport to provide detailed, specialist legal advice. Where legislation is referenced, the reader should consult the original legal text, and/or the advice of a qualified environmental lawyer.





Shurgard, Hampton

Site Location

 Site boundary

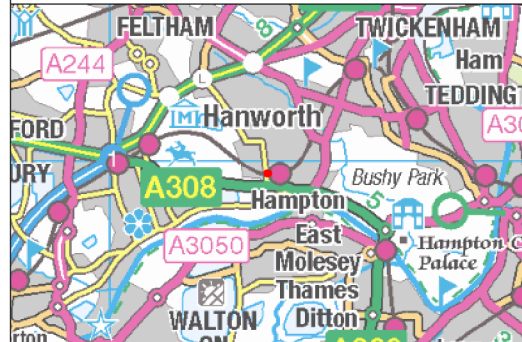



Figure 1.1

Map Scale @ A4: 1:15,000

Surveyed by: -	 APPLIED ECOLOGY
Survey date: -	
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2 Methodology

Baseline conditions

- 2.1 The baseline conditions at the Site are described in full in the 2023 PEA/PRA report (AEL 2023). In summary, the habitat survey was undertaken on 31 July 2023 during which all habitats present were mapped using the UK Habitats Classification Survey (“UKHab”) technique, as described in the UKHab User Manual (v2.0)³. Habitats were subsequently digitised in a Geographical Information System (GIS).
- 2.2 The condition assessment of the recorded habitats was undertaken using the criteria given in the Statutory Biodiversity Metric Technical Annex 1 (February 2024). This process considers specific characteristics of each mapped habitat type against given criteria for a condition rating (“good”, “moderate” and “poor”). These assessment criteria differ for each habitat type, and summaries have been provided in **Appendix B**. Professional judgement is used for any habitats for which condition assessment criteria are not available.

Details of the Development

- 2.3 Proposals for softworks and biodiverse roofs were provided by the design team Landscape Architect and Architect respectively. These were reproduced in GIS to enable comparison with the equivalent data for the pre-development situation.
- 2.4 Proposed habitats were categorised using the Defra Metric classification scheme, and distinctiveness and condition ratings allocated using the relevant criteria and professional judgement.

Calculating BNG

- 2.5 The biodiversity impact of the Development has been assessed using the version of the Statutory Biodiversity Metric calculation tool⁴ (“the Metric”) current at the time of commissioning. The Metric works through the consideration of the change in “Biodiversity Units”) (BUs) available for the Site, comparing the pre- and post-construction situation.
- 2.6 Pre-development BUs are calculated based on the area of each habitat type within the Site, multiplied by adjustment factors for their “distinctiveness”, their condition and “strategic significance”. This is completed separately for habitat patches and linear features. The exercise is repeated for the post-development (or post-intervention) situation with additional multipliers for “Difficulty of creation” and “Time to target condition”. A comparison is then made between the two scores, and the magnitude of the difference between these is expressed as a percentage of the pre-development situation. For the

³ UK Hab Ltd (2023) *UK Habitat Classification Version 2.0* (available at <https://www.ukhab.org>)

⁴ Available from [Statutory biodiversity metric tools and guides - GOV.UK \(www.gov.uk\)](https://www.gov.uk) Accessed March 2024.



London Borough of Richmond-upon-Thames, the target percentage change is currently 10 % for each type of unit.

Potential limitations of the BNG assessment

- 2.7 It is recognised that tools such as the Defra Metric can have a number of significant limitations. Utilising a comparator based on percentage change between pre- and post-development BUs can result mathematically in circumstances where a very small absolute change in value delivers a very large relative change, but also where a relatively large absolute change is presented proportionally as being small. Consequently all metrics should be interpreted with some caution.



3 Results

Baseline conditions

- 3.1 The pre-development biodiversity features on the Site are shown in **Figure 3.1**, and their respective BUs are summarised in **Tables 3.1** and **3.2**. Buildings and hard standing within the Site are not discussed here as they do not contribute to BUs. Bare ground, modified grassland and introduced shrubs are all classified in the Metric as features with low distinctiveness, and both bare ground and modified grassland were considered to be in poor condition. For the bare ground habitats, this was because only two of the Condition Assessment Criteria were passed (namely B and C), and for modified grassland only four of the criteria were met (C, D, F and G). There is no condition assessment for introduced shrubs.
- 3.2 The urban trees on the Site were features with medium distinctiveness, and were considered to be in moderate condition based on observations made in the field and the information given in the Arboricultural Impact Assessment⁵.

Calculating change in Biodiversity Units

- 3.3 A schematic of the post-development biodiversity features on the Site is provided in **Figure 3.2**. The change in Biodiversity Units on the Site as a result of the Development, as quantified by the Metric, is summarised in **Tables 3.3-3.8**.
- 3.4 The Metric shows that there will be a **40.60 % increase** in area habitat BUs on the Site as a result of the Development, and a **585.03 % increase** in linear hedgerow BUs. These change values both meet the requirement for at least a 10 % increase in units, and the proposals underpinning them have been shown to comply with the Trading Rules.
- 3.5 This degree of change will be attained through the planting of at least 20 native urban trees on the Site, the creation of species-rich grassland and shrub areas, and the installation of a biodiverse roof. The following assumptions have been made:
- that the **modified grassland** (proposed flowering lawn) habitat will meet the criteria given for “good” condition, with Condition Assessment Criteria B being the only criteria which may not be met during the lifetime of the Development;
 - the **mixed scrub** will be classifiable as “poor” condition primarily due to the high proportion of non-native species;
 - the “moderate” condition criteria for the **biodiverse roof** are a reasonable target, and there is reference in LDP Policy 5 regarding the contribution of these features to green infrastructure within the Borough;
 - the proposed assemblage of **urban trees** will be classifiable as being of “moderate” condition as > 70 % of these will be of native species;

⁵ **A. T. Coombes Associates Ltd (2023)** *Preliminary Arboricultural Impact Assessment – 74 Oldfield Road, Hampton, TW12 2HR*. Unpublished contract report produced for Shurgard UK Ltd, August 2023.



- the proposed **native hedgerows** will be classifiable as being in “poor” condition, primarily because they will be planted next to beds containing various non-native species and that some will require cutting with straight sides and tops, which is likely to be considered “excessive hedgerow cutting” in the context of the Metric.

Installation of other wildlife features

- 3.6 In addition to the above habitat features, a number of other wildlife features will be installed on the Site, which are not captured by the Metric. These include bird and bat boxes on the northern façade of the building comprising the Development.

Securing long-term management

- 3.7 The landscaping proposals for the Development include all appropriate measures for the long-term management of the habitats that will be created as part of the Development, so as to ensure that their value for wildlife will be maximised for the lifetime of the Development.
- 3.8 These measures include:
- appropriately timed hay cuts for the species-rich grassland areas, with removal of arisings;
 - no herbicides or pesticides, except when there is a need to control invasive species;
 - avoidance of tree works within the nesting bird season;
 - rotational cut of hedgerows so that only one of each side or top is cut in a one in three year cycle, in February, so as to maximise the value of these features for forage and shelter for birds. The exception to this will be the northern boundary of the Site, where the northern side of the new hedgerow will be maintained as a straight cut in order to prevent growth beyond the boundary onto Network Rail land.
- 3.9 The selected bat and bird boxes should not require any maintenance except replacement if any are lost or damaged. The specified boxes are made of woodcrete and are designed to last at least 20-25 years.



Table 3.1: Pre-development biodiversity units (area features)

Habitats	Area (ha)	Habitat distinctiveness	Habitat condition	Pre-development Biodiversity Units
Modified grassland	0.023	Low	Poor	0.05
Mixed shrubs - ornamental	0.016	Low	Condition assessment n/a	0.03
Development land - sealed surface	0.268	Very low	N/a - other	0.00
Unvegetated, unsealed surface	0.004	Low	Poor	0.01
Urban tree	0.114	Medium	Moderate	0.91
Totals	0.43	-	-	1.00

Table 3.2: Pre-development biodiversity units (hedge features)

Habitats	Length (km)	Habitat distinctiveness	Habitat condition	Pre-development Biodiversity Units
Line of trees	0.016	Low	Poor	0.03
Totals	0.016	-	-	0.03

Table 3.3: Post-development biodiversity units retained (area features)

Habitats	Area (ha)	Habitat distinctiveness	Habitat condition	Post-development Biodiversity Unit
Urban trees	0.0896	Medium	Moderate	0.72
Totals	0.0896	-	-	0.72

Table 3.4: Post-development biodiversity units created (area features)

Habitats	Area (ha)	Habitat distinctiveness	Habitat condition	Post-development Biodiversity Units
Developed land, sealed surface	0.218	Very low	N/A - other	0.00
Modified grassland	0.020	Low	Good	0.09
Mixed scrub	0.029	Medium	Poor	0.11
Biodiverse green roof	0.045	Medium	Moderate	0.23
Urban trees	0.081	Medium	Moderate	0.25
Totals	0.390	-	-	0.69



Table 3.5: Post-development biodiversity units retained (hedge features)

Habitats	Length (km)	Habitat distinctiveness	Habitat condition	Post-development Biodiversity Unit
Line of trees	0.016	Low	Poor	0.03
Totals	0.016	-	-	0.03

Table 3.6: Post-development biodiversity units created (hedge features)

Habitats	Length (km)	Habitat distinctiveness	Habitat condition	Post-development Biodiversity Unit
Native hedgerow	0.097	Low	Poor	0.19
Totals	0.097	-	-	0.19

Table 3.7: Summary of BNG calculations

Feature	On-site baseline BUs	On-site post-intervention BUs	Off-site post intervention BUs	Total net change in BUs	Total net change %
Habitat units	1.00	1.40	n/a	0.41	40.60
Hedgerow units	0.03	0.22	n/a	0.19	585.03

Table 3.8: Comparison of wildlife features pre- and post-development

Feature	Number present pre-development	Number present post-development	Loss/gain
External bat boxes	0	2	+ 2
External bird boxes	0	2	+ 2



Shurgard, Hampton

Pre-Development Habitat Map











-  Site boundary
- UK Habs types:**
-  g4: Modified grassland
-  h3h: Mixed shrubs - ornamental
-  u1b5: Buildings
-  u1b: Development land - sealed surface
-  u1c: Unvegetated, unsealed surface
-  Fence
-  Line of non-native trees
-  Individual tree
-  Scrub



Figure 3.1

Map Scale @ A4: 1:500



Surveyed by: RAH

Survey date: July 2023

Drawn by: RAH

Checked by: CW

Status: Final



Shurgard, Hampton

Post-Development Biodiversity Schematic

- Site boundary
- Proposed habitats:**
- Modified grassland
- Mixed scrub
- Biodiverse roof
- Urban developed land
- Retained tree line
- New native hedgerow
- New urban tree
- Retained urban tree
- Proposed wildlife homes:**
- Bat box
- House sparrow terrace

Figure 3.2

Map Scale @ A4: 1:500



Surveyed by: -
Survey date: -
Drawn by: RAH
Checked by: CW
Status: Final



4 Summary and Conclusions

- 4.1 In July 2023, a Preliminary Ecological Appraisal and a Preliminary Roost Assessment (for bats) were undertaken for a plot of land on Oldfield Road in Hampton, within the London Borough of Richmond upon Thames, in order to inform proposals for a self-storage facility on the Site. The survey found no features of ecological importance on the Site, although recommendations were made in the subsequent reporting regarding how the biodiversity value of the Site could be improved.
- 4.2 The suite of biodiversity enhancement measures subsequently proposed for the Development have been assessed here to determine whether or not they meet the statutory requirement for delivery of at least 10 % biodiversity net gain, as defined by the current statutory Metric in use by ecology practitioners. The baseline for this BNG assessment was taken as that recorded during the PEA.
- 4.3 The outcome of the BNG assessment was that a c. 40 % gain in area habitat units will be delivered by the Development, along with a c. 585 % gain in hedgerow units. The biodiversity proposals for the Development will also satisfy all current Trading Rules.
- 4.4 The findings and recommendations made in this report will remain valid for a period of 18-24 months, after which time a review will be necessary.



Appendix A

List of Initialisms, Acronyms and Abbreviations Used in this Report



Short form	Full terminology
AEL	Applied Ecology Ltd
BNG	Biodiversity Net Gain
BU	Biodiversity Unit
CIEEM	Chartered Institute of Ecology and Environmental Management
GIS	Geographical Information System
IEF	Important Ecological Feature
PEA	Preliminary Ecological Appraisal
PRA	Preliminary Roost Assessment
SQE	Suitably Qualified Ecologist



Appendix B

Habitat Condition Assessment Criteria for Relevant Habitats



Condition sheet for URBAN habitat type

Condition Assessment Criteria		
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80 % of the total habitat area.	
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	
C	Invasive non-native plant species (listed on Schedule 9 of WCA ¹) and others which are to the detriment of native wildlife (using professional judgement) ² cover less than 5 % of the total vegetated area ³ . Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5 % cover).	
Additional criteria – must be assessed for Open mosaic habitat on previously developed land only		
D1	The parcel shows spatial variation and forms a mosaic of bare substrate PLUS: At least four early successional communities (a) to (i); Communities : (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland, (i) pools.	
D2	The parcel contains pools of water such as permanent and ephemeral waterbodies.	
Additional Criteria – must be assessed for Bioswale and SuDS habitat types only:		
E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife ⁴ .	
E2	The vegetation is comprised of plant species suited to wetland or riparian situations.	
Additional criterion – must be assessed for Intensive green roofs only		
F	The roof has a minimum of 50 % native and non-native wildflowers. 70 % of the roof area is soil and vegetation (including water features).	
Additional criterion – must be assessed for Biodiverse green roofs only		
G	The roof has a varied depth of 80–150 mm; at least 50 % is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. Note – to achieve Good condition some additional habitat, such as sand piles, stones, logs etc are present.	
Condition Assessment Result		Condition Assessment Score
Results for Green Roofs (requiring assessment of four criteria only – core criteria plus additional criterion specified for habitat type)		
Passes all 3 core criteria; AND Meets the requirements for Good condition within criterion C; AND Passes additional criterion relevant to specific habitat type (F or G).		Good (3)
Passes 2 or 3 of 4 criteria; OR Passes 4 of 4 criteria but does not meet the requirements for Good condition within criterion C.		Moderate (2)
Passes 0 or 1 of 4 criteria.		Poor (1)
Notes		
<p>Footnote 1 – Wildlife and Countryside Act 1981 (as amended)..</p> <p>Footnote 2 – Sources of information about detrimental non-native species can be found on the GB Non-native Species Secretariat (GBNNS) website: Home » NNS (nonnativespecies.org) and Natural England Access to Evidence page should also be checked for up-to-date information: Horizon-scanning for invasive non-native plants in Great Britain - NECR053 (naturalengland.org.uk)</p> <p>For criterion C – For green roof habitat types only – buddleia <i>Buddleja davidii</i> should be assessed alongside Schedule 9 species. This species impairs the health of the local ecosystem and reduces the biodiversity potential of the roof. It is also a sign that a roof has not been planted and seeded correctly in subsequent years.</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, using professional judgement.</p> <p>Footnote 4 – Use professional judgement. Sources of additional information about non-native wildlife can be found online at the GBNNS website: Alternative plants » NNS (nonnativespecies.org)</p>		



Condition sheet for SCRUB habitat type

Condition Assessment Criteria	
A	The parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). ¹ At least 80 % of scrub is native There are at least three native woody species ² , No single species comprises more than 75 % of the cover (except hazel <i>Corylus avellana</i> , common juniper <i>Juniperus communis</i> , sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i> , which can be up to 100 % cover)
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran ³) shrubs are all present
C	There is an absence of invasive non-native plant species ⁴ (as listed on Schedule 9 of WCA ⁵) and species indicative of sub-optimal condition ⁵ make up less than 5 % of ground cover.
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.
Condition Assessment Result (out of 7 criteria)	
Passes 5 criteria.	Good (3)
Passes 3 or 4 criteria.	Moderate (2)
Passes 2 or fewer criteria.	Poor (1)
Notes	
<p>Footnote 1 – Professional judgment should be used alongside the UKHab description.</p> <p>Footnote 2 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) Hedgerow Survey Handbook: A standard procedure for local surveys in the UK. 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).</p> <p>Footnote 3 – See gov.uk standing advice on ancient and veteran species. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)</p> <p>Footnote 4 – 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, using professional judgement.</p> <p>Footnote 5 – Wildlife and Countryside Act 1981 (as amended).</p> <p>Footnote 6 – Species indicative of sub-optimal condition for this habitat type may include: non-native conifers, tree-of-heaven <i>Ailanthus altissima</i>, holm oak <i>Quercus ilex</i>, European turkey oak <i>Quercus cerris</i>, cherry laurel <i>Prunus laurocerasus</i>, snowberry <i>Symphoricarpos</i> spp., shallon <i>Gaultheria shallon</i>, American skunk cabbage <i>Lysichiton americanus</i>, buddleia <i>Buddleja</i> spp., cotoneaster <i>Cotoneaster</i> spp., Spanish bluebell <i>Hyacinthoides hispanica</i> and hybrid bluebells <i>Hyacinthoides x massartiana</i>. There may be additional relevant species local to the region and or site.</p>	



Condition sheet for SPARSELY VEGETATION LAND habitat type

Condition Assessment Criteria	
A	The parcel is a good representation of the sparsely vegetated 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 habitat type. Indicator species for the specific sparsely vegetated habitat type listed by UKHab are consistently present
B	The cover of bracken <i>Pteridium aquilinum</i> , scrub and trees is less than 25 %.
C	There is an absence of invasive non-native plant species ¹ (as listed on Schedule 9 of WCA ²) and species indicative of sub-optimal condition ³ make up less than 5 % of vegetated ground cover
D	Vegetation cover of vascular and non-vascular plants is between 5 and 50 %.
Condition Assessment Result	Condition Assessment Score
Passes 4 criteria	Good (3)
Passes 3 criteria	Moderate (2)
Passes 2 or fewer criteria	Poor (1)
Notes	
<p>Footnote 1 – 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, using professional judgement.</p> <p>Footnote 2 – Wildlife and Countryside Act 1981 (as amended).</p> <p>Footnote 3 – Species indicative of sub-optimal condition for this habitat type include: creeping thistle <i>Cirsium arvense</i>, spear thistle <i>Cirsium vulgare</i>, docks <i>Rumex</i> spp., brambles <i>Rubus</i> spp., common ragwort <i>Jacobaea vulgaris</i> and common nettle <i>Urtica dioica</i>. There may be additional relevant species local to the region and or site.</p>	

Condition sheet for INDIVIDUAL TREES habitat type

Condition Assessment Criteria	
A	The tree is a native species (or at least 70 % within the block are native species).
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10 % of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
C	The tree is mature (or more than 50 % within the block are mature).
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75 % of expected canopy for their age range and height.
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark
F	More than 20 % of the tree canopy area is oversailing vegetation beneath.
Condition Assessment Result	Condition Assessment Score
Passes 5 or 6 criteria.	Good (3)
Passes 3–5 criteria.	Moderate (2)
Passes 2 or fewer criteria.	Poor (1)
Note that 'Fairly Good' and 'Fairly Poor' condition categories are not available for this habitat type.	



Condition sheet for GRASSLAND habitat type (low distinctiveness)

Condition Assessment Criteria		
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.	
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.	
C	Any scrub present accounts for less than 20 % of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present.) Note – patches of scrub with continuous (more than 90 %) cover should be classified as the relevant scrub habitat type.	
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.	
E	Cover of bare ground is between 1 % and 10 %, including localised areas (for example, a concentration of rabbit warrens) ² .	
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20 %.	
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴)	
Condition Assessment Result (out of 7 criteria)		Condition Assessment Score
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)
Notes		
<p>Footnote 1 – 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>.</p> <p>Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10 % cover.</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, using professional judgement.</p> <p>Footnote 4 – Wildlife and Countryside Act 1981 (as amended).</p>		



Condition sheet for GRASSLAND habitat type (medium, high and very high distinctiveness)

Condition Assessment Criteria	
A	The parcel represents a good example of its habitat type with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relevant to Footnote 3 suboptimal species which may be listed in the UKHab description) ¹ . Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.
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.
C	Cover of bare ground is between 1 % and 5 %, including localised areas, for example, rabbit warrens ² .
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 %.
E	Combined cover of species indicative of sub-optimal condition ³ 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 ⁴ (as listed on Schedule 9 of WCA ⁵) are present, this criterion is automatically failed.
Additional criterion – must be assessed or 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 3 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only
Condition Assessment Result	Condition Assessment Score
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)
Notes	
<p>Footnote 1 – Professional judgment should be used alongside the UKHab description.</p> <p>Footnote 2 – 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 3 – 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 4 – 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 5 – Wildlife and Countryside Act 1981 (as amended).</p>	



Condition sheet for HEDGEROW habitat type

Condition Assessment Criteria			
Attributes and functional groupings (A, B, C, D and E)		Criteria – the minimum requirements for ‘favourable condition’	Description
A1	Height	>1.5 m average along length.	<p>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.</p> <p>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).</p> <p>A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).</p>
A1	Width	>1.5 m average along length.	<p>The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</p> <p>Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height.</p> <p>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).</p>
B2	Gap – hedger base	Gap between ground and base of canopy <0.5 m for >90 % of length.	<p>This is the vertical ‘gappiness’ of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.</p> <p>Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).</p>
B2	Gap – hedge canopy continuity	Gaps make up <10 % of total length; and No canopy gaps >5 m.	<p>This is the horizontal ‘gappiness’ of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).</p> <p>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).</p>
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).	<p>This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow.</p> <p>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.</p> <p>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.</p>
C2	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20 % cover of the area of undisturbed ground.	<p>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.</p>
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 WCA3) and recently introduced species.	<p>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 website⁴, as well as the BSBI website⁵ 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</p>



Condition Assessment Criteria			
			non-native species see the GB Non-Native Secretariat website ⁷ .
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)
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 20–50 m 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.
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.
Condition category requirements for hedgerows without trees			Condition Assessment Score
No more than 2 failures in total; AND No more than 1 failure in any functional group.			Good (3)
No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and C2 = Moderate condition).			Moderate (2)
Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g., fails attributes A1, A2, B1 and B2 = Poor condition)			Poor (1)
No more than 2 failures in total; AND No more than 1 failure in any functional group			Good (3)
No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (e.g., fails attributes A1, A2, B1, C2 and E1 = Moderate condition).			Moderate (2)
Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (e.g., fails attributes A1, A2, B1 and B2 = Poor condition).			Poor (1)
Notes			
Footnote 1 – DEFRA (2007) Hedgerow Survey Handbook. A standard procedure for local surveys in the UK. [online] Available on: layout (hedgelink.org.uk)			
Footnote 2 – STALEY, J.T. ET AL. (2020) Definition of Favourable Conservation Status for Hedgerows. [online] Available on: Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk)			
Footnote 3 – Wildlife and Countryside Act 1981 (as amended).			
Footnote 4 – CHEFFINGS, C. M. et al. (2005) The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. [online] Available on: The Vascular Plant Red Data List for Great Britain (Species Status No. 7) JNCC Resource Hub			
Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). Definitions: wild, native or alien? [online] Available on: Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org)			
Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) Online Atlas of the British and Irish Flora. [online] Available on: Acknowledgements Online Atlas of the British and Irish Flora (brc.ac.uk)			
Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNS) (2022) Available on: Home » NNSS (nonnativespecies.org)			
Footnote 8 – See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)			
And Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)			



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