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Preliminary Ecological Appraisal

January 2025

Project Reference: PR-0408-24

Morton House Farm
Birdy Brow
Clitheroe
BB7 9QY

National Grid Reference: SD 68804 40270

Document Title	Preliminary Ecological Appraisal
Project Reference	PR-0408-24
Prepared for	P Wilson & Company
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This report aims to provide general advice on ecological constraints associated with any development of the site and includes recommendations for further survey; it is not intended that this report should be submitted with a planning application for development of the site, unless supported by the results of further surveys and a detailed assessment of the effects of the proposed development.

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Executive Summary

As part of an ongoing planning application with Ribble Valley Borough Council (Ref: **3/2024/0867**) concerning Morton House Farm in Clitheroe, Tyrer Ecological Consultants carried out a Preliminary Ecological Appraisal (PEA) in December 2024.

The PEA was commissioned by P Wilson & Company; proposals include the change of use of land for the construction of a domestic equestrian riding arena incorporating pathways for the applicant and their horses; associated landscaping (hedge planting) to provide additional screening. There is an additional red-line boundary within the wider ownership for an area to the south set aside for habitat enhancement.

Extensive findings, conclusions and recommendations are presented throughout the report; however, the reader should be aware of the following key recommendations.

Biodiversity Gain

Based on the information gathered during the diurnal assessment Morton House Farm is **not exempt** from the Biodiversity Gain Planning Condition.

The site is host to the following biodiversity value:

- Habitat: **0.83**
- Hedgerow: **0.06**
- Watercourse: **0.00**

Bats:

Previously installed bat mitigation in the form of a bat box, is installed on the north-west gable of the nearby dwelling, within approximately 50m of the proposed work site.

*Any installation of light fixtures for the riding arena must be cloaked/covered from the direction of the bat box to prevent disturbance to any roosting bats. Installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon foraging / commuting bats in the landscape, subject to their presence. A bat-sensitive lighting plan is therefore recommended in order to avoid potential impacts to bats that may use the area. See **Section 7.0** for further information.*

Breeding birds:

In relation to the Schedule 1 species, a barn owl box has been previously installed as part of previous mitigation for an identified barn owl nest.

*It is recommended that a buffer zone is maintained with a distance of 50-100m during the breeding season (April-August) and >50m outside of the breeding season in order to reduce the risk of disturbance to this Schedule 1 species. It is recommended that heavy machinery and vehicles are kept out of this buffer zone particularly during the early nesting period. See **Section 7.0** for further information.*

Other terrestrial mammals:

Hare and hedgehog have the potential to be impacted by the proposed development. Therefore, a programme of Reasonable Avoidance Measures (RAMs) should be undertaken and carried out at the site during development, particularly where excavations / trenches will be made.

*See **Section 7.15** for details on the RAMs required.*

Biodiversity enhancement:

As a means of improving biodiversity value / enhancing the site any new landscaping should aim to incorporate majority use of native species as opposed to non-native exotic species which offer significantly fewer benefits to our native fauna. Suitable species for native landscaping have been provided in **Appendix IV**.

Table of Contents

1.0 Introduction & Scope

1.1 As part of an ongoing planning application with Ribble Valley Borough Council (Ref: **3/2024/0867**) concerning Morton House Farm in Clitheroe, Tyrer Ecological Consultants carried out a Preliminary Ecological Appraisal (PEA) in December 2024.

1.2 The PEA was commissioned by P Wilson & Company; proposals include the change of use of land for the construction of a domestic equestrian riding arena incorporating pathways for the applicant and their horses; associated landscaping (hedge planting) to provide additional screening. There is an additional red-line boundary within the wider ownership for an area to the south set aside for habitat enhancement. See **Figure 1.1** for the proposed site plan.

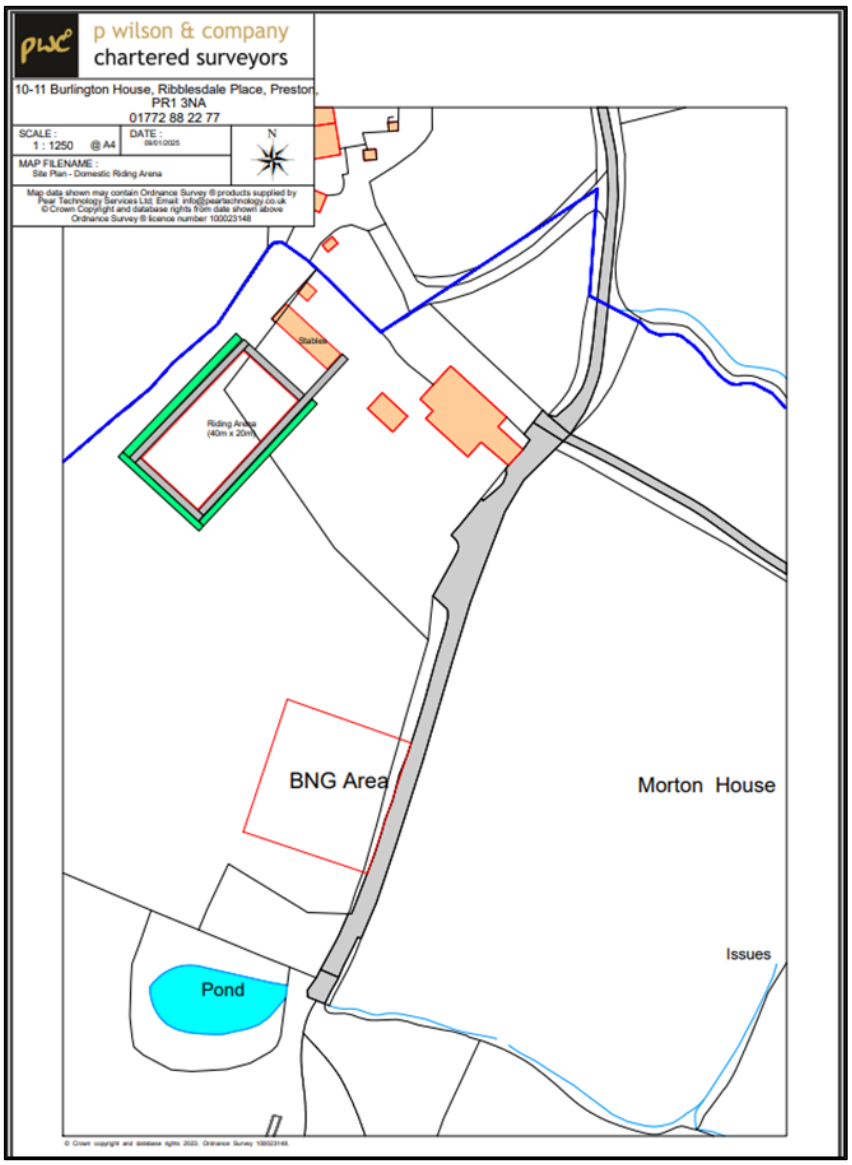

Figure 1.1 – *Proposed site location plan outlined in green, within wider site ownership blue line boundary (© P Wilson & Company)*

1.3 As part of the Local Planning Authorities (LPA) planning policies and obligations to the Planning Framework, ecological surveys are generally required prior to planning permission being granted, particularly where protected / priority habitats or species are, or may be, present, and where these species have the potential to be impacted by the proposals for which the applicant seeks consent.

1.4 The PEA was carried out in accordance with the 'Guidelines for Preliminary Ecological Appraisal, 2nd Edition' (CIEEM, 2017) and all associated 'CIEEM Competencies for Species Survey (CSS)', whilst this report has been presented in accordance with the British Standard 42020:2013 Biodiversity – Code of Practice for Planning and Development.

Aims & Objectives

1.5 The appraisal aims to ascertain the baseline nature of the site and, where possible, obtain information on any priority wildlife habitats, or species, that may be present and if so determine if they will be affected by the proposals. The survey, therefore, includes the following objectives:

- Gather and present baseline ecological information on site/off site (as necessary) within a suitable report,
- Identify, measure and map habitats using UK Habitat Classification – Habitat Definitions Version 2.0 (2023) habitats,
- Identify any likely ecological constraints associated with the proposals for the site (i.e. the presence of protected / priority habitats or species that exist within the confines of the application boundary, or zone of influence (ZOI),
- Identify measures likely to be required in line with the mitigation hierarchy (i.e. impact avoidance > minimisation > mitigation > compensation),
- Identify any additional survey requirements,
- Ascertain the baseline value of the habitats on site, to allow for the completion of a 'Biodiversity Statement',
- Identify general enhancement opportunities for biodiversity in line with national and local planning policy,
- Set out any requirements for post-development monitoring, management, or other commitments, and how they can be secured, where required.

1.6 As a functioning component of this specific ecological appraisal:

- Habitats on site were identified, measured and mapped using the UK Habitat Classification – Habitat Definitions Version 2.0 (2023),
- Buildings and trees, where present, were subject to preliminary roost assessment (PRA) for Bats and scored against the bat roost suitability parameters defined in the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023)
- The pond onsite was assessed for its potential to host breeding populations of great crested newt (GCN) (*Triturus cristatus*) using the Habitat Suitability Index (HSI),
- Habitats were assigned in accordance with Biodiversity Net Gain Principles and Rules (DEFRA, February 2024) covered in the most recent User Guide[1].

1.7 This report therefore provides important <u>baseline</u> information as derived from the diurnal appraisal process outlined above and recommends any necessary additional surveys, or work, where applicable, to provide a conclusive ecological impact assessment.

[1] See: https://assets.publishing.service.gov.uk/media/65c60e0514b83c000ca715f3/The_Statutory_Biodiversity_Metric_-_User_Guide_.pdf

1.8 The Applicant should be aware then that if during the appraisal:

- The application site/area was found to be suitable for any European Protected Species (EPS), otherwise protected, or priority habitats / communities / species, or,
- Signs of use by particular protected species were found, or suspected, or,
- Seasonal constraints significantly limit the gathering of ecological information to arrive at an accurate conclusion on which the planning application can proceed;

Then more detailed surveys may be recommended where necessary, to allow the ecologist to arrive at a conclusive impact assessment.

1.9 If protected species were subsequently found either during appraisal or during detailed further surveys and / or may be affected by the development proposals, then a European Protected Species Mitigation Licence (EPSML) may be required to proceed with the development.

1.10 Where more detailed surveys are recommended by the Ecologist, following ecological appraisal, then Local Planning Authorities (LPA's), on the advice of their ecological advisors, may not grant permission until such time that all relevant material information is gathered in accordance with their obligations to the legislature.

1.11 Protected / priority species omitted from this report have been discounted due to negating factors including obvious absence / isolation of suitable habitats, and / or distributional aspects negating the necessity to survey for them, and/or the proposed works were not considered to impact the species or encroach on areas where the species may be present.

2.0 Legislation & Policy

2.1 The legislature considered for the purposes of this report includes the following:

- Biodiversity Net Gain: Good practice principles for development (2019),
- BS 42020:2013 Biodiversity – Code of Practice for Planning and Development (2013),
- Conservation of Habitats and Species Regulations (2017) (as amended),
- Countryside Rights of Way (CRoW) Act (2000),
- Natural Environment and Rural Communities (NERC) Act (2006),
- National Planning Policy Framework (2023) (as last revised),
- Protection of Badgers Act (1992),
- The Environment Act (2021), including all six statutory instruments in relation to BNG,
- The Hedgerow Regulations (1997),
- The Invasive Alien Species (Enforcement and Permitting) Order 2019,
- Town and Country Planning Act (1990),
- Wild Mammals Protection Act (1996),
- Wildlife and Countryside Act (1981) (as amended).

2.2 These acts entail relevance to both protected and invasive species. The degree of protection offered to taxa provided within existing UK and EU legislature often varies depending on species / group, for example, some species may purely be protected during one of its life stages (e.g. common species of breeding bird whilst nesting / with eggs / young); some species may receive full protection within the EU, whereas others may be protected solely on a national basis (e.g. grass snake).

2.3 **Table 2.1** contains appropriate legislature to each species / group specifically respective to the site and provides the relevance of said legislation.

Table 2.1 – Relevant legislation

Species Group/Species	Relevant Legislature	Level of Protection
Badger	Protection of Badgers Act (1992), Wildlife and Countryside Act (1981) (as amended)	Illegal to: Wilfully kill, injure or take a badger (or attempt to do so), cruelly ill-eradicate a badger, dig for a badger, Intentionally or recklessly damage or destroy a badger sett or obstruct access to it, cause a dog to enter a badger sett, disturb a badger when it is occupying a sett.
Bats	CRoW Act (2000) Conservation of Habitats and Species Regulations (2019) (EU Exit) Wildlife and Countryside Act (1981) (as amended)	All British bats and their roosts are afforded full protection from damage/destruction and bats may not be injured/killed/taken at any life stage. Once identified, roosts are protected whether the bat is in occupation or not.

Birds (Breeding)	CRoW Act (2000) Wildlife and Countryside Act (1981) (as amended)	All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected. Birds listed on Schedule 1 Wildlife & Countryside Act (1981) (as amended) are afforded a greater level of protection.
Great Crested Newt (GCN)	CRoW Act (2000) Conservation of Habitats and Species Regulations (2019) (EU Exit) Wildlife and Countryside Act (1981) (as amended)	Great Crested Newts (GCN's) are fully protected from disturbance, killing, injuring or possession at any life stage. Confirmed breeding ponds and resting places are afforded the same protection.
Invasive Plant Species	Wildlife and Countryside Act (1981) (as amended) The Invasive Alien Species (Enforcement and Permitting) Order 2019	Species listed within Schedule 9/Schedule 2 as invasive, including Japanese knotweed (*Reynoutria japonica*) and Himalayan balsam (*Impatiens glandulifera*), for example, carry notoriety regarding development. The Acts make it an offence for any person to grow or cause to grow in the wild any plants listed as invasive.
Reptiles	Conservation of Habitats and Species Regulations (2019) (EU Exit) - SL/SS Wildlife and Countryside Act (1981) (as amended) - SL/SS CRoW Act (2000)	All native reptile species have some degree of protection in the UK, through section 8(1) and (5) (specified in Schedule 5) of the Wildlife and Countryside Act 1981 (as amended). Sand lizard (SL) and smooth snake (SS) are species of principal importance however with greater protection(s).

Relevant Policy

2.4 Guidance for Local Authorities: Extract from Office of the Deputy Prime Minister – Circular 06/2005:

"It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision".

2.5 Paragraph 193 of the National Policy Planning Framework (as revised in December 2024) states:

When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

2.6 The Ribble Valley Borough Council Core Strategy (2008-2028) echoes the NPPF in key statement EN4, titled Biodiversity and Geodiversity, where it states:

"The council will seek wherever possible to conserve and enhance the area's biodiversity and geodiversity and to avoid the fragmentation and isolation of natural habitats ad help develop green corridors. Where, appropriate, cross-Local Authority boundary working will continue to take place to achieve this.

Negative impacts on biodiversity through development proposals should be avoided. Development proposals that adversely affect a site of recognised environmental or ecological importance will only be permitted where a developer can demonstrate that the negative effects of a proposed development can be mitigated, or as a last resort, compensated for. It will be the developer's responsibility to identify and agree an acceptable scheme, accompanied by appropriate survey information, before an application is determined. There should, as a principle, be no net loss of biodiversity."

Priority Habitats & Species

2.7 In the United Kingdom, legal protection and otherwise legislative recognition is afforded to particular habitats and species based on a variety of ecological factors. These are typically referred to as priority habitats and species and can be identified under a variety of legislation and local policy, notably the UK Biodiversity Action Plan (UKBAP), Section 41 (s.41) of the NERC Act as well as under Local Biodiversity Action Plans (LBAPS).

Biodiversity Net Gain

2.8 The National Planning Policy Framework (NPPF), revised in December 2024, legislates net gain in biodiversity through paragraphs 8(c), 187(d), 192(b) and 193(d). An effort should be made, therefore, through the development design to provide ecological enhancement in order to deliver an overall increase in biodiversity, and opportunities to incorporate biodiversity in and around developments should be encouraged.

2.9 The Environment Act 2021 ('The Act') came into force in November 2021. Aspects of the Act relating to BNG came into force on the 12th February 2024, whereby BNG is mandatory under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021).

2.10 The Act is supported by secondary legislation, consisting of six statutory instruments laid within law, of which the relevant legislation includes:

- The Environment Act 2021 (Commencement No. 8 and Transitional Provisions) Regulations 2024[2]
- The Biodiversity Gain Site Register Regulations 2024[3]
- The Biodiversity Gain Site Register (Financial Penalties and Fees) Regulations 2024[4]
- The Biodiversity Gain Requirements (Exemptions) Regulations 2024[5]
- The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024[6]
- The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024 [7]

[2] https://www.legislation.gov.uk/uksi/2024/44/contents/made
[3] https://www.legislation.gov.uk/uksi/2024/45/contents/made
[4] https://www.legislation.gov.uk/uksi/2024/45/contents/made
[5] https://www.legislation.gov.uk/uksi/2024/47/contents/made
[6] https://www.legislation.gov.uk/uksi/2024/48/contents/made
[7] https://www.legislation.gov.uk/uksi/2024/50/contents/made

3.0 Methodology

3.1 As part of the ecological appraisal report, a desk-top and field-based study is conducted. Methods for both components of the appraisal are given below.

Desktop Study

3.2 Prior to a site visit, a desktop study was conducted using online resources to obtain information pertaining to any sites afforded statutory (e.g. SSSI) and non-statutory (e.g. LWS) designations for nature conservation within 2.0 kilometres of the site boundary. To do so, the Multi Agency Geographic Information for the Countryside (MAGiC – provided by DEFRA) was accessed to gather such information; this particular interactive mapping service was also used to locate any locally granted European Protected Species Mitigation Licenses (EPSML) and species records to further inform conclusions concerning such species in the context of the study site and its proposed development.

3.3 Historic satellite imagery was reviewed using sources such as Google Earth (© 2023/24) to help establish past use of the land and determine the nature of adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and how the development may impact at a wider scale.

3.4 In addition, the Ribble Valley Borough Council 'Search Planning Applications' online function was utilised to help inform the desktop study by analysis of existing publicly accessible ecological survey results that have been carried out locally within the previous five years.

3.5 A commercial data request to the Local Environment Records Centre serving the area, in this case Lancashire Environmental Records Network (LERN), has not been sourced at this time, with the combination of online EPSML data, extensive company records and the daytime survey data available to the ecologist considered to contain enough information in relation to the protected species likely to be present on site. **If, however, a data search is considered to be necessary by the Local Authority or advisory body to better inform the appraisal, a proportionate data search should be commissioned with results interpreted into the conclusions and recommendations of a re-issued / updated report.**

1) The Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK (CIEEM, 2020) states data searches in:

"*Situations where the data search would be extremely unlikely to provide information needed to inform the assessment, due to the scale and location of the proposed development. The appropriateness of excluding a data search will need to be judged on a case-by-case basis as, in most situations, it will be essential to carry out such a search even if the development is very small or is likely to have a low impact."*

Field survey

3.6 A daytime preliminary ecological appraisal was conducted on the 3rd December 2024 in dry, cold conditions (5ºC), average wind 2/12 (Beaufort scale), average 80% cloud cover, by the following surveyor (see **Table 3.1** overleaf).

Table 3.1 – Site surveyor credentials

Name	Description of most relevant credentials
Mr. D. Burrows Qualifying CIEEM	• Project Ecologist with 5 years of training and experience • Relevant Degree: BSc (hons) Wildlife Conservation; MSc Conservation and Biodiversity • Licensed for Great Crested Newt: CL08 (Great Crested Newt Survey Level 1) – 2022-10604-CL08-GCN. • Licensed for Sand Lizard & Natterjack Toad (2024-68402-SCI-SCI). • Accredited agent on the (Class 2) Natural England bat license of Mrs. K. Wilding (CLS-14227). • Botanical FISC Level 3 qualified • Meets 'Capable' requirement within the CIEEM Competency Framework • Trained in UK Habs / Statutory Metric condition assessments

Floristic assessment

Habitats

3.7 The survey followed the UK Habitat Classification Version 2.0 (UKHabs, 2023) methodology, which was introduced as the successor to the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology standards (JNCC, 2010) in conjunction with the nationwide roll out of Biodiversity Net Gain. Survey techniques were also carried out with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Technical Guidance Series "Guidelines for Preliminary Ecological Appraisal, 2nd Edition" (CIEEM, 2017).

Vegetation

3.8 During the survey walkover, botanical assemblages were assessed, and the land was inspected for the presence of red-listed (Stroh et al., 2014; Hodgetts, 2011), s.41 and LBAP species alongside specially protected species as listed under Schedule 8 of the Wildlife and Countryside Act (WCA) (1981) (as amended) and / or Schedule 5 The Conservation of Habitats and Species Regulations (2017) (as amended). Species nomenclature follows Stace, C. (2019) – definitive English names.

3.9 In addition to attributing ecological value to red-listed / BAP species, in accordance with existing CIEEM guidance, a geographic frame of reference is also adopted. Plant species and habitats may be recognised for their ecological value on a geographical scale which is adopted on a site-to-site basis (*International – National – Regional – County/Vice-County – Local*). For botanical species list compiled in full, see **Appendix III**.

3.10 In combination with assessing the area in relation to flora and habitats of conservation importance, the land was also assessed in relation to the presence of invasive non-native species (INNS) as listed under Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) (as amended) and Schedule 2 of The Invasive Alien Species (Enforcement and Permitting) Order 2019 (IASO).

Biodiversity Net Gain

3.11 Assessment of baseline Area Habitat / Hedgerow / Watercourse units have been carried out and assessed separately in accordance with the guidance, principles, and rules – where present on site.

3.12 Measurement of habitats was carried out using a combination of desktop software – QGIS, Google Earth and MAGiC Maps 2023/24, whilst physical habitat measurements were also taken in the field during ground truthing, where necessary.

Faunal assessment

3.13 During the site walkover, direct presence and / or evidence of priority fauna encountered was documented, whilst in tandem the area was assessed for the potential to support the priority species discussed in **Section 6.0**. The walkover also aimed to identify any ephemeral pools or unmapped waterbodies.

Bats

3.14 Criteria for preliminary bat roost assessment are based upon the determinants given in the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023) (see **Figures 3.1 – 3.3**).

3.15 The site was assessed for bats; a daytime bat walkover (DBW) was undertaken to observe, assess and record any habitats or features suitable for usage by bats, either as commuting, foraging or roosting provision. Wider connectivity to other habitats was also considered during the DBW.

3.16 Buildings and other permanent / semi-permanent structures (where present) would be subject to a preliminary roost assessment (PRA), to identify potential areas which may be of value to bats and to determine evidence of use. This typically involves a systematic search of the external aspects of any structure(s), comprising an investigation of features known to be used by bats (for example roofing material, soffits, fascia, lead flashing hanging tiles) using a high-powered torch and close-focus binoculars, where necessary. Where possible, an internal assessment of the structure was also carried out, with the aid of a high-powered torch and endoscope, where necessary, to identify any evidence of bat use of a structure. Field signs of bats typically comprise bat droppings, urine splashing, fur-oil staining, incidental animal presence, dead specimens and / or the presence of prey items, such as moth wings.

3.17 Trees (where present) would be subject to a ground level tree assessment (GLTA) using equipment such as close-focus binoculars and a high powered-torch. Potential roost features (PRFs) can include woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed lifted bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached climbing species with stem diameters in excess of 50mm or pre-existing bat / bird boxes. These PRFs can then be determined as PRF-I or PRF-M, dependent on their suitability for individual / low numbers of bats or their capability to host multiple bats.

3.18 Factors considered during the preliminary roost assessment include:

- Practical experience of the surveyor,
- Knowledge of bat species relevant to the site location and geographical range,
- Nature of the immediate / surrounding habitat in relation to foraging opportunities,
- Presence / absence of roost potential,
- Value and types of roost potential, if present (i.e. – maternity, hibernation, transitional).

Table 4.1. Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Potential suitability	Description	
	Roosting habitats in structures	**Potential flight-paths and foraging habitats**
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible[a]	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[b] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats[c]).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions[b] and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions[b] and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

b For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2016 and Jansen *et al.*, 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Figure 3.1 – *BCT guidelines extract*

Table 4.2. Guidelines for assessing the suitability of trees on proposed development sites for bats, to be applied using professional judgement.	
Suitability	**Description**
NONE	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

Figure 3.2 – *BCT extract on tree roost suitability criteria*

Table 6.2. Guidelines for categorising the potential suitability of PRFs on a proposed development site for bats, to be applied using professional judgement.	
Suitability	**Description**
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

Figure 3.3 – *BCT extract on tree roost categorisation criteria*

Birds

3.19 The site was inspected for evidence of nesting and suitability for relevant species. Bird species observed and heard were recorded on site, and a search was made for nest material, or areas suitable for nesting – this can take the form of searching structures, woody vegetation, semi-aquatic vegetation such as reeds and / or ground flora. Elevations of any buildings or structures on site were inspected for evidence of birds that show a high dependency upon built structures, many of which are in a state of decline. These might include the following species for example (list non-extensive):

- **House martin** (*Delichon urbica*): Birds of Conservation Concern (BoCC) red status,
- **House sparrow** (*Passer domesticus*): BoCC red status,
- **Starling** (*Sturnus vulgaris*): BoCC red status,
- **Swift** (*Apus apus*): BoCC red status.

3.20 Additional to the site's capacity to support generally common species for breeding, the area was also subject to an assessment for wider capacity to support species with extra protection under Schedule 1 of the Wildlife & Countryside Act (1981) (as amended) and other priority species.

Other terrestrial mammals

3.21 The walkover included an assessment for the presence / suitability of badger (*Meles meles*), which includes signs of activity such as prints, hairs, digging, setts, 'runs' leading to and from a sett and the existence of latrines or 'snuffle' holes where badgers have foraged in the ground.

3.22 The site was also assessed for the presence / suitability of European hedgehog (*Erinaceus europaeus*) and other priority mammals.

3.23 The site was also assessed for the presence / suitability of brown hares (*Lepus europaeus*).

Herpetofauna

3.24 During desktop assessment, a 250 metres radial search was undertaken from a site central grid reference in relation to the presence of ponds, ditches or other water bodies that may support great crested newt (GCN) (*Triturus cristatus*). The information gathered would then be used to aid in establishing if more detailed surveys are required.

NB: *English Nature's (now Natural England) Great Crested Newt Mitigation Guidelines (2001) states ponds within 500m of a proposed development site should be considered for their potential to support GCN, however, in some instances this distance may be reduced to 250m due to the presence of physical barriers and obstructions or based on the likely magnitude of impacts arising from the proposed development.*

3.25 Following current best practice considering the partial roll out of District Level Licencing (DLL) across England and based on likely effects, a proportionate assessment of the water bodies range within 250m from site has been applied. Where a development is anticipated to affect GCN the search can be extended up to 500m or more.

3.26 The site and surrounding habitats were also assessed relative to their potential to offer suitability for wider, generalist amphibians, in addition to GCN, for example common toad (*Bufo bufo*) and common frog (*Rana temporaria*).

3.27 The site and its surroundings were assessed for suitability for use by reptiles, with particular attention paid to features that could be used as basking areas (*e.g.* south-facing slopes), hibernation sites (*e.g.* banks, walls, leaf litter, piles of hardcore) and opportunities for foraging (*e.g.* rough grassland and scrub). Beebee & Griffiths (2000) state specific habitat preferences of common UK reptiles:

- **Common lizard** (*Zootoca vivipara*) use a variety of habitats from woodland glades to heaths, walls and pastures, as well as brownfield sites,
- **Slow worm** (*Anguis fragilis*) use a variety of habitats, similar to the common lizard, however are more associated with gardens and brownfield sites.

3.28 In assessment of a site for reptiles several important habitat characteristics are considered, outlined in **Table 3.2** below, as derived from the Reptile Habitat Management Handbook (Edgar, 2010).

Table 3.2 – Important habitat characteristics for reptiles

1. Location (in respect of species range)	**7. Connectivity to good quality habitat**
2. Vegetation structure	**8. Prey abundance**
3. Insolation	**9. Refuge opportunity**
4. Aspect	**10. Hibernation habitat potential**
5. Topography	**11. Disturbance regime**
6. Surface geology	**12. Egg-laying site potential**

Invertebrates

3.29 The site was assessed for the presence of features that should be considered of high value to invertebrates. Several important features were considered, based on the assemblage descriptions provided within the Research Report "Surveying terrestrial and freshwater invertebrates for conservation evaluation" (NERR005, 2007), including but not limited to:

- Wood decay,
- Early successional mosaic habitat,
- Shaded ground layer,
- Still and flowing water.

Quality Assurance (QA)

3.30 The results, conclusions and recommendations of this report are based on a number of factors i.e.

- Skills and experience of the surveyor,
- Knowledge of flora and fauna relevant to the site location and geographical range,
- Nature of the immediate and surrounding habitat in relation to shelter, foraging and commuting opportunities.

3.31 The results, conclusions and recommendations of this report have been assessed by Mrs. K. Wilding, Director of Tyrer Ecological Consultants Ltd, and her assessment concurs with the findings and recommendations of the surveyor Mr. D. Burrows.

4.0 Limitations

4.1 This report does not contain a comprehensive list entailing the totality of botanical taxa on site. Species listed within **Appendix III** are recorded from a combination of the seasonal timing that the survey took place and botanical identification skills of the surveyor. Many plant species are only evident at certain times of the year; consequently, it is possible that some plant species may have gone undetected.

4.2 The optimal time of the year to carry out a preliminary ecological appraisal / UK Habitats survey is April to October; the survey was therefore carried out within a sub-optimal period. It is considered, however, that enough information was gathered during the diurnal appraisal on which to base ecological conclusions and recommendations, based on the habitat types encountered presenting no significant issues in such regard.

4.3 The survey took place outside of both the active bat season and the breeding bird season; whilst sub-optimal, survey timing is not considered a constraint in this instance as evidence of both of these species is evident all year round and suitability can be assessed by a competent surveyor at any time of the year.

4.4 No access limitations were experienced during the survey; in considering possible survey constraints, no significant limitations were experienced that might adversely influence the results, conclusions, and recommendations of this report.

5.0 Desk Study Results

5.1 Morton House Farm (referred to in-part as "the site") is located to the west of the River Hodder and 1km to the north of Stonyhurst village, and broadly comprises of a converted barn for residential use and associated access and areas of amenity grassland. The full site has an estimated total area of 0.50 hectares, however, the red line boundary for proposed works makes up only a small portion of this site. It is set approximately 5.6 kilometres south-west of Clitheroe town centre (see **Figure 5.1** below for location of the site within the surrounding landscape).

Figure 5.1 – *Location of the site (red boundary) within the surrounding landscape (© Google Earth Pro 2022/23)*

5.2 The immediate environment is rural and predominantly made-up of agricultural land with small settlements scattered throughout. This landscape is generally characterised by a patchwork of arable fields, intersected by hedgerows, brooks and country roads, with developments being rare and limited to farm construction and occasional large private residences. The closest settlement to the site is the village of Stonyhurst and Stonyhurst college located approximately 1.1km to the south of the site, and mostly categorised as wood pasture and parkland priority habitat. The most notable feature in the landscape is the River Ribble which runs approximately 3km to the south of the site and the River Hodder, which is a tributary that leads into the River Ribble, which is located approximately 1km to the east of the site.

5.3 Within the wider landscape there are numerous patches of priority deciduous woodland as well as ancient replanted woodland along the western bank of the River Hodder and ancient / semi-natural woodland located along the eastern bank, with further patches of this habitat located throughout the landscape. There is also a substantial area of upland heath located within the wider environment, located approximately 3.0km to the west of the site.

Relevant Planning History

5.4 A search of the Ribble Valley Council planning portal revealed eight other planning applications at the site, starting from 1992 and extending to the current application in 2024.

5.5 The most relevant application submitted in 2017 (Ref: **3/2017/0816)**, in relation to the conversion of the barn into a residential dwelling and the demolition of the other existing farm buildings, does have ecological documentation associated with it previously carried out by Tyrer Ecological Consultants. The documentation includes an inspection and assessment in relation to bats and breeding birds and subsequent bat dusk/dawn emergence report both of which concluded that the barn was being used as both a bat roost for common pipistrelle, roost for barn owl and a nest site for swallows. As part of the planning conditions for site application, bat boxes, swallow nest cups and a barn owl box were installed.

Designated sites

5.6 There are two statutory designated sites for nature conservation within 2.0km of the site (See **Table 5.1** for details and **Figure 5.2** for a visual aid).

Table 5.1 – Statutory designation type and reason for designation within 2.0km buffer

Site name	Designation type	Interest features
Forest Of Bowland (Site situated within AONB)	Area of Outstanding Natural Beauty (AONB)	The Forest of Bowland National Landscape is of national and international importance because of its unspoiled and richly diverse landscapes, wildlife and heritage, with outstanding heather moorland, blanket bog and rare birds. The fells are exceptionally important as a habitat for upland birds such as golden plover, hen harrier, merlin and ring ouzel and also includes habitats such as peatland, heather moorland, meadows, and Atlantic oak woodlands. Bowland is essentially upland country forming part of the Pennines, sharing many of the characteristics of other upland areas like the Peak District and Yorkshire Dales National Park. The fells' fringe of foothills is dissected by steep-sided valleys which open out into the rich green lowlands of the Ribble, Hodder, Wyre and Lune Valleys.
Hodder River Section (Situated 1.0km east)	Site of Special Scientific Interest (SSSI)	The Hodder catchment includes some of the most attractive landscapes within the Ribble catchment. The whole area is within the designated Forest of Bowland Area of Outstanding Natural Beauty and the uplands are in the Bowland Fells SSSI. The catchment has a highly valued fishery and is popular with anglers. Stocks Reservoir and other upland river intakes, provide a vital part of the North West's public water supply. The site has been designated a SSSI because of its geological importance.

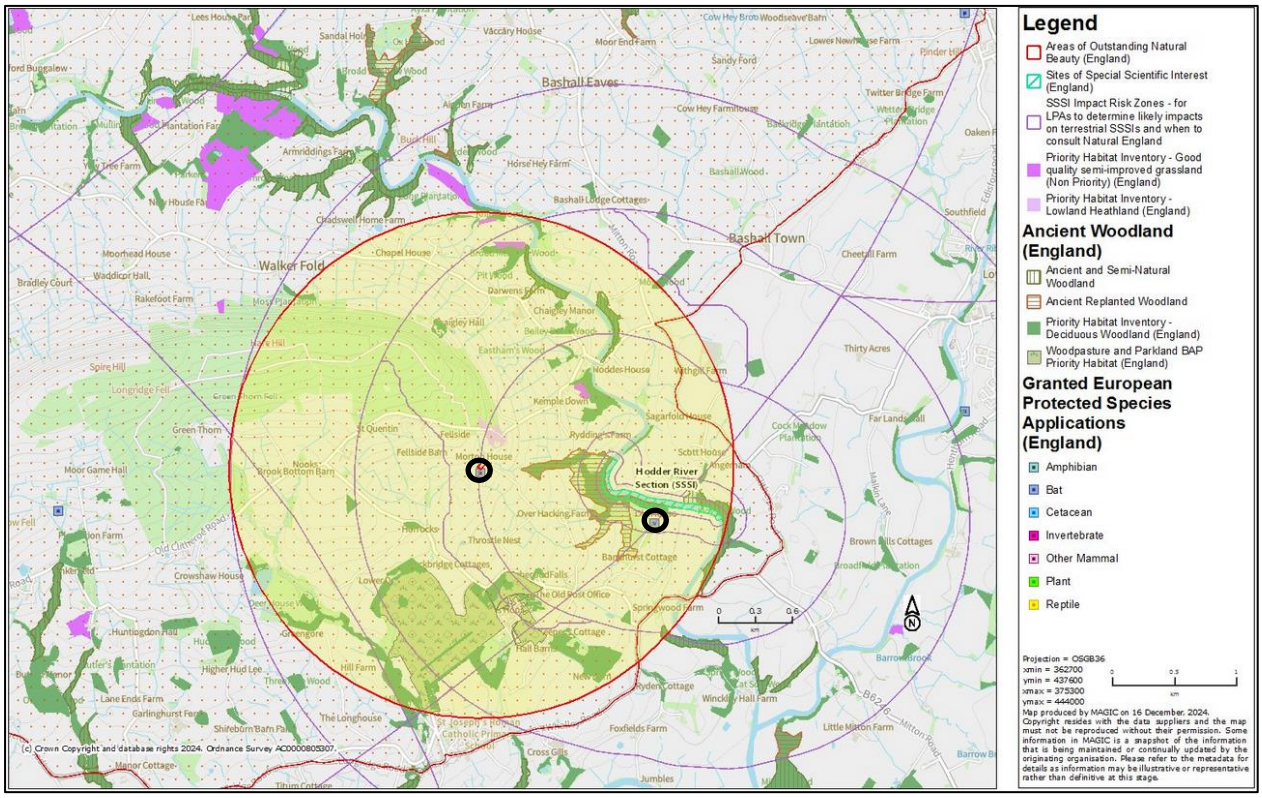

Figure 5.2 – EPSML and designated site data for the area within 2.0 kilometres of the application site; black circling shows granted bat EPSMLs (*Source: MAGiC Maps 2024*)

5.7 The site lies within the impact risk zone (IRZ) of Hodder River Section SSSI. Based upon the IRZ information available on MAGiC Maps, because of the small-scale nature of the development, it is considered highly unlikely that the application will trigger the need for further consultation with Natural England (NE) in respect of designated sites.

5.8 Where no impact to SSSI's is predicted, NE issue the following advice within their standing guidance on SSSI impact zones (NE, 2019):

"*It is important to note that the SSSI IRZs only indicate Natural England's assessment of likely risk to the notified features of SSSIs. Where they indicate such a risk is unlikely, this does not mean that there are no potential impacts on biodiversity or the wider natural environment.*"

Habitats

5.9 An online search of MAGiC Maps identified the following priority habitats within a 2.0km search radius (see **Table 5.2**).

Table 5.2 – Priority habitats located within 2.0km buffer

Habitat Type	Designation	Distance to site
Ancient Woodland	Ancient Replanted Woodland	0.4km east
Ancient Woodland	Ancient & Semi-natural Woodland	1.7km east
Deciduous Woodland	Priority Habitat Index	0.4km east
Good Quality Semi-Improved Grassland	Non-priority Habitat	1.0km north-east
Lowland Heathland	Priority Habitat Index	0.2km north
Wood Pasture and Parkland BAP	Priority Habitat Index	0.9km south

Vegetation

5.10 The site is positioned within a **moderate** zone of the 'summarised botanical value map 2022', within the moderate categories for grassland, montane and woodland habitats. However, no indicators for Rare, Scarce and Threatened (RST) botanical species or notable species assemblages were found on site.

Bats

5.11 An online search of MAGiC maps revealed that two European Protected Species Mitigation Licences (EPSMLs) have been granted within a 2.0-kilometre radius of the application (see **Table 5.3** below for further information).

Table 5.3 – EPSML data records from MAGiC Maps

Licence Number	Distance from Site	Context (where relevant)
2018-34936-EPS-MIT	On Site	**Common pipistrelle**; destruction of a resting place.
2019-42670-EPS-MIT	1.5 kilometres east	**Soprano pipistrelle**; damage of a breeding roost.

5.12 Due to the rural nature of the site and surrounding environment, it is likely subject to minimal lighting and disturbance, and the scattered trees, hedgerows and woodland provide a network of commuting corridors for bats to traverse the immediate and wider landscape to reach other areas of foraging habitat or roost sites. The species considered most likely to exist within proximity are the common pipistrelle (*Pipistrellus pipistrellus*), typically linked with roosting in occupied dwellings, as well as the Daubenton's (*Myotis daubentonii*), which is more commonly associated with waterbodies and semi-natural habitat.

Birds

5.13 The site falls within both the arable and grassland assemblage farmland bird layers on MAGiC Maps which indicates the presence of rare or declining farmland and grassland bird species. The species present within this area include curlew (*Numenius arquata*), grey partridge (*Perdix perdix*), lapwing (*Vanellus vanellus*), redshank (*Tringa totanus*), snipe (*Gallinago gallinago*), and tree sparrow (*Passer montanus*).

5.14 Given the presence of expansive agricultural land, deciduous woodland and the River Hodder located nearby, a variety of bird species are considered to exist in proximity to the site; from birds of prey such as barn owl (*Tyto alba*) and kestrel (*Falco tinnunculus*), to woodland birds such as treecreeper (*Certhia familiaris*), and greater spotted woodpecker (*Dendrocopos major*) and other species associated with agricultural land including swallows (*Hirundo rustica*), and yellowhammer (*Emberiza citrinella*).

Terrestrial mammals

5.15 There are numerous stands of deciduous and ancient woodland within the vicinity of the site that could provide suitable habitat for badger (*Meles meles*), with the surrounding agricultural land providing connectivity via hedgerows and trees line through the area. It is highly likely that this species is present in the area.

5.16 The expansive agricultural land around the site provides abundant habitat for brown hare (*Lepus europaeus*) and it is likely that this species is present within the surrounding environment.

5.17 The agricultural land and nearby woodland provides abundant suitable habitat for European hedgehog (*Erinaceaus europaeus*) providing ample foraging, commuting and hibernation opportunities. This species is highly likely to be present in the area.

Amphibians

5.18 A search of MAGiC maps EPSML showed no records for great crested newts (GCN) within a 2.0km radius of the site, with one GCN pond surveys (2017-2019) returning an 'absent' result located 1.5km to the south of the site. These results suggest no current records of GCN within 2.0km of the site.

5.19 Using Google Earth Pro 2022/23, MAGiC Maps 2022/23 as well as Ordnance Survey (OS) map data, a single pond was identified within the wider blue line boundary, with no further ponds within 250m of the site (see **Figure 5.3**). Due to the lack of records or connected pond networks, GCN are considered unlikely to be present within the wider environment of the site.

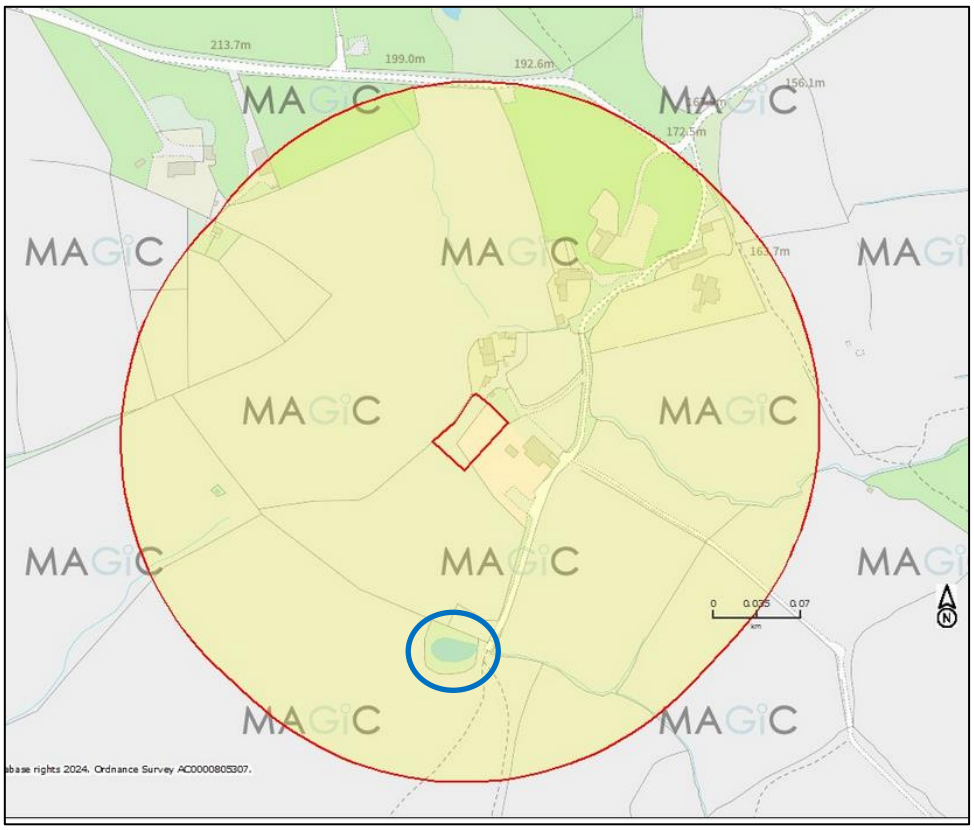

Figure 5.3 – Pond located within 250 metres of the site, highlighted in blue

5.20 With the presence of the River Hodder within the surrounding environment, there are numerous tributaries and brooks located in close proximity to the site and the abundant semi-natural terrestrial habitat provide suitable opportunities for common species of amphibians such as common frog and common toad. These species are likely to be present in close proximity to the site.

Reptiles

5.21 MAGiC Maps shows the presence of lowland heathland and ancient woodland in close proximity to the site, which are both habitats that are favoured by reptile species such as slowworm, grass snake and common lizard. There is also the nearby Stonyhurst golf course located around 1.0km south of the site, which often provide suitable habitat and ecotones for reptile species. However, intensive agricultural land generally provides poor connectivity for

reptile species, therefore while these species are likely to exist in the wider environment, there is limited connectivity to the site.

Invertebrates

5.22 As stated above, the ancient woodland habitat and the River Hodder would both provide suitable habitat for invertebrates, however, the surrounding agricultural land are unlikely to host notable invertebrate assemblages or specially protected species.

6.0 Field Survey Results

6.1 Habitat survey

6.1.1 See **Table 6.1.1** (below) for baseline information and habitat descriptions of the red line boundary; refer to **Appendix I** for any supporting imagery; scientific names are given in **Appendix III**. Refer to **Appendix V** – UK Habitats Map for the location of described habitats & Target Notes (TN). Only the habitats falling within the red line works boundary have been assessed in relation to Biodiversity Net Gain; **Appendix II** features full Condition Assessment Sheets.

Table 6.1.1 – UK Habitat types within the survey area

Area habitat	Sec. Codes	Description
g4 Modified grassland	**100** Grazed **516** Active management	The entirety of the red line boundary is made up of managed, modified grassland, with species typical of an enriched substrate. The species found on site include perennial rye-grass (*Lolium perenne*), creeping buttercup (*Ranunculus repens*), common bent (*Agrostis capillaris*), Yorkshire fog (*Holcus lanatus*), stinging nettle (*Urtica dioica*), cocks-foot (*Dactylis glomerata*), and broad leaved dock (*Rumex obtusifolius*).
		Condition: Poor **Habitat Area:** 0.1413 ha **Strategic Significance:** Area / compensation not in local strategy / no local strategy
u1f Sparsely vegetated land	81 Ruderal / ephemeral	An area of sparsely vegetated land located within the wider ownership of the client outside of the red line boundary, to be used as an area of enhancement in line with BNG. The vegetation is comprised of ruderal / ephemeral species such as common bent, pineapple weed (*Matricaria discoidea*), chickweed (*Stellaria sp.*) and toad rush (*Juncus bufonius*).
		Condition: Moderate **Habitat Area:** 0.1380 ha **Strategic Significance:** Area / compensation not in local strategy / no local strategy

Linear habitat	Sec. Codes	Description
h2a6 Other native hedgerow	-	A newly planted hedgerow with a length of approximately 14m consisting entirely of holly (*Ilex aquifolium*), runs partially through the area within the red line boundary.

		Condition: Moderate **Habitat Length:** 0.014 km **Strategic Significance:** Hedgerows listed within the South Ribble Biodiversity Action Plan and native hedgerows listed under the UKBAP.

6.2 Vegetation

Notable species

6.2.1 No species of conservation importance were located anywhere within the works area or wider site boundary during the appraisal.

Invasive non-native species (INNS)

6.2.2 No INNS, listed as such under Schedule 9 (Part II) of the Wildlife & Countryside Act (1981) or Schedule 2 of The Invasive Alien Species (Enforcement and Permitting) Order 2019 (IASO) were identified on site during the diurnal appraisal.

6.3 Bats

6.3.1 No buildings are present within the red line boundary and the holly hedgerow is too young to contain any potential roost features, as such roosting bats can be reasonably scoped out of this assessment.

6.3.2 All trees and hedgerows located around the site should, however, be considered of value to commuting and foraging bats, whereby they act as landmarks for navigation and foci around which invertebrate prey species gather.

6.4 Breeding birds

6.4.1 In relation to WCA Schedule 1 specially protected bird species such as barn owl, no evidence of this species was identified anywhere within the red line boundary, however there was a known barn owl roost located within the previous barn structure. The current dwelling now in its place features a barn owl box, although it is unknown if it is currently in use. The habitats present within the red line boundary are unlikely to offer substantial value for this species, the potential for disturbance of the nestbox during works should be considered.

6.4.2 In relation to more common breeding birds, no evidence of current or historical nesting was identified within the red line boundary and the area holds little value for nesting birds due to the grazed and managed nature of the grassland as well as the immature nature of the holly hedgerow, neither of which provide the required cover for nests. However, the new dwelling does provide mitigation for swallow nesting, as the former barn previously held active swallow nests, although the nature of the development is unlikely to cause disturbance to this species.

6.5 Other terrestrial mammals

6.5.1 No field signs were located to suggest the presence of badgers, including any setts, latrines, pathways, hairs, footprints or feeding signs such as snuffle holes and scratched trees/logs. Although this species may be present within the wider landscape, the habitats onsite provide limited value in terms of foraging and commuting, while more favourable habitat exist further away from the site. Their presence on site is considered unlikely.

6.5.2 In respect of hedgehogs, whilst no direct evidence was located to suggest presence of this species, the habitat features present within and in close proximity to the application site provide suitable commuting and foraging opportunities for this species, in the form of tree lines and hedgerows for connectivity and the nearby woodland habitats for foraging and refuge. The occasional presence of this species onsite is considered likely.

6.5.3 No evidence of brown hare was noted during the diurnal visit; however, the arable and grassland areas surrounding the site are considered broadly suitable for this species and their occasional presence on site is likely.

6.6 Herpetofauna

Great crested newt (GCN)

6.6.1 Important elements to consider when assessing likely impacts against GCN includes:

- The scale, nature and magnitude of proposals,
- Site proximity to a potential breeding pond and to any additional ponds,
- Habitat linkage / barriers between potential breeding ponds and the site,
- Nature and extent of available terrestrial habitat around the pond,
- Area of site habitat loss,
- Nature of habitat to be lost and potential value to GCN,
- Most up to date Government guidance considering EPS.

6.6.2 As derived from the desktop assessment:

- No granted EPSMLs for GCN within 2.0 kilometres,
- No 'Present' Class Survey Licence Returns within the search range,
- No 'Present' ponds survey within the considered search range (Great Crested Newt Pond Surveys 2017 - 2019),
- One pond in the wider site ownership, no further waterbodies within 250 metres of the site.

6.6.3 No ponds exist within the proposed red line boundary, however, one pond within the wider site ownership was identified using aerial imagery. During the diurnal assessment, this pond was found to have been significantly dredged and / or cleared, with very little water remaining and littered with tree stumps and branches; this was understood to be a result of pond improvements as previously the pond was choked by ruderal vegetation. It was not assessed by the HSI metric at the time due to its condition, as it resembles more of a waterlogged pit than a pond as well as its isolation from any other pond network in the wider environment.

6.6.4 The adjacent terrestrial habitat is of poor quality for GCN, comprised entirely of short, grazed grassland, primarily used for agriculture with much of the land being open and exposed with little vegetation cover. There is some connectivity from the pond to the east in the form of a line of trees which extends to the woodland adjacent to the River Hodder, however, this is not considered extensive.

6.6.5 The habitats within the development area as well as the wider surrounding site are considered broadly unsuitable for GCN due to the lack of good quality waterbodies present and the unsuitable terrestrial habitat restricting commuting or foraging. There are also no records of

GCN present within the wider environment, therefore, impacts to this species are considered to be negligible.

Wider herpetofauna

6.6.6 The presence of more generalist, robust common amphibians including common frog and common toad is considered unlikely within the red line boundary due to the heavily managed grassland providing little commuting or foraging opportunities. The wider site ownership does offer some suitable habitat as the managed pond to the south may be used by robust amphibians especially when flooded, but the low diversity of vegetation structure between these areas reduces the likelihood of commuting between these areas.

6.6.7 The site offers no potential habitat for reptiles, due to the lack of favourable ecotones or habitat features such as varied vegetation structure, differing ecotones and the lack of basking or hibernation opportunities.

6.7 Invertebrates

6.7.1 The habitats present within the site are considered broadly unsuitable for any protected invertebrate species or assemblages, as the grassland lacks the necessary diverse vegetation structure, ecotones or varied food sources. The holly hedgerow may provide some opportunities for invertebrate species, however as it has been recently planted it does not provide as many features or opportunities compared to a fully mature hedgerow.

7.0 Conclusions & Recommendations

Habitats

7.1 No habitats of conservation importance were identified on the application site.

Vegetation

7.2 No impacts are anticipated in relation to any priority vegetative species or communities currently.

7.3 No INNS were identified within the application site boundary or within its immediacy.

7.4 Any landscaping or planting carried out during the works should consider local soil types and habitats, and as such should prioritise species which will better tolerate the soil type present on site and provision for faunal species present in the immediacy; a list of possible suitable species is listed in **Appendix IV**.

Bats

7.5 No buildings or trees are present within the site boundary hence no further recommendations pertaining to roosting bats apply.

7.6 Previous surveys undertaken by Tyrer Ecological Consultants determined that the former barn structure held a common pipistrelle day roost, which is situated approximately 50m away from the development area. The new dwelling that was erected now houses a bat box on its north-western elevation as part of the mitigation for this species. While the habitats within the red line boundary are unlikely to offer substantial foraging, the entire site is likely to be used for commuting purposes.

7.7 Due to the presence of previously installed bat mitigation in the form of a bat box on the north-west gable of the nearby dwelling, any installation of light fixtures for the riding arena must be cloaked/covered from the direction of the bat box to prevent disturbance to any roosting bats. Installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon foraging / commuting bats in the landscape, subject to their presence, particularly if increased light spillage occurs in areas of that are currently free from illumination. A bat-sensitive lighting plan is therefore recommended in order to avoid potential impacts to bats that may use the area. Several options to consider have been listed below, though the reader is referred to the Bat Conservation Trust's 'Bats and Artificial Lighting at Night' guidelines (August 2023) for further information (see **Table 7.1** overleaf):

Table 7.1 – Extract from *Bats and Artificial Lighting at Night*, BCT (August 2023)

Appropriate luminaire specifications: Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)
- Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt
- Where appropriate, external security lighting should be set on motion-sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand
- Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

Breeding birds

7.8 Due to the ban owl roosting mitigation installed in the nearby dwelling, it is recommended that a detailed course of Reasonable Avoidance Measures (RAMs) are produced which outline clear measures to reduce disturbance impacts to any potential nesting birds within proximity to the works; this will include appropriate buffer zones to ensure works are appropriately considerate of any nesting barn owls.

7.9 In relation to more common birds, the habitats within the red line boundary do not provide any suitable nesting platforms for any bird species as there is not enough sufficient cover to protect any potential nests. Care should be given to any activity around the dwelling which does contain mitigation for swallow nesting, however, there is sufficient distance between the proposed development and the location of the nests that this species should not be adversely affected. No further recommendations apply.

NB: *All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected from destruction, damage and disturbance under the*

Wildlife & Countryside Act 1981 (*as amended*). *It is a punishable offence to interfere in any way with an active nest.*

Other terrestrial mammals

7.10 No evidence of badger was identified on site and the habitats present of site offer limited value for badgers, as such it is considered unlikely that this species will be present, and no further recommendations apply.

7.11 No evidence of hedgehog or hare was located within or in the immediate vicinity of the site by the surveyor, although given the proximity of suitable habitat in the form of arable grassland, hedgerows and tree lines, the presence of both these species cannot be ruled out.

7.12 Therefore, a set of Reasonable Avoidance Measures (RAMs) should be drafted by a competent ecologist to safeguard this species during the proposed works. RAMs to minimise construction disturbance and prevent harm or injury to commuting or foraging hedgehogs and hares must include:

- Limiting working hours to the daylight,
- Carrying out morning checks for the presence of hedgehogs and other small animals,
- Provisioning low angle sloping boards of approximately 300 mm wide to be placed within any excavations at the end of each working day, to facilitate a means of escape for mammals such as hedgehogs,
- Backfilling excavations at the end of the working day, if possible,
- Not leaving any bulky equipment / general construction aggregates around the development area, instead leave them on bare ground away from the risk zone.
- Materials that may cause entrapment such as plastic/metal fencing should not be left around the site following the cessation of daytime work.
- Trenches MUST be covered at the end of each working day or include a means of escape for any animal falling in.
- Any temporarily exposed open pipe system MUST be capped in such a way as to prevent mammals gaining access, as may happen when contractors are off site.
- Any chemicals or harmful materials will be stored so that they cannot be accessed.
- Fires must not be used as a means of the disposing of waste materials.

Herpetofauna

Great crested newt (GCN)

7.13 Regarding GCN, the results of both the desktop and field study suggest that the risk of this species being present within the application site, or the immediate vicinity is negligible. As such no further recommendations apply for this species.

Wider herpetofauna

7.14 Common amphibians could potentially utilise the wider site for commuting / foraging, given the poor condition of the recently managed pond and the line of trees providing a commuting route. However, the lack of suitable vegetation cover between the southern end of the site and the area of proposed works limits the connectivity between these areas and as such amphibians are unlikely to traverse these areas. Therefore, the risk of this species being

present within the proposed works area is considered unlikely and as such no further recommendations apply.

7.15 However, should any frogs or toads be encountered within the works area, they should be handled with wet gloves to prevent impact / injury and moved to an area of like for like habitat outside of the works area away from potential harm. The applicant and all contractors would be aware that if at any stage newts are encountered during works, or at any other stage of the programme of works, such works would be required to immediately cease and the Ecologist / ECoW would be made aware as to provide further guidance, if an Ecologist is not already present.

7.16 Additionally, the site has been assessed as unsuitable for reptiles due to the lack of favourable habitat or habitat features. No impacts are foreseen to reptiles and no recommendations apply.

Invertebrates

7.17 General, indicative enhancement measures have been provided in **Appendix IV** which could be included in the proposed development in order to enhance the value of the site with regards to invertebrates.

Enhancement

7.18 General recommended ideas to enhance the site in accordance with the principles of '*Biodiversity Net Gain: Good practice principles for development*' (CIEEM *et. al.*, 2019), are presented in **Appendix IV**.

8.0 Biodiversity Statement

8.1 Based on the information gathered during the diurnal assessment Morton House Farm is **not exempt** from the Biodiversity Gain Planning Condition.

8.2 The site is host to the following biodiversity value:

- Habitat: **0.83**
- Hedgerow: **0.06**
- Watercourse: **0.00**

8.3 Habitat degradation **has not** taken place since the relevant date.

8.4 This Section should be read in conjunction with the hard copy of the Statutory Biodiversity Metric tool – see external Appendix.

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Appendix I: Site Photographs

Plate 1 – *General character of the red line boundary and the ongoing construction of the new stables*

Plate 2 – *General character of the wider area under the same ownership*

Plate 3 – *The dwelling which stands in place of the former barn located within the wider ownership*

Plate 4 – *Character of immature holly hedgerow within red line boundary*

Plate 5 – *Character of u1f sparsely vegetated land to be used for enhancement*

Plate 6 – *The dredged pond located to the south of the red line boundary within the wider ownership*

Appendix II: Condition Assessment Sheets

Condition Assessment Score – Grassland (low)

Condition Assessment Criteria		Criterion passed (Y/N)
A	There are 6-8 vascular plant species per m^2 present, including at least 2 forbs. **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, 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.	**N**
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	**N**
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	**Y**
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	**Y**
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	**Y**
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	**Y**
G	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA).	**Y**
	Total Score	**5**

Condition Assessment Result	Condition Assessment Score	
Passes 6 or 7 criteria including passing essential criterion A	Good	
Passes 4 or 5 criteria including passing essential criterion A	Moderate	
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor	**Y**

Condition Assessment Score – Hedgerows

Attributes and functional groupings (A, B, C, D & E)		Criteria	Description	Condition Achieved
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of 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 *Prunus spinosa* 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).	**N**
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	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).	**N**

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)	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	**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 Urtica spp., cleavers Galium aparine and docks Rumex spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	**Y**
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) 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 website4, as well as the BSBI website where the 'Online Atlas of the British and Irish Flora' 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.	**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 (for example, excessive hedgerow cutting).	**Y**
			Number of Criteria failed	**2**
			Number of Functional Groups failed	**0**

Condition Assessment Result	**Condition Assessment Score**
No more than 2 failures in total; AND No more than 1 failure in any functional group.	Good
No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1, C2 and E1 = Moderate condition).	Moderate
Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	Poor

Baseline Condition Assessment Score – Sparsely vegetated land

Condition Assessment Criteria		***Criterion passed (Yes or No)***
A	The parcel represents a good example of its specific sparsely vegetated habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with characteristic indicator species consistently present.[1]	**N**
B	The cover of bracken Pteridium aquilinum, scrub and trees is less than 25%.	**Y**
C	There is an absence of invasive non-native plant species[2] (as listed on Schedule 9 of WCA[3]) and species indicative of suboptimal condition[4] make up less than 5% of vegetated ground cover.	**Y**
D	Vegetation cover of vascular and non-vascular plants is between 5 and 50%.	**Y**
Number of criteria passed		
Condition Assessment Result (out of 4 criteria)	***Condition Assessment Score***	***Score Achieved ×/✓***
Passes 4 criteria	Good (3)	
Passes 3 criteria	Moderate (2)	**Y**
Passes 2 or fewer criteria	Poor (1)	

Appendix III: Botanical Species List

Species nomenclature follows Stace, C (2019) – definitive English names; scientific names for given flora are presented below.

Any invasive non-native species are denoted by the acronym (**INNS**).

Each species recorded was given an abundance value according to the standard DAFOR scale, where:

- D = Dominant
- A = Abundant
- F = Frequent*
- O = Occasional*
- R = Rare*

(*These values can be prefixed by the letter L (locally) to provide more subtle biogeographical data.)

Common Name	**Scientific Name**	**Abundance**
Broad-leaved dock	*Rumex obtusifolius*	R
Cock's-foot	*Dactylis glomerata*	O
Chickweed	*Stellaria sp.*	O
Common bent	*Agrostis capillaris*	O
Creeping buttercup	*Ranunculus repens*	A
Holly	*Ilex aquifolium*	D
Perennial rye-grass	*Lolium perenne*	D
Pineappleweed	*Matricaria discoidea*	O
Small nettle	*Urtica urens*	O
Toad rush	*Juncus bufonius*	R
Yorkshire fog	*Holcus lanatus*	F

Appendix IV: Biodiversity Enhancement: General Recommendations

Barn Owl

A barn owl box can be fitted within a building or externally on a tree.

Specification
* Height: 74cm x 59cm x 50 cm (length x width x depth)
* Entrance hole: 13cm high x 12cm width
* Weight: 8kg approx.
* Material: FSC certified exterior grade plywood

Available via: www.therange.co.uk/garden/wild-bird-care/bird-houses/barn-owl-nest-box/

Breeding Birds – House Sparrow

The sparrow terrace has been designed to help redress the balance of falling house sparrow numbers. The current UK population is now half of what it previously was in 1980 and this is widely attributed to habitat destruction and lack of suitable nesting spaces. House sparrows are social birds and like to nest in company, therefore, this terrace provides ideal nesting opportunities for three families. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of buildings.

Breeding Birds – Swallow

Although Swallows are currently placed on the Green list for Birds of Conservation Concern (BoCC), meaning that they are under the least protection, numbers of this species can fluctuate heavily based on environmental and ecological factors, with high regional variation observed.

Swallows will readily adopt these nest cups which are based on the size and shape of natural swallow nests. The nest cup is ideal for placing in a garage, shed, stable, barn or even beneath an archway and should be placed beneath the roof with free access. It provides somewhere secure for swallows to nest and means that they will expend less energy in producing their own nest. It also means that they do not need to find suitable nest building mud which can be in short supply in a dry spring. This WoodStone® Swallow Bowl is made from durable WoodStone®, a mixture of concrete and wood fibres, that is guaranteed to last for years and is mounted on an exterior grade plywood board.

Specifications

* Height: 120mm
* Width: 200mm
* Depth: 110mm
* Weight: 600g

Breeding Birds – Other

This traditional design has proved to be highly effective in attracting robins, as well as other small species such as black redstart, spotted flycatcher and wren. It is designed to be installed on the walls of houses, barns, garden sheds or other buildings and should be hung so that the entrance is to one side (at an angle of 90° to the wall). The front panel can be easily removed for cleaning.

This type of box should not be made conspicuous on a tree or bush because small predators can enter through the unprotected opening. By hanging on a wall, predators won't be able to reach the box. Alternatively hide the box in Ivy, Honeysuckle or other climbing plants.

Hedgehog Home

Specification:

Exterior quality 12mm resin bonded ply. The box remains untreated on the inside. Best situated in a quiet corner of the garden, and covered with leaves and other garden debris. Removable lid for cleaning purposes and reinforced corners, manufactured with surface sunk nails to resist rusting.

Nest box size: Height 22cm x Width 38cms x Length 47cm

Environmentally positive: Direct action to help hedgehog survival rates, encouraging biodiversity; FSC timber; Zero carbon footprint in use.

Invertebrates – Bee bricks

The Bee Brick can be used in place of a standard brick or block in construction to create habitat for solitary bees. Alternatively, it can be used as a standalone bee house in your garden or wild patch. It will provide much needed nesting space for solitary bee species such as red mason bees and leafcutter bees, both of which are non-aggressive.

Each Bee Brick contains cavities in which solitary bees can lay their eggs before sealing the entrance with mud and chewed-up vegetation. The offspring will emerge the following spring and the cycle will begin again. Each cavity goes part way into the brick, which is solid at the back. Bee Bricks should be placed in a warm sunny spot on a south-facing wall at a minimum height of 1m, with no vegetation obstructing the holes. It is highly recommended that bee-friendly plants should be located nearby so that the bees using the bricks have food, otherwise it is unlikely that the brick will be used. Available in a choice of four colours: white grey, dark grey, yellow and red.

Specification

* Material: Concrete
* Origin: Cornwall, UK
* Dimensions: W 215mm x D 105mm x H 65mm
* Weight: 2.9kg
* Colours: White grey, yellow, dark grey and red

Herpetofauna

Hibernacula are underground chambers that amphibians and reptiles use throughout the winter to protect themselves from the cold. Creating a hibernaculum will provide a safe space for amphibians and reptiles to hibernate over winter, as well as a spot for solitary bees to soak up the sun and for birds to relax. These habitats can be integrated into a wide variety newly created or enhanced habitats and attract herps to new areas.

You will need:

- A spade
- Logs and branches
- Rocks and bricks

- 2-3 drainpipe cut-offs or cement pipes (if using plastic drainpipes, roughen the insides with sandpaper, so that they are not too slippery for animals to climb
- Turf or meadow flower seeds (optional)

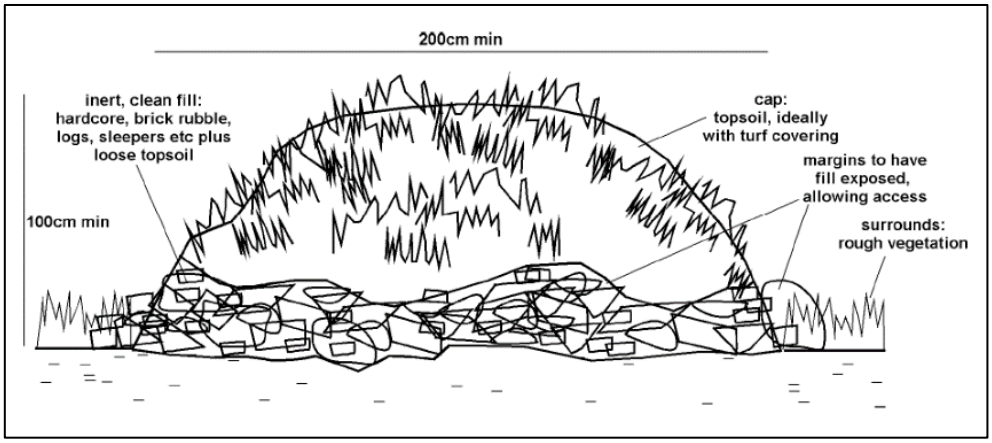
How to make your hibernaculum yourself:

- In a sunny spot, dig a hole about 50cm deep and 1.5 metres across.
- Fill with logs, branches, bricks and rocks, leaving plenty of gaps in between.
- Insert entrance tubes (drainpipes) at ground level into the hole.
- Cover the pile with soil (to about 50cm high).
- Plant meadow seeds or long grasses over the mound to create a feast for summer pollinators.

To construct a hibernaculum to Natural England standard:

- In desired areas, remove the turf from the footprint of the hibernaculum and set aside.
- On well-drained soil excavate to a depth of approximately 500 mm and set aside spoil (this is unnecessary on poorly drained soils).
- Fill the footprint or pit with core material. Materials likely to retain moisture are preferable, such as cut timber, brash and grubbed up tree roots. Other material such as inert hardcore, bricks, rocks, and building rubble may also be used. Materials that will decompose should not be placed beneath heavy components such as bricks or rocks, to reduce the risk of collapse.
- Pack the larger spaces within the core materials with wood chippings, loose topsoil or spoil.
- Cover the hibernaculum with the turves removed from the footprint.
- Take care not to create structures that might attract rodents, such as piles of rubble with many entrance holes. There has been no rigorous investigation of the optimum size of hibernacula, but larger hibernacula are probably more useful than small constructions because they contain a variety of different microhabitats and are more likely to maintain stable conditions.
- A suggested minimum size is 4.0 m long by 2.0 m wide by 1.0 m deep. 2.0 x 2.0 x 1.0 metres (length x width x height) as a minimum.

Illustrative aid for hibernaculum:



Native Planting and/or Landscaping

The below species have been assessed against the local soil and habitat types and are deemed suitable for the site. All plant material should comply with the minimum requirements in BS 3936-1: 1992 Specification for trees and shrubs and BS 3936-4: 2007 Specification for forest trees and BS 8545: 2014 Trees from Nursery to Independence in the Landscape. Any plant material, which in the opinion of the appointed Landscape Architect, does not meet the requirements of the Specification, or is unsuitable, or defective in any other way, will be rejected. The minimum specified sizes in the plant schedule will be strictly enforced. The contractor should replace all plants rejected at own cost. New hedgerows should be primarily comprised of Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*), Hazel (*Corylus avellana*), and Holly (*Ilex aquifolium*), whilst climbers/creepers such as Hops (*Humulus lupulus*) and Honeysuckle (*Lonicera periclymenum*) can be planted at the base of boundary features such as fences and walls, and new tree planting should include species such as Pedunculate Oak (*Quercus robur*), Wild Cherry (*Prunus avium*), and Alder Buckthorn (*Frangula alnus*).

	Common Name	Scientific Name	Planting Preference
Ferns	Male Fern	*Dryopteris filix-mas*	Semi-shade or shaded
	Soft Shield-fern	*Polystichum setiferum*	Semi-shade or shaded
	Maidenhair Fern	*Adiantum capillus-veneris*	Suitable for rockeries / walled gardens
	Royal Fern	*Osmunda regalis*	Full sun in moist-damp areas
Herbaceous plants	Bloody Crane's-bill	*Geranium sanguineum*	Dry soils - suitable for rockeries
	Columbine	*Aquilegia vulgaris*	Semi-shade or open areas
	English Bluebell	*Hyacinthoides non-scripta*	Moist soils in semi-shade or open areas
	Giant Bellflower	*Campanula latifolia*	Semi-shade or open areas
	Greater Knapweed	*Centaurea scabiosa*	Dry-moist soils. Suitable for borders
	Greater Woodrush	*Luzula sylvatica*	Moist soils in semi-shade or open areas
	Meadow Crane's-bill	*Geranium pratense*	Humid-moist soils. Suitable for borders
	Musk Mallow	*Malva moschata*	Dry-moist soils. Suitable for borders and rockeries
	Sea Campion	*Silene uniflora*	Dry soils - suitable for rockeries
	Stinking Hellebore	*Helleborus foetidus*	Semi-shade or open areas
Climbers	Honeysuckle	*Lonicera periclymenum*	Dry-moist soils
	Hops	*Humulus lupulus*	Dry-moist soils
	Ivy	*Hedera helix*	Dry-moist soils
	Sweet-briar	*Rosa rubiginosa*	Dry-moist soils
Woody Shrubs	Dogwood	*Cornus sanguinea*	-
	Guelder Rose	*Vibernum opulus*	-
	Hawthorn	*Crataegus monogyna*	-
	Hazel	*Corylus avellana*	-
	Holly	*Ilex aquifolium*	-

Trees	Alder Buckthorn	*Frangula alnus*	-
	Osier	*Salix viminalis*	-
	Pedunculate Oak	*Quercus robur*	-
	Purple Willow	*Salix purpurea*	-
	Rowan	*Sorbus aucuparia*	-
	Silver Birch	*Betula pendula*	-
	Wild Cherry	*Prunus avium*	-
	Wych Elm	*Ulmus glabra*	-

Appendix V: UK Habitats Map

Tyrer Ecological Consultants Ltd
Specialists in Protected Species

Morton House Farm, Clitheroe

UK Habitats Key

- h2a6 - Other native hedgerow
- g4 - Modified grassland
- Boundary

Secondary Codes:

100 - Grazed
516 - Active management

Survey Date: 03/12/2024
Drawn: Miss. J. Collins
Date Drawn: 03/01/2025
Checked & Approved: Mrs. K. Wilding
Size: A3
Scale: 1:700

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