

FPCR Environment and Design Ltd

Land at Cherry Orchard Farm, Higham on the Hill, Biodiversity Net Gain Assessment

1.0 INTRODUCTION

- 1.1 The following statement provides the results of a habitat assessment and biodiversity net gain (BNG) assessment undertaken on behalf of Owl Homes Ltd. to inform the proposed development of the site known as Land at Cherry Orchard Farm, Higham on the Hill, Leicestershire (central OS grid reference SP 377953), herein referred to as 'the Site'.

2.0 METHODOLOGY

- 2.1 The BNG assessment was undertaken using the Biodiversity Metric 4.0 Calculation Tool (DEFRA 4.0).
- 2.2 The baseline values were based on phase 1 habitat survey data and BNG condition assessments undertaken on-site by FPCR Environment & Design Ltd. on the 14th March 2023.
- 2.3 The existing baseline habitats are shown in **Figure 1**. Habitats were mapped and defined using the UK Habitat Classification, with further information providing habitat area, distinctiveness and condition categories which are used to calculate the value of each habitat. The condition assessments were undertaken using the relevant Condition Assessment Criteria within the Biodiversity Metric 4.0 - Technical Supplement¹.
- 2.4 The proposed post-development habitats are shown in **Figure 2** and are based on the detailed POS Planting Plan (9882-FPCR-XX-XX-DR-L-0001).
- 2.5 Full details of the calculation methodology are provided within the Biodiversity Metric 4.0 - User Guide².

3.0 BASELINE HABITAT ASSESSMENT

Ploughed Arable Land

The majority of the Site comprised a single ploughed arable field at the time of survey, however, this was a recent land-use change, as an preliminary ecological appraisal in April 2021 - *Preliminary Ecological Appraisal of Land at Cherry Orchard Farm, Higham on the Hill, Leicestershire - Philip Irving*, described the site as modified grassland of a MG7 community with "dominant perennial rye grass *Lolium perenne*, locally frequent cocksfoot *Dactylis glomerata* and occasional false oat grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus* and meadow foxtail *Alopecurus pratensis*."

An assessment of the localised off-site grassland to the south by FPCR on the 14th of March 2023, recorded results consistent with those taken of the grassland field in 2021 and were thus used for the on-site field area.

1 Panks, S. *et al.*, 2022a. Biodiversity metric 4.0: Auditing and accounting for biodiversity - Technical supplement. Natural England. Available at: <http://publications.naturalengland.org.uk/publication/6049804846366720> [Accessed 24.04.23]

2 Panks, S. *et al.* 2022b. Biodiversity metric 4.0: Auditing and accounting for biodiversity – User Guide. Natural England. Online. Available at: <http://publications.naturalengland.org.uk/publication/6049804846366720> [Accessed 24.04.23]

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Photograph 1: Area of Modified Grassland off-site to the south used for the on-site assessment.

Modified Grassland

- 3.1 The Site previously (pre 2023 survey) consisted of a large open grassland vegetation was categorized as modified grassland in poor condition after failing two criteria including criterion 1 which is required for moderate or good condition (see Appendix A, Table 1 for the detailed assessment).
- 3.2 The dominant grass species was perennial rye grass, with frequently occurring cocksfoot and rarely occurring false oat grass, yorkshire fog, and meadow foxtail.
- 3.3 Few forb species were present, but these included less desirable species such as common nettle *Urtica dioica*, cleavers *Galium aparine*, and creeping thistle *Cirsium arvense*.



Photograph 2: Area of Modified Grassland off-site to the south used for the on-site assessment.

Hedgerows

- 3.1 Of the two hedgerows present on Site, hedgerow H1, binding the west of the Site was assessed as being of moderate condition, whilst Hedgerow H2 binding the north of the Site was also in moderate condition (Appendix A, Table 2).
- 3.2 A line of trees consisting of field maples *Acer campestre* was present along the eastern area of the northern boundary, these were assessed as in moderate condition.
- 3.3 All existing hedgerows are to be retained within the proposals with the exception of a small section of the treeline on the northern site boundary to facilitate provision of access.

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Scrub

An area of native scrub was present along the western hedgerow, this was assessed as poor condition after failing three categories (3, 4, 5). It is to be retained.

4.0 PROPOSED HABITATHardstanding

- 4.1 Areas of hardstanding are proposed including houses, roads and local equipment area for play (LEAP).
- 4.2 A condition assessment is not applicable for this habitat type within the metric.

Vegetated Garden

- 4.3 Vegetated gardens are associated with the residential housing and a condition assessment is not applicable for this habitat type within the metric.

Public Open Space (POS) – Modified Grassland

- 4.4 It is considered that an area of the public open space within the residential parcel and surrounding the LEAP play area will be managed as amenity grassland, with a target of poor condition due to expected regular footfall and management of these areas (Appendix A, Table 3).

SuDs Pond (Wet Grassland)

- 4.5 The proposal includes an attenuation feature in the north west of the site. This feature will be designed to temporarily hold water, with gently sloped edges and wet grassland sowing (such as Emorsgate EM8 wetland seed.³
- 4.6 It is likely the SuDs feature will reach good condition and fulfil all 5 criteria, however a precautionary approach to the assessment has been applied, with the feature assigned moderate condition (target condition criteria are provided in Appendix A, Table 4, with the most likely criteria failures selected).

Other Neutral Grassland

- 4.7 The habitats along the southern, western and northern site boundaries will be sown with a native flowering meadow mix (such as Emorsgate EM3 wildflower seed⁴) and maintained as green open space (meadow G37 116). With appropriate management it is likely that this habitat would achieve moderate condition, and will be limited from footfall with a native hedge buffer (target condition criteria provided in Appendix A, Table 5).

Urban Trees

From the proposals a number of urban and rural trees will be planted within the residential parcel. As a precautionary approach, the BNG assessment includes the 30 urban trees and 31 rural trees as small standards, and that these are likely to achieve at least poor condition (with most likely fails in categories C, D and F, and none native species failing category A. https

³ Available at <https://wildseed.co.uk/product/mixtures/complete-mixtures/meadow-mixtures-for-specific-soils/meadow-mixture-for-wetlands/>

⁴ Available at <https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/special-general-purpose-meadow-mixture/>

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Hedgerow

- 4.8 The minor loss of the northern treeline is mitigated by the planting of new native and non native hedgerows on site.
- 4.9 The native hedgerows with management are expected to reach moderate condition, whilst the non native hedgerows are in the urban footprint and have been assigned as poor as a precaution.
- 4.10 A 1.23 unit hedgerow gain is expected, which would give a 85.09 % hedgerow net gain.

Scrub

- 4.11 A Corridor of dense continuous native scrub is to be planted along the southern boundary of the site, linked to the western boundary scrub by hedgerow. This is expected to reach good condition, but has been set as moderate condition as a precaution (target condition criteria provided in Appendix A, Table 6).

5.0 DEFRA METRIC SCORE

- 5.1 The scheme as described by the illustrative proposals is considered able to achieve a net gain in habitat biodiversity units as conditioned in the outline planning.
- 5.2 The baseline habitat value of the site is 5.31. With the assumptions presented above, the proposals could result post-intervention score of 5.42 habitat units, a net gain of 0.12 habitat units (c.2.18%).
- 5.3 The baseline hedgerow value of the site is 1.45. The planting of new hedgerows would result in a post intervention score of 2.68 hedgerow units which is a net gain of 1.23 units (85.09%)

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APPENDIX A CONDITION ASSESSMENT TABLES**Habitats – Baseline Assessment****Table 1. Condition Assessment Criteria of low Distinctiveness Grasslands for the Defra Metric**

Condition Assessment Criteria	
1. 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.	X
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	X
3. Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	√
4. 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.	√
5. Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	√
6. Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	√
7. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981)	√
Condition Assessment Result	Condition Assessment Score
Passes 6 or 7 of 7 criteria including Criterion 1	Good (3)
Passes 4 or 5 of 7 criteria including passing essential criterion 1	Moderate (2)
Passes 0, 1, 2 or 3 of 7 criteria; OR 4, 5 or 6 of criteria but failing criterion 1	Poor (1)

Hedgerows**Table 2. Target Condition Criteria for Hedgerows for the BIA Metric**

Condition Assessment Criteria		H1	H2
A1. Height >1.5 m average along length		√	√
A2. Width >1.5 m average along length		√	√
B1. Gap Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')		X	√
B2. Gap – "Gaps make up <10% of total length and no canopy gaps >5 m"		√	√
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 hedge (at least)		X	X
C2. Undesirable perennial vegetation Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground		X	X
D1. Invasive and neophyte species >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species		√	√
D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities		√	√
SCORE		3 Failures (2 in one group): Moderate condition	2 Failures (2 in one group): Moderate condition
Condition Assessment Result			Weighting (score)
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.		3
Moderate	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 & E1 = Moderate condition).		2
Poor	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 & B2 = Poor condition).		1

Habitats – Proposed habitats**Table 3. Condition Assessment for low Distinctiveness Grasslands (Amenity Grassland)**

Condition Assessment Criteria	
1. 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.	X
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	X
3. Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	√
4. 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.	X
5. Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	X
6. Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	√
7. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981)	√
Condition Assessment Result	Condition Assessment Score
Passes 6 or 7 of 7 criteria including Criterion 1	Good (3)
Passes 4 or 5 of 7 criteria including passing essential criterion 1	Moderate (2)
Passes 0, 1, 2 or 3 of 7 criteria; OR 4, 5 or 6 of criteria but failing criterion 1	Poor (1)

Table 4. Condition Assessment for SuDs Features

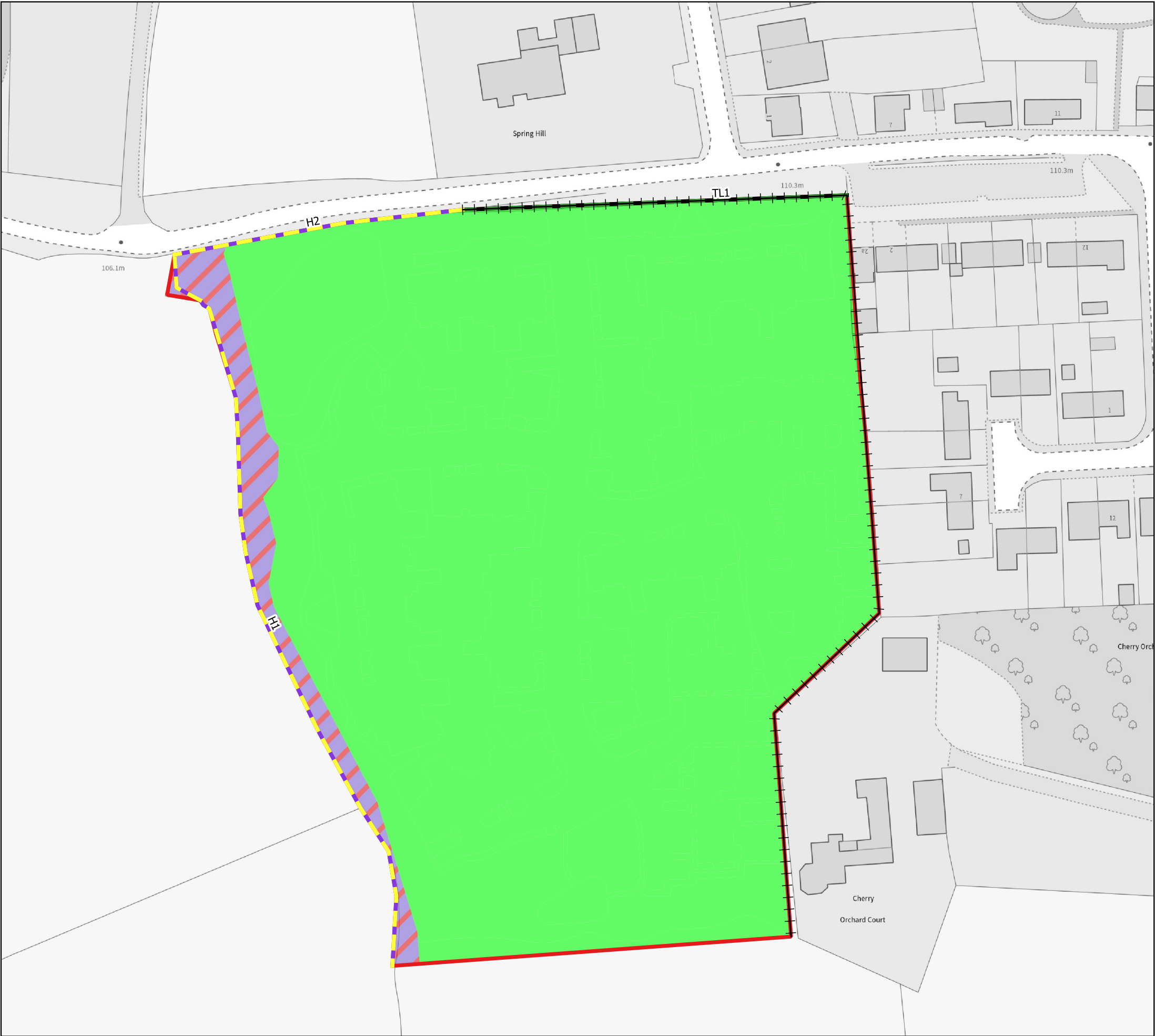
Condition Criteria		Pond Reference
		X1
1Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.		X
2The habitat parcel contains 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.		√
3Invasive non-native plant species (listed on Schedule 9 of WCA1) and others which are to the detriment of native wildlife (using professional judgement)2 cover less than 5% of the total vegetated area3.		√
4Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife4.		√
5The vegetation is comprised of plant species suited to wetland or riparian situations.		X
Total Fails		3
Condition		Moderate
Condition Assessment Result		Condition Assessment Score
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes all additional criteria relevant to specific habitat type (Group D or Group E)		Good (3)
• Passes 3 or 4 of 5 criteria; OR • Passes 5 of 5 criteria but does not meet the requirements for Good condition within criterion C.		Moderate (2)
• Passes 2 or fewer of 5 criteria.		Poor (1)

Table 5. Target Condition Assessment Criteria for Moderate Distinctiveness Grasslands (Other Neutral Grassland)

Condition Criteria	POS (south, east and west boundaries)
1."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."	√
2.Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	X
3.Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	√
4.Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus agg.</i>) is less than 5%.	√
5."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 WCA4) are present, this criterion is automatically failed."	√
Additional Group (Non-acid types only)	
6."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."	X
Total Passes	4
Condition	Moderate
Condition Assessment Result: Non-Acid Grassland Type	Condition Assessment Score
Passes 5 of 6 criteria, including essential criterion 1 and 6.	Good (3)
Passes 3 or 4 of 6 criteria, including essential criterion 1.	Moderate (2)
Passes 0, 1, 2 criteria of 6 criteria; OR Passes 3 or 4 criteria excluding criterion 1 and 6	Poor (1)

Table 6. Target Condition Assessment Criteria for Scrub

Condition Criteria	POS (south, east and west boundaries)
1. The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species ¹ , with no single species comprising 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).	√
2. Seedlings, saplings, young shrubs and mature (or ancient or veteran ²) shrubs are all present.	X
3. There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) and species indicative of sub-optimal condition ⁵ make up less than 5% of ground cover.	√
4. The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	√
5. There are clearings, glades or rides present within the scrub, providing sheltered edges.	X
Total Passes	4
Condition	Moderate
Condition Assessment Result:	Condition Assessment Score
Passes 5 criteria	Good (3)
Passes 3 or 4 criteria	Moderate (2)
Passes 2 or fewer criteria	Poor (1)



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Key

 Red Line Boundary

Baseline Habitats

 Mixed scrub

 Modified grassland

 Line of trees

 Native hedgerow





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Key

Red Line Boundary

Habitats Master EDIT ME

Developed land; sealed surface

Mixed scrub

Modified grassland

Other neutral grassland

Sustainable drainage system

Vegetated garden

Grasscrete

General
Identify
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On-plc

INDIVID

Qty	Lat
3	Ac
9	Ac
13	Am
2	Be
3	Gi

HEDGER

Qty	Lat
987	Pr

PLANTIN

Qty	Lat
132	Am
38	Be
45	Be
5	Ca
88	Ca
84	Ca
8	Ch
8	Cis
34	Co
13	El
5	Esc
13	Euc
18	Eu

