



PRELIMINARY ECOLOGICAL APPRAISAL

Land adjacent to Titus Cottage, Bolton

June 2024

Preliminary Ecological Appraisal

Land adjacent to Titus Cottage, Bolton

A report for

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Report by



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CONTENTS

1.	Introduction	1
1.1	Reason for Survey	1
1.2	Site Location	1
2.	Methodology	3
2.1	Desk Survey	3
2.2	Habitat Survey	3
2.3	Protected Species Surveys	3
2.4	Survey Constraints	4
2.5	Surveyor Experience	4
3.	Results	6
3.1	Desk Study	6
3.2	Habitat Survey	6
3.3	Protected Species Surveys	8
4.	Evaluation and Recommendations	10
4.1	Desk Study	10
4.2	Habitats	10
4.3	Badgers	11
4.4	Bats	11
4.5	Birds	12
4.6	Reptiles	Error! Bookmark not defined.
	References	13
	Appendix A: Site Photographs	14
	Appendix B: Figures	16
	Appendix C: Condition Assessment Sheets	17

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1. INTRODUCTION

1.1 REASON FOR SURVEY

PENNINE ecological have been commissioned to undertake a Preliminary Ecological Appraisal of land adjacent to Titus Cottage, Bolton.

The assessment is required for a planning application for a single dwelling, with associated infrastructure and greenspace.

A biodiversity survey and report has been completed to provide a baseline of the site conditions and to determine whether the proposals would result in significant impacts to protected habitats or species.

This report addresses potential ecological impacts which may arise from the proposals. This includes;

- Habitat assessment (UKHabs survey).
- Badger survey.
- Potential breeding bird issues associated with the site.
- Great Crested Newt Assessment.
- External Preliminary Roost Assessment, and assessment of foraging / commuting opportunities for bats.
- Opportunities for reptiles.
- Site value for important invertebrate assemblages.

1.2 SITE LOCATION

The site is situated on land previously used as a horse paddock, to the north of Titus Cottage and to the south of a newly built residential dwelling. The site's central National Grid Reference is SD 7637 0955. To the west, the site is bound by Bradley Fold Road, and to the east and south by open countryside. An aerial image of the area subject to survey is shown below.

Figure 1.1: Aerial image of land adjacent to Titus Cottage, with red line survey area



2. METHODOLOGY

2.1 DESK SURVEY

A desk-based data search using freely available information was undertaken.

The Multi Agency Geographical Information Centre www.magic.gov.uk was also referred to in respect of statutory sites, GCN licence returns, and European Protected Species Licences (EPSL) issued in respect of GCN and bats. Greater Manchester Local Records Centre (GMLRC) mapping was reviewed in respect of non-statutory sites.

A review of the Bury Metropolitan Borough Council planning portal was undertaken in relation to historic planning applications within the vicinity of the site.

In addition, Pennine Ecological's dataset was referenced which contains extensive records of species and habitats generated from surveys undertaken since the company's formation in 1996.

It should be noted that species records over 500m of the site are not reproduced here as they are considered to have no association with the site and are beyond the sphere of influence for this proposal.

2.2 HABITAT SURVEY

A UK Habitat Classification (UKHabs) survey (UKHab Ltd, 2020) of the habitats within the red line boundary was undertaken on 23/05/2024. The site's habitats were mapped, and vascular plant species were recorded and given a DAFOR ((Dominant (D), Abundant (A), Frequent (F), Occasional (O), Rare (R)) score. Each habitat was given a distinctiveness and habitat condition score (Natural England, 2023). Secondary codes have been applied where required to describe the primary habitats. Habitats have been mapped using the fine-scale minimum mapping unit.

2.3 PROTECTED SPECIES SURVEYS

2.3.1 Badger Survey

A badger survey was undertaken of the site and up to 50m from the site boundary (where access permitted) and followed standard survey guidance (Harris et al., 1989, and Roper, 2010). The badger survey used standard techniques for establishing the use of the site by badger, and includes searches for evidence of badgers including:

- Setts.
- Pathways.
- Footprints.
- Latrines.
- Foraging areas.
- Scratching posts.
- Boundary searches for runs, pathways, and latrines.

2.3.2 Preliminary Roost Assessment

An external preliminary bat roost assessment was undertaken following the methodology outlined in Bat Conservation Trust: Bat Surveys for Professional Ecologists, Good Practice Guidelines (2023). All buildings and trees on site were assessed from ground level and using close-focusing binoculars where required.

2.3.3 Breeding Bird Assessment

The site was assessed for its potential to support breeding birds. This included identifying any evidence of historic nesting within the site.

Any bird activity within the site was recorded whilst undertaking the site survey.

2.3.4 Other Protected and Notable Species

Consideration was given to other protected and notable species potentially present. The following species / species groups have been scoped out for further assessment, with brief reasoning provided below:

- Great Crested Newt – There are no ponds on-site or within 250m of the site. Though the site supports potentially suitable terrestrial habitat, it is isolated from suitable breeding habitat. In light of this, and the absence of European Protected Species Licence records within 500m of the site, great crested newt is considered to be absent from the site and locally.
- Riparian Mammals – There are no watercourses or waterbodies within 100m of the site. The site comprises habitats that are of no value to riparian mammals. Due to the lack of connectivity to any watercourses or waterbodies, riparian mammals are considered to be absent from the site and locally.
- Invertebrates – The site is comprised primarily of modified grassland, is of limited size, and supports few of the habitat elements indicating elevated site value for invertebrates (Dobson & Fairclough, 2021). The site is considered unlikely to support notable invertebrate assemblages.

These species are not discussed further within this report.

2.4 SURVEY CONSTRAINTS

The site was surveyed on 23/05/2024. Full access to the site was possible, though access to the surrounding area was limited to Public Rights of Way.

The grassland had been recently mown at the time of survey, partially limiting botanical species identification. Regardless, the grassland and other habitats on-site were accurately identified and condition assessed.

There are considered to be no limitations to the evaluations and recommendations provided within this report.

2.5 SURVEYOR EXPERIENCE

The surveyor and author of this report, Hugh Richards, is a doctoral candidate studying plant conservation, and member of British Ecological Society, with 3 years' experience in ecological survey and evaluation. Key skills include the following:

- Extended Phase 1 Habitat Survey/UKHabs Survey.
- Biodiversity Net Gain condition assessments, including for rivers (under the Modular River Physical Survey methodology)
- Proficient field botanist, including specialist scarce plant knowledge.
- Breeding bird survey.
- Invertebrate surveys.
- Mammal surveys including surveys for badger, preliminary bat roost survey, bat activity surveys.
- Riparian corridor and mammal surveys.

- Great crested newt surveys.
- Reptile surveys.
- Ecological Evaluation and Impact Assessments in association with small-to-medium scale development projects.

3. RESULTS

3.1 DESK STUDY

3.1.1 Statutory Sites

There are no internationally or nationally designated statutory sites located within 2km of the site.

The Site of Special Scientific Interest (SSSI) Impact Risk Zones¹ (IRZ's) has been reviewed. Whilst IRZs overlap with the site, due to the nature and scale of the development, consultation with Natural England is not required.

3.1.2 Non-Statutory Sites

Ainsworth Lodge Site of Biological Importance (SBI) is located approximately 450m southeast of the site. The site is designated based on its amphibian interest, as well as supporting Priority habitat Lowland Mixed Deciduous Woodland.

3.1.3 Protected / Notable Habitats and Species

There are no protected or notable species records within the site or within 500m of the site.

3.2 HABITAT SURVEY

3.2.1 Primary Habitats Present

- g4 Modified grassland
- u1b6 Other developed land
- h3d Bramble scrub
- g1d Other lowland acid grassland
- h2a Native hedgerow
- h2b Non-native and ornamental hedgerow
- u1e Built linear features

Secondary Habitat Codes

- 16 Tall forbs
- 33 Ecologically valuable line of trees
- 81 Ruderal or ephemeral
- 524 Invasive non-native species

3.2.2 General Description

The site is dominated by modified grassland, previously used as horse paddocks. Along the eastern boundary of the site is an ecologically valuable line of trees. A short native hedgerow is present at the site's northern boundary to the west. Areas of hardstanding (u1b6) adjacent to Titus Cottage at the southern boundary have been colonised by tall forbs, ruderal species, and bramble scrub. A

¹ The Impact Risk Zones (IRZs) are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks posed by development proposals to: Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites

small area of other lowland acid grassland is growing atop a stone wall at the southern boundary, to the east. The site is bound by adjacent buildings, stone walls, hedgerows, line of trees, and post-and-wire fencing.

3.2.3 Target Notes

(i) Target Note 1: g4 (106) – Modified grassland (mown)

The site is dominated by modified grassland, which at time of survey had been recently mown to a height of approximately 7cm, with arisings left. Species diversity is limited, comprising typical species of modified grassland, including Yorkshire fog *Holcus lanatus*, a bent *Agrostis* species (likely creeping bent *Agrostis stolonifera*), smooth meadow-grass *Poa pratensis*, cock's-foot *Dactylis glomerata*, meadow foxtail *Alopecurus pratensis*, crested dog's-tail *Cynosurus cristatus*, ribwort plantain *Plantago lanceolata*, dandelion *Taraxacum officinale* agg., meadow buttercup *Ranunculus acris*, creeping thistle *Cirsium arvense*, common vetch *Vicia sativa*, a clover *Trifolium* species, and a ragwort *Senecio* species.

At the grassland margins, sward height was higher, with species more typical of tall forbs communities present, such as nettle *Urtica dioica*, herb-Robert *Geranium robertianum*, cleavers *Galium aparine*, and broad-leaved dock *Rumex obtusifolius*.

The grassland is in moderate habitat condition (Refer to Appendix C).

(ii) Target Note 2: 33 – Ecologically valuable line of trees

A line of seven trees (including mature and ecologically valuable specimens) is present at the site's eastern boundary, which continues to the north offsite. Species present include ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, and hawthorn *Crataegus monogyna*. Ground flora is typical of the tall forbs species seen elsewhere on-site, dominated by nettle and cleavers, though also includes Himalayan balsam *Impatiens glandulifera* (see Target Note 6, below).

(iii) Target Note 3: h2a and h2b – Native hedgerow and non-native / ornamental hedgerow

A short native hedgerow is present at the site's northern boundary, to the west. It is approximately 28m and comprised of privet *Ligustrum* sp. and elder *Sambuca nigra*. It is outgrown in character, to a height of approximately 4 metres, and approximately 2 metres wide at the base.

Bounding the site at its western boundary is an ornamental hedgerow comprised of cypress *Cupressus* sp., with a single semi-mature sycamore present. The hedgerow is approximately 15 metres in length, 7 metres tall, and 1.5 metres wide at the base.

Neither hedgerow is likely to qualify as important under the Hedgerows Regulations 1997.

(iv) Target Note 4: g1d – Other lowland acid grassland

A small area (approximately 28m²) of higher diversity grassland was recorded along a stone wall at the site's southern boundary, recorded as other lowland acid grassland (g1d). Leaching of minerals from the igneous rock wall may have lowered the pH of the surface substrate, creating suitable conditions for calcifugous species. Alternatively, this grassland may be relict habitat from previously extensive acid grassland, as indicated by a small strip of lowland dry acid grassland (g1a) to the southwest of the site. Species typical of acidic substrates found here include wavy hairgrass *Deschampsia flexuosa* and sheep's fescue *Festuca ovina*.

Most of the species present in the adjacent modified grassland have colonised this area, though with additional species including false oat-grass *Arrhenatherum elatius* and broad buckler fern *Dryopteris dilatata*. A sapling ash tree is also present. By consequence of this, the g1d present on-site is assessed as being a poor representation of the habitat type.

(v) Target Note 5: Tall forbs and ruderal / ephemeral

Areas of hardstanding along the site's southern boundary, adjacent to the Titus Cottage extension, have been colonised by various tall forbs, ruderal, and ephemeral species. These include nettle, rosebay willowherb *Chamaenerion angustifolium*, bramble *Rubus fruticosus* agg., cleavers, broad-leaved dock, field forget-me-not *Myosotis arvensis*, daisy *Bellis perennis*, clover, creeping buttercup *Ranunculus repens*, and cuckooflower *Cardamine pratensis*. Occasional *Prunus* shrubs are scattered throughout. Grass species from the adjacent grassland have also colonised this area.

An area of bramble scrub is present between tall forbs and ruderal / ephemeral habitats (see Figure 1).

Brash piles, rubble, and corrugated sheeting are scattered throughout these habitats.

(vi) Target Note 6: 524 – Invasive non-native species

A stand of Himalayan balsam was recorded at the site's eastern boundary, centred at grid reference SD 7639 0952.

3.3 PROTECTED SPECIES SURVEYS

3.3.1 Badger Survey

(i) Setts

The survey found no setts on site or within 50m of the site.

(i) Foraging Signs and Pathways

No sign of badger activity was found on site or within searched areas surrounding the site.

(ii) Boundary Search

All of the boundaries of the site were walked and examined for potential runs, pathways, and latrines. The search found no evidence to suggest badger activity along any of the site boundaries.

The absence of any activity signs indicates that badgers are not entering the site. The absence of latrines indicates a lack of territorial activity in the near vicinity of the site.

3.3.2 Bat Assessment

(i) Preliminary Roost Assessment

The only built structure present on-site is a storage container, which supports negligible bat roosting potential.

Six trees were identified as supporting features suitable for individual and multiple roosting bats. These are described further in Table 3.1 below.

Table 3.1: Tree Roost Feature Details

Tree ref	PRF description	PRF suitability
T1	Semi-mature sycamore at site's southern boundary, adjacent to other lowland acid grassland. Supports a small amount of peeling bark and a small number of holes.	Low
T2	Mature ash within line of trees at site's eastern boundary. Large, sheltered cavity between co-dominant stems.	Moderate

T3	Mature sycamore within line of trees, with small cracks and a small amount of peeling bark.	Low
T4	Semi-mature sycamore within line of trees. Largely in good condition, but very occasional cracks and peeling bark provide limited opportunities for roosting bats.	Low
T5	Mature sycamore within line of trees, showing signs of decay (rotting). Small amounts of peeling bark identified.	Low
T6	Semi-mature sycamore within ornamental hedgerow at site's western boundary. Small cracks and peeling bark.	Low

(ii) Bat Habitat Suitability

The site is dominated by modified grassland and as such the site as a whole has limited suitability for bats. The eastern boundary of the site is bounded by a mature, ecologically valuable line of trees which provides localised foraging and commuting opportunities. Other woody linear features, and scattered trees and shrubs across the site, provide additional foraging opportunities, though these are notably limited in their extent and suitability.

The linear features at the sites eastern and western boundaries also provide connectivity to additional, offsite foraging and commuting habitats.

Based on the habitats present on-site and within the surrounds, the site is considered to be of 'moderate' suitability.

3.3.3 Bird Assessment

No evidence of current or historic bird nesting evidence was recorded during the survey.

The line of trees, bramble scrub, and native shrubs provide some nesting opportunities, though with the field dominated by managed grassland the suitability of the site as a whole is limited. The site provides limited opportunities for ground nesting birds, which tend to prefer larger open areas to mitigate predation risk.

Bird activity during the survey was low. Species recorded include wood pigeon *Columba palumbus*, magpie *Pica pica*, wren *Troglodytes troglodytes*, blackbird *Turdus merula* and jackdaw *Corvus monedula*. Of particular note, however, was the presence of curlew *Numenius arquata*, a Red-listed species, making use of grassland approximately 65m to the south of the site. As outlined above, however, it is unlikely that curlew would make use of the site, due to its size and the habitats present.

Habitat associated with the site is considered to be of 'moderate' suitability for breeding birds.

4. EVALUATION AND RECOMMENDATIONS

4.1 DESK STUDY

4.1.1 Statutory Designated Sites

There are no international or nationally designated statutory sites within the site or within 2km of the site.

The Natural England (NE) Impact Risk Zone (IRZ) tool² has been reviewed and states that there is no requirement to consult NE for this proposal.

(i) Recommendations: Statutory Designated Sites

Due to the scale and nature of this proposal there is no requirement for any further assessment or consultation.

4.1.2 Non-statutory Designated Sites

There are no known non-statutory designations within the site.

Ainsworth Lodge SBI is located approximately 450m southeast of the site. The site is designated primarily for its amphibian species.

The A58 Bury and Bolton Road separates the site from the SBI, likely impeding the movement of any amphibians making use of the SBI to the area surrounding the site. Drainage from the proposed dwelling will be managed through existing infrastructure, and as such there is anticipated to be no impact on the hydrology of Ainsworth Lodge SBI.

(i) Recommendations: Non-statutory Designated Sites

There are no impacts anticipated to Ainsworth Lodge SBI and as such, no further assessments are required.

4.2 HABITATS

The existing habitats on site are of low to medium distinctiveness.

The majority of habitats are of limited botanical interest (i.e. modified grassland, tall forbs, bramble scrub), comprised of common and widespread species. No Priority, protected, or notable habitats are present on or immediately adjacent to the site. Areas of elevated botanical interest, namely the line of trees along the eastern site boundary, and the other lowland acid grassland to the southeast, will be retained under current proposals. Furthermore, the proposals will likely impact no more than 50% of the area on-site, concentrated to the west.

Himalayan balsam, a Schedule 9 invasive species, is recorded at the site's eastern boundary. Disturbance to this area is not anticipated under current proposals.

On-site habitats impacted by the proposals do not exceed 'site' ecological value. Nonetheless, the development will need to ensure appropriate compensation for the loss of habitats.

² GIS tool developed by Natural England to make a rapid initial assessment of the potential risks posed by development proposals to statutorily designated sites

(i) Recommendations: Habitats

A biodiversity net gain (BNG) metric calculation has been undertaken, which has provided a baseline habitat value and indicates how the proposal will achieve a measurable 10% net gain, in accordance with national and local planning policy.

Himalayan balsam is a Schedule 9 invasive species under the Wildlife and Countryside Act 1981 (as amended), and is therefore subject to a number of prohibitions to prevent its further spread in the environment. The location of this species on-site is well-separated from the proposed development footprint, and as such the risk of an offence is likely to be low. However, precautions should be in place to ensure spread is controlled.

4.3 BADGERS

No evidence of badger activity was found within the site or the wider area during the survey.

It is concluded that badger are currently absent on-site.

(i) Recommendations: Badgers

There are no requirements for further surveys or assessment.

4.4 BATS

Bats are comprehensively protected under European legislation (Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019).

Six trees were assessed as supporting bat roosting potential.

The habitats associated with the site and surrounding area are of some value to bats, most notably the line of trees in the east, and the hedgerows in the west. These provide foraging opportunities on-site, and connectivity to offsite suitable habitat. Individual trees such as T1 provide localised foraging opportunities.

All suitable foraging and commuting habitat will be retained under current proposals, and indeed additional opportunities will be generated by the creation of new native hedgerow.

(i) Recommendations: Bats

All six trees supporting bat roosting potential will be retained under current proposals, and are well separated from the proposed development. As such, no further survey work is required.

In all cases illumination of peripheral boundary areas should be avoided. Where lighting is required, this must be low level, low intensity and directed downwards away from boundaries. The following principles will apply;

- Where and if lighting is required, this will be directed internally within the site avoiding spillage towards boundary habitats.
- The use of low powered sodium lights or similar will be used and these will be fitted with cowls / covers that prevent lateral light spillage towards boundary habitats.
- Wherever possible and only if required low level (1-1.5m high) bollard lighting will be used.
- If required lights will be fitted with timer controls that minimise the duration of lighting.

Lighting requirements will follow guidance provided by the Bat Conservation Trust; links are provided below.

- Bat Conservation Trust's Artificial Lighting Guidance. Webpage link <https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting>

- Bat Conservation Trust and Institute of Lighting Professionals Guidance Note 08/23: Bats and Artificial Lighting in the UK. Webpage link <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

4.5 BIRDS

All breeding birds (with only minor exceptions) are offered various levels of protection under the Wildlife and Countryside Act (1981) as amended.

Nesting provisions are provided on-site by native shrubs, bramble scrub, individual trees, hedgerows, and line of trees. All trees and hedgerows will be retained under proposals; however the bramble scrub and some shrubs will be lost.

The site is unlikely to support a bird assemblage above 'site' ecological value.

(i) Recommendations: Birds

Removal of bird nesting habitat should be conducted outside of the nesting bird season, March – September inclusive. If habitat removal must be conducted within this window, a nesting bird survey must be performed by a suitably qualified ecologist beforehand. Results of this survey are valid for two days.

Additional bird nesting provisions should be included upon the new buildings. These enhancement measures would contribute to achieving an overall biodiversity net gain for this proposal.

Bird nesting provisions could include:

- Standard bird nest boxes which could support common garden and farmland bird species (e.g. 1B Schwegler nest box).
- Swift boxes, or swift bricks (which can be incorporated into buildings), which support swifts and other red-listed bird species (e.g. 1A Schwegler swift box).

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Greater Manchester Local Record Centre (GMLRC) MapApp. Latest access 01/06/2024. <https://gmlrc.org/mapapp/>

Appendix A: Site Photographs



Photograph 1: Overview of the eastern part of the site at the location of the proposed development. Modified grassland dominates. Bramble scrub, tall forbs, ruderal / ephemeral vegetation, and occasional shrubs are visible adjacent to the Titus Cottage extension.



Photograph 3: Lateral view of the line of trees, and tall forb / modified grassland ground flora at the eastern boundary.



Photograph 2: Overview of the western part of the site, dominated by modified grassland. The line of trees along the site's eastern boundary is visible in the right of the photograph.



Photograph 4: Other lowland acid grassland growing along stone wall at site's southern boundary.



Photograph 5: Central area of modified grassland within the site, at the location of the proposed vegetated garden. A small brash pile and associated tall forbs is visible centrally.



Photograph 8: Ruderal / ephemeral vegetation adjacent to exposed hardstanding. Rubble is visible to the rear.



Photograph 6: Tall forbs; the presence of corrugated sheets and brash piles elevate the suitability of this area for reptiles.



Photograph 9: Modified grassland, hardstanding, and offsite hedgerow at site entrance.



Photograph 7: Tall forbs and adjacent bramble scrub along site's southern boundary.

Appendix B: Figures

Figure 1 – UKHabs Baseline Map



Appendix C: Condition Assessment Sheets

Modified Grassland Condition Assessment Sheet

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Modified grassland			
Site name and location		On-site or off-site	
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	
Habitat Description			
ukhab - UK Habitat Classification			
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.	Yes	
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.	No	
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.	Yes	
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.	Yes	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	No	
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Yes	
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Yes	
		Essential criterion achieved (Yes or No)	
		Number of criteria passed	
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)		
Suggested enhancement interventions to improve condition score			

Other Lowland Acid Grassland Condition Assessment Sheet

ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	No	
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.	Yes	
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens¹.	No	
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Yes	
E	Combined cover of species indicative of sub-optimal condition² 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 species³ (as listed on Schedule 9 of WCA⁴) are present, this criterion is automatically failed.	No	
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	No	
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)			
Number of criteria passed			

Hedgerow Condition Assessment Sheet

Hedgerow favourable condition attributes					
Attributes and functional groupings (A, B, C, D and E)		Criteria - the minimum requirements for 'favourable condition'	Description	Criterion passed (Yes or No)	Notes (such as justification)
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.	Y	
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/A	
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.	N/A	
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 Does not fail both attributes 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 Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition).	1			
Score achieved:					

Individual Trees Condition Assessment Sheet

Condition Sheet: INDIVIDUAL TREES Habitat Type													
Habitat Type(s)													
Individual trees – Urban trees													
Individual trees – Rural trees													
Complete a condition sheet for each tree or block of trees.													
Please see separate Line of trees condition sheet for a line of Rural trees.													
Habitat Description													
Individual trees (description applied to the urban or rural environment): Young trees over 7.5 cm in diameter at breast height whose canopies are not touching.													
Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only): Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies must overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category.													
Site name and location		On-site or off-site											
		Survey reference (if relating to a wider survey)											
Limitations (if applicable)		Habitat parcel reference											
		T1	T7										
Condition Assessment Criteria		Grid reference											
		Criterion passed (Yes or No)										Notes (such as justification)	
A	The tree is a native species (or at least 70% within the block are native species).	N	Y										
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).	Y	Y										
C	The tree is mature (or more than 50% within the block are mature).	Y	N										
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.	Y	Y										
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Y	N										
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	Y										
Number of criteria passed		5	4										
Condition Assessment Result (out of 6 criteria)	Condition Assessment Score	Score Achieved */✓											
Passes 5 or 6 criteria	Good (3)												
Passes 3 or 4 criteria	Moderate (2)												
Passes 2 or fewer criteria	Poor (1)												
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.													
Suggested enhancement interventions to improve condition score													

Line of Trees Condition Assessment Sheet

Condition Sheet: LINE OF TREES Habitat Type			
Habitat Type(s)			
Line of trees			
Line of trees – associated with bank or ditch			
Ecologically valuable line of trees			
Ecologically valuable line of trees – associated with bank or ditch			
Habitat Description			
See the Biodiversity Metric 4.0 User Guide Section 9. This assessment is based on the Hedgerow Survey Handbook¹. For further clarifications please refer to the Handbook. Where ancient and veteran trees are present within the line of trees, see Footnote 2 for standing advice.			
Site name and location		On-site or off-site	
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	At least 70% of trees are native species.	N	
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.	Y	
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 .	Y	
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	4
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)		
Passes 2 or fewer criteria	Poor (1)		
Suggested enhancement interventions to improve condition score			
Footnotes			

Sparsely Vegetated Land Condition Assessment Sheet

Limitations (if applicable)		Habitat parcel reference										Notes (such as justification)
		Ruderal	Tall forbs									
Condition Assessment Criteria		Grid reference										Notes (such as justification)
		Criterion passed (Yes or No)										
Core Criteria - must be assessed for all urban habitat types :												
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.	Y	N									
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.	Y	Y									
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).	Y	Y									
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 at least four early successional communities (a) to (h) PLUS bare substrate. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.	N/A	N/A									
D2	The parcel contains pools of water such as permanent and ephemeral waterbodies.	N/A	N/A									
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 .	N/A	N/A									
E2	The vegetation is comprised of plant species suited to wetland or riparian situations.	N/A	N/A									
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).	N/A	N/A									
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.	N/A	N/A									
Essential criteria relevant for habitat type achieved (Yes or No)												
Number of criteria passed		3	2									