PRELIMINARY ECOLOGICAL APPRAISAL

February 2022

Standen Phase 5 and 6,
Littlemoor Road,
Clitheroe,
BB7 1HF

URBAN GREEN

QUALITY MANAGEMENT

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NON-TECHNICAL EXECUTIVE SUMMARY

Taylor Wimpey are proposing to develop land at Littlemoor Road in Clitheroe (hereafter referred to as 'the site'). The proposals include the development of a residential estate in two phases, with associated hard and soft landscaping and areas of public open space (POS).

Urban Green have been appointed to complete a Preliminary Ecological Appraisal of the site. The objectives of the assessment are to identify habitats on site and determine the suitability for any 'protected and/or notable' species may occur on site. Further ecological surveys and mitigation are recommended to aim to minimise potential impacts on ecology, due to the proposed development.

Following the survey work, the key recommendations are summarised in the following table

Current Site Use and Adjacent Site Use	The site currently comprises arable land that was previously used for livestock farming. Residential properties surround the site to the north and west.
Potential Impacts on Designated Sites	No potential impacts on designated sites nearby to the site are anticipated to the occur due to the proposed development. The site is located at a sufficient distance from nearby designated sites, and the proposed development activities have been considered.
Habitats	The site comprised predominantly improved grassland with broadleaved woodland, scattered trees, hedgerows, watercourse, and a building.
Ecological Constraints	The following potential ecological constraints were identified during the assessment: • One building and two trees were assessed as having **High** bat roost potential. • Six trees were assessed as having **Moderate** bat roost potential. • Sixteen trees were assessed as having **Low** bat roost potential. • The site provides high value commuting and foraging habitat for bats • Suitable habitats for nesting notable bird species, including barn owl. • Suitable habitat for common amphibians, hedgehog, and badgers. • Suitable commuting and foraging habitat for otter and water vole.
Recommended Ecological Mitigation	The following mitigation measures are recommended to minimise potential impacts due to the proposed development: • Precautionary Working Methods during the construction phase for common amphibians, reptiles, hedgehog, bats, badgers, and barn owl. • If any vegetation requires removal, it should be completed outside of the breeding bird season (March to September, inclusive). If this is not feasible, a Nesting Bird Check is to be completed by a qualified ecologist within 48 hours before removal is completed.
Recommended Further Surveys and Reports	The following ecological surveys and reports are recommended to further assess the sites suitability for protected/notable fauna and/or flora: • Further aerial tree surveys. • Further invertebrates, reptiles, breeding birds, barn owl, bats, water vole, and otter surveys. • Production of a CEMP.
Recommended Ecological Enhancements	The National Planning Policy Framework (NPPF) (2021) highlights the requirement for planning policies and decisions to conserve and enhance the natural environment. The proposed development provides the opportunity to enhance the site and ecological enhancements have been recommended.

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1 Introduction

1.1 Background to the Scheme

Taylor Wimpey are proposing to develop land at Littlemoor Road in Clitheroe (hereafter referred to as 'the site'). The proposals include the development of a residential estate in two phases, with associated hard and soft landscaping and areas of public open space (POS). The spine road for the development has already gained outline approval and will run through the site in an east to westerly direction.

Urban Green have been appointed to undertake a Preliminary Ecological Appraisal (PEA) of the site.

The author of the report is Jake Healy, MSc, Qualifying CIEEM, Assistant Ecologist at Urban Green. Jake has experience providing ecological consulting services for a range of development schemes across the UK, including residential and commercial schemes.

1.2 Site Context

The site is located at National Grid Reference SD 74382 40702 and comprises a total area of approximately 17.2ha (see Figure 1).

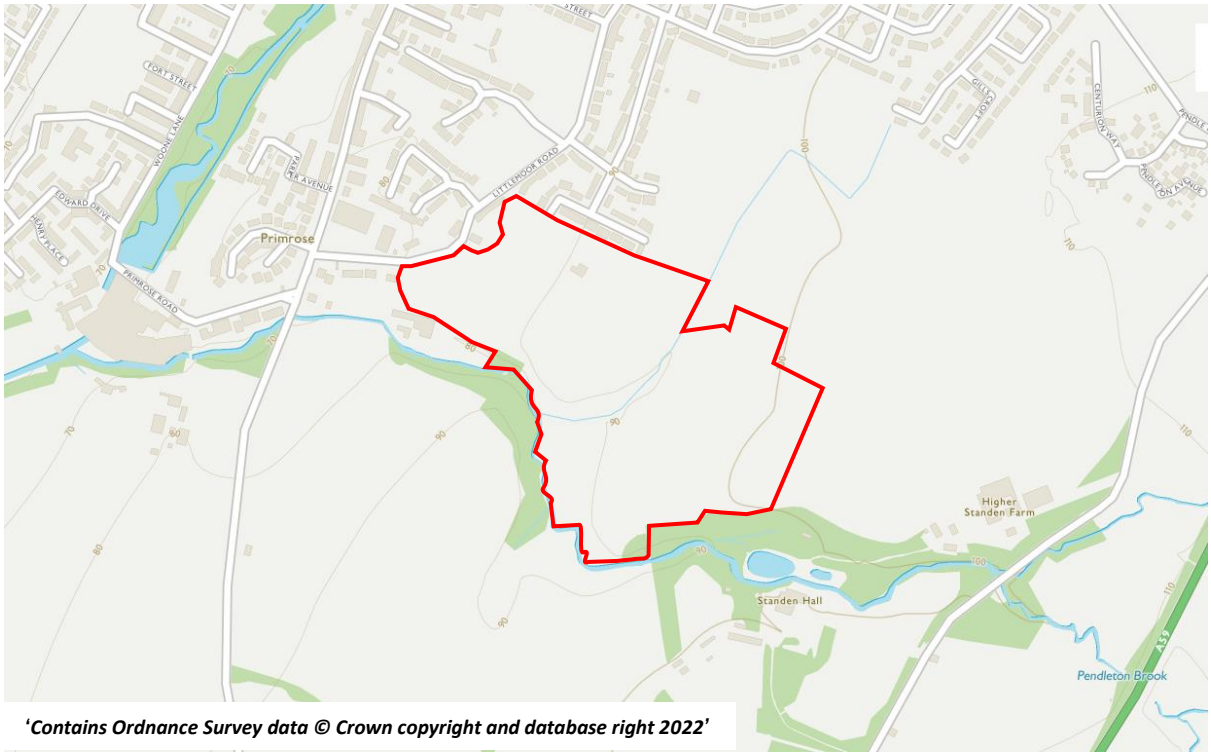


Figure 1 – Site Extent

The site is located on the rural-urban fringe of Clitheroe town, which is present approximately 1km north of the site. An un-named tributary of Pendleton Brook (a tributary of Mearley Brook which flows into the River Ribble) is present on site running north to south-west through the centre of the site. Pendleton Brook borders the south of the site running from east to west. The River Ribble is located approximately 1.5km west of the site, with Mearley Brook present approximately 350m west of the site. Residential properties are located to the north, north-west and west of the site with arable grassland

present on all other aspects. Areas of woodland are present within the wider area to the south of the site. The A59 is present approximately 600m east of the site.

1.3 Purpose of this Report

This report has been produced to set out the methods, results, and conclusions of a PEA. The purpose of the PEA report is to identify habitats on site and determine the sites potential value for protected and/or notable fauna and flora, with the addition of potential impacts on designated sites. This will inform the need for any further ecological surveys and/or mitigation to minimise the potential impacts on ecology on site and within the local area.

Further information and details of UK legislation for those species which are formally protected is defined in Appendix 1, which are considered throughout the assessment.

The National Planning Policy Framework (NPPF) (2021) and other Local Planning Policies are considered with the PEA. Ecological enhancements are advised to be in line with relevant Planning Polices.

2 Methods

The PEA assessment and Report follows the good practice methodology as detailed within the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2019).

2.1 Desk Study

2.1.1 Online Resources and Local Records Centre

Due to the size and low impact of the proposed development and being located within a rural area of Clitheroe, a 2km Local Data Search was conducted as it is deemed an appropriate distance for the Zone of Influence.

Sources of information used in the desk study are presented in Table 1.

Table 1 – Desk Study Sources of Information

Source	Date Consulted	Information Sought
MAGIC website (www.magic.gov.uk)	09/02/2022	Locations of statutory designated sites within 1km of the site boundary. Locations of Natura 2000 sites (Ramsar, Special Area of Conservation (SAC) and Special Protection Area (SPA) within 5km of the site boundary. Locations of European Protected Species Licences (EPSL) and Class Licences within 1km.
Natural England (https://designatedsites/.naturalengland.org.uk/)	09/02/2022	Relevant statutory designated site citations.
JNCC (https://jncc.defra.gov.uk/	09/02/2022	Information on European wildlife sites. Details of relevant Section 41 species and habitats.
Lancashire Environment Record Network (LERN)	02/09/2020	Locally designated wildlife sites within 1km of site boundary. Records of protected and notable species within 1km of the site boundary.
Lancashire Local Biodiversity Action Plans	04/09/2020	Species and habitats which are given special conservation status at the local level.
Catchment Data Explorer	09/02/2022	Summary of data relating to river condition and catchment data, provided The Environment Agency (EA)

2.2 Field Survey

2.2.1 Vegetation

The site was subject to a field survey on the 10th of February 2022 by Assistant Ecologist Jake Healy and Senior Biodiversity Consultant Maisie McKenzie. The weather conditions were 7°c, cloudy (4/8 oktas), with a wind speed of 4 on the Beaufort scale, and dry.

The methods were based on the standard methodology as detailed by *JNCC Handbook for Phase 1 Habitat Survey* (JNCC, 2010). A Phase 1 Habitat Plan has been produced to demonstrate habitats within the proposed development and the surrounding area. The mapping techniques are based on *the Phase 1 Habitat Survey* (JNCC, 2010) guidance.

Flora species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and/or uncommon habitats, were searched for during the survey.

Species abundance is described using the DAFOR scale as shown in Table 2. Percentages are an approximate indication rather than a quantitative measure.

Table 2 – Key to Species Abundance

		Description	Indicative Percentage Ranges
D	Dominant	Covers most of the area	90% or greater
A	Abundant	Very common throughout the area.	50 – 90%
F	Frequent	Common or with many individuals.	20 – 50%
O	Occasional	Occurs in several places but not throughout. Populations are not large.	5 – 20%
R	Rare	Occurs in low numbers in relation to size of area.	Less than 5%
"L" will be used to indicate abundance in a localised area, e.g. LA = Locally abundant			

Any invasive species, including those listed on the revised (April 2010) Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were noted during the field survey when sighted.

2.2.2 Fauna

A site search for field signs of protected and notable fauna was undertaken, and incidental sightings are detailed. The searches completed were as follows:

- Suitability of any ponds to support notable and protected amphibians, and the suitability of the site's terrestrial habitats to support amphibians.
- Suitability of the site to support reptiles by way of habitat structure and refuge piles, as well as links to the wider landscape.
- Search of any watercourses for signs or suitability for white clawed-crayfish (*Austropotamobius pallipes*), water vole (*Arvicola amphibius*) and otter (*Lutra lutra*) by way of burrows, resting places, holts and foraging signs.
- Suitability of the site to support notable bird species. Bird nests and droppings of notable and protected bird species.
- Suitability of the site to support notable invertebrates.
- Search of the site for any invasive species.

- Badger (*Meles meles*) field signs such as setts, mammal, paths, snuffle holes and latrines.
- Suitability of the site to support notable terrestrial mammals including harvest mouse (*Micromys minutus*) and brown hare (*Lepus europaeus*).

2.3 Bat Assessment

2.3.1 Preliminary Roost Assessment

A Preliminary Roost Assessment (PRA) was carried out on the site buildings and trees using a high-powered torch and close-focussing binoculars, where possible.

The PRA methodology is based on information contained within the Bat Conservation Trust (BCT) guidelines, 3rd edition (Collins, 2016). The categorisation within this report is based on that set out in Table 3, which is used as a basis for determining the requirement for further surveys.

Table 3 – Suitability of Buildings and Trees for Roosting Bats (adapted from Collins, 2016)

Category of Suitability	Typical Characteristics	Further Survey Requirements
High Roost Suitability	A structure/tree 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 and surrounding habitat.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. Surveys can be undertaken between May and September, with at least two surveys between May and August.
Moderate Roost Suitability	A structure/tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but are unlikely to support a roost of high conservation status.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. Surveys can be undertaken between May and September with at least one survey between May and August.
Low Roost Suitability	A structure/tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate condition and/or suitable surrounding habitat to be used on a regular basis by larger numbers of bats.	**Structures:** one emergence/re-entry survey between May and August. **Trees:** No further survey required but precautionary methods of felling recommended.
Negligible Suitability	Negligible habitat features on site likely to be used by roosting bats.	No further work required.

2.3.2 Commuting and Foraging Bats

The site was assessed for its suitability for use by commuting and foraging bats.

The commuting and foraging assessment methodology is based on information contained within the Bat Conservation Trust guidelines 3rd edition (Collins, 2016). The categorisation within this report is based on that set out in Table 4, which is used as a basis for determining the requirement for further surveys.

Table 4 – Suitability of Site for Foraging and Commuting Bats (adapted from Collins, 2016)

Category of Suitability	Typical Characteristics
High Suitability	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting or foraging bats such as; river valleys, streams, hedgerows, lines of trees or woodland edge. Site is close to or connected to known roosts.
Moderate Suitability	Continuous habitat connected to the wider landscape that could be used by commuting bats such as lines of trees, scrub or linked back gardens. Habitat connected to wider landscape that could be used for bats for foraging such as; trees, scrub, grassland or water.
Low Suitability	Habitat that could be used by small number of commuting bats such as; defunct hedgerow, isolated features not well connected to surrounding habitat or Isolated habitat that could be used by a small number of foraging bats such as a lone tree or patch of scrub.
Negligible Suitability	No features on site suitable for use by commuting and foraging bats.

2.4 Constraints to the Survey

Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

This PEA does not constitute a full botanical survey. The protected species assessment provides a view of the likelihood of protected species occurring on the site based on the known distribution of species in the local area and the suitability of the habitat. It should not, however, be taken as providing a full and definitive survey of any protected species group.

February is a suboptimal time for carrying out a Phase 1 Habitat Survey due to being outside of the optimal plant growing season. Therefore, it is likely that some plants are present on the site but were not evident at the time of the survey and were not recorded. This is not considered to be a significant constraint with regards to the general Phase 1 Habitat Survey results as the habitats remained consistent with previous surveys, and due to the size and location of the site and limited extent of the habitats, it is considered very unlikely that any rare or priority plant species were missed.

Where a lack of records is found during the desk search for a defined geographical area, it does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

The conclusions and recommendations detailed in this report are based upon the site redline boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary or development proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

The findings of this report represent the professional opinion of qualified ecologists and do not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited within this document.

Where broad grid references are returned within the data search the records have been referred to as "Within 2km".

Two ponds were present within 250m of the site associated with a private residence and grounds to the south-east of the site. These ponds were inaccessible and as such were unable to surveyed for HSI scores. As these ponds are the only two ponds within 250m of the site it is unlikely that they support GCN due to their isolated nature. And if they were to support GCN more favourable habitat is present within the immediate area than is found on site.

The area of broadleaved woodland on site comprised a high number of trees that were difficult to survey individually. As such many of these trees were unable to have a detailed Preliminary roost assessment conducted. This has been considered throughout the report.

2.5 Lifespan of Report

In accordance with CIEEM's Advice Note on the Lifespan of Ecological Reports and Surveys (CIEEM, 2019), the details of this report will remain valid for a period of **18 months** from the date of the survey (i.e. until 10th August 2023). After this date, this assessment should be reviewed to determine whether any updated surveys are required.

2.6 Definitions

For the purposes of this report, the term 'protected and notable species' relates to:

- Species included on Schedules 2 and 4 of *The Conservation of Habitats and Species Regulations 2017*;
- Species included on Schedules 1, 5 and 8 of the *Wildlife and Countryside Act 1981* (as amended), excluding species that are only protected in relation to their sale (see section 9[5] and 13[2]);
- Invasive non-native species included on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended);
- Species of principal importance for the conservation of/maintaining and enhancing biodiversity as required under: Section 41 of the *Natural Environment and Rural Communities Act 2006* (England), Section 7 of the *Environment (Wales) Act 2016*, Section 2[4] of the *Nature Conservation (Scotland) Act 2004*;
- Local species of importance as identified within various local biodiversity action plans; and,
- Badgers, which are protected under the *Protection of Badgers Act 1992*.

3 Baseline Ecological Conditions

3.1 Desk Study

3.1.1 Site Location

The site is located on the rural-urban fringe of Clitheroe town, which is present approximately 1km north of the site. An un-named tributary of Pendleton Brook (a tributary of Mearley Brook which flows into the River Ribble) is present on site running north to south-west through the centre of the site. Pendleton Brook borders the south of the site running from east to west. The River Ribble is located approximately 1.5km west of the site, with Mearley Brook present approximately 350m west of the site. Residential properties are located to the north, north-west and west of the site with arable grassland present on all other aspects. Areas of woodland are present within the wider area to the south of the site.

It is anticipated these habitats will provide suitable foraging, resting, and commuting resources within the local area for a variety of wildlife, such as birds, bats and other terrestrial and aquatic mammals.

3.1.2 Designated Sites

No sites that form part of the National Site Network were located within 5km of the site boundary. One statutory and one non-statutory designated site was located within 2km of the site and are detailed within Table 5.

Table 5– Designated Sites within the Search Areas

Designated Site	Approx. Distance from Site	Details
Statutory designated sites		
Salthill Quarry Sites of Special Scientific Interest (SSSI)	1.7km north	The famous Carboniferous Limestone site is the type locality for the fossiliferous Salthill Bank Beds (Chadian) and the Salthill Cap Beds (Arundian) of the Clitheroe Limestone Complex. It provides the best sections through the Chadian and the Knoll Reefs of the Craven Basin, and some of the finest such sections in the English Lower Carboniferous. It shows three-dimensional relationships of reefs associated sediments and rich marine, especially echinoderm, faunas and is a key site for studies of fauna, carbonate sedimentology diagenesis and palaeoecology in the Lower Carboniferous.
Non-statutory designated sites		
Salthill Quarry Local Nature Reserve (LNR) and Biological Heritage Site (BHS)	1.7km north	As above

Based on consultation with MAGIC the site also falls within the Impact Risk Zone of the Salthill Quarry SSSI which is detailed in Table 5.

3.1.3 Flora and Fauna

The following section summarises protected and/or notable species records that have been recorded within 2km of the site.

Vascular Plant

The data search returned 44 records of a notable vascular plant species including bluebell (*Hyacinthoides non-scripta*), fragrant orchid (*Gymnadenia conopsea*), deadly nightshade (*Atropa belladonna*), barberry (*Berberis vulgaris*), nettle-leaved bellflower (*Campanula trachelium*), sheep's-bit (*Jasione montana*), common gromwell (*Lithospermum officinale*), Solomon's-seal (*Polygonatum multiflorum*), tuberous comfrey (*Symphytum tuberosum*), globeflower (*Trollius europaeus*), stinking hellebore (*Helleborus foetidus*), bird's-eye primrose (*Primula farinosa*), mossy saxifrage (*Saxifraga hypnoides*), buckthorn (*Rhamnus cathartica*), small scabious (*Scabiosa columbaria*), lesser meadow-rue (*Thalictrum minus*), blue water-speedwell (*Veronica anagallis-aquatica*), northern yellow-cress (*Rorippa islandica*), and darnel (*Lolium temulentum*).

The closest record was attributed to bluebell, which was located at the southern extent of the site in 1988.

Bluebell are listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) and the darnel is listed under Section 41 of the NERC Act 2006. The remaining records are all listed under the Lancashire LBAP.

Invertebrates

Thirty-three records of notable or protected invertebrates, were returned within the data search, comprising white-letter hairstreak (*Satyrium w-album*), butterbur moth (*Hydraecia petasitis*), ringlet (*Aphantopus hyperantus*), small heath (*Coenonympha pamphilus*), wall (*Lasiommata megera*), broom moth (*Ceramica pisi*), buff ermine (*Spilosoma lutea*), cinnabar (*Tyria jacobaeae*), dot moth (*Melanchra persicariae*), green brindled crescent (*Allophyes oxyacanthae*), latticed heath (*Chiasmia clathrata*), oblique carpet (*Orthonama vittata*), small phoenix (*Ecliptopera silaceata*), small square spot (*Diarsia rubi*), and white ermine (*Spilosoma lubricipeda*).

The closest record was located approximately 850m north-west of the site from 2020 and was related to a latticed heath moth.

The butterbur moth and ringlet butterfly are listed on the Lancashire LBAP, while the small heath butterfly, wall butterfly, and white-letter hairstreak butterfly are listed on the Lancashire LBAP and under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. All other species are listed solely under Section 41 of the NERC Act.

Amphibians

Six records of common amphibian were returned in the data search comprising toad (*Bufo bufo*) and common frog (*Rana temporaria*). The closest record was located approximately 1.3km west of the site from 2018.

Both species are listed on the Lancashire LBAP, common toad is also listed on Section 41 of the NERC Act 2006.

A MagicMap search returned no granted EPSL relating to great crested newts present within 1km of the site.

Reptiles

One record of common lizard (*Zootoca vivipara*) was received within 2km of the site from 1833.

This species is listed on Section 41 of the NERC Act (2006) and on the Lancashire LBAP.

Birds

A total of 120 records of protected or notable birds were returned within 2km of the site as detailed in Table 6.

Table 6 – Protected or notable birds recorded within 2km

Scientific Name	Common Name	Protection	Closest Record to Site	
			Approx. Min. Distance (m)	Date
Chroicocephalus ridibundus	Black-headed gull	BoCC5**, LBAP	400m	2008
Pyrrhula pyrrhula	Bullfinch	BoCC5**, S41*****, LBAP	1.8km	1993
Actitis hypoleucos	Common sandpiper	BoCC5**, LBAP	Within 2km	1999
Numenius arquata	Curlew	BoCC5*, S41*****, LBAP	Within 2km	2005
Cinclus cinclus	Dipper	BoCC5**	Within 2km	1999
Prunella modularis	Dunnock	BoCC5**, S41*****, LBAP	500m	2008
Chloris chloris	Greenfinch	BoCC5*	Within 2km	1999
Ardea cinerea	Grey Heron	LBAP	1.5km	2020
Perdix perdix	Grey partridge	BoCC5*, S41*****, LBAP	Within 2km	2004
Motacilla cinerea	Grey wagtail	BoCC5**	500m	2008
Larus argentatus	Herring gull	BoCC5*, S41*****, LBAP	500m	2019
Delichon urbicum	House martin	BoCC5*	900m	2020
Passer domesticus	House sparrow	BoCC5*, S41*****, LBAP	1.5km	2018
Falco tinnunculus	Kestrel	BoCC5**, LBAP	Within 2km	1999
Alcedo atthis	Kingfisher	Sch.1****, BoCC5**	500m	1992
Vanellus vanellus	Lapwing	BoCC5*, S41*****, LBAP	Within 2km	2005
Acanthis cabaret	Lesser redpoll	BoCC5*, S41*****	Within 2km	2004
Dendrocopos minor	Lesser spotted woodpecker	BoCC5*, S41*****, LBAP	Within 2km	2004
Carduelis cannabina	Linnet	BoCC5*, S41*****	Within 2km	1999
Charadrius dubius	Little Ringed Plover	Sch.1****, LBAP	Within 2km	1999
Anas platyrhynchos	Mallard	BoCC5**	50m	2019
Anthus pratensis	Meadow pipit	BoCC5**, LBAP	Within 2km	1999
Turdus viscivorus	Mistle thrush	BoCC5*	Within 2km	1999
Gallinula chloropus	Moorhen	BoCC5**	500m	2008
Haematopus ostralegus	Oystercatcher	BoCC5**, LBAP	Within 2km	1999

Scientific Name	Common Name	Protection	Closest Record to Site	
			Approx. Min. Distance (m)	Date
Falco peregrinus	Peregrine	Sch.1****, LBAP	1.5km	2018
Aythya ferina	Pochard	BoCC5*, LBAP	500m	1992
Tringa totanus	Redshank	BoCC5**, LBAP	Within 2km	2005
Gallinago gallinago	Snipe	BoCC5**, LBAP	Within 2km	2005
Turdus philomelos	Song thrush	BoCC5**, S41*****, LBAP	Within 2km	1999
Accipter nisus	Sparrowhawk	BoCC5**	Within 2km	1999
Muscicapa striata	Spotted flycatcher	BoCC5*, S41*****, LBAP	Within 2km	2004
Sturnus vulgaris	Starling	BoCC5*, S41*****, LBAP	Within 2km	1999
Apus apus	Swift	BoCC5*, LBAP	800m	2004
Strix aluco	Tawny owl	BoCC5**	Within 2km	1999
Anas crecca	Teal	BoCC5**, LBAP	500m	1992
Passer montanus	Tree sparrow	BoCC5*, S41*****, LBAP	Within 2km	2005
Anas penelope	Wigeon	BoCC5**, LBAP	500m	1992
Phylloscopus trochilus	Willow warbler	BoCC5**, LBAP	1.5km	2004
Troglodytes troglodytes	Wren	BoCC5**	400m	2008

* Red list of BoCC5 (2021)
** Amber list of BoCC5 (2021)
*** Black list BoCC5 (2021)
**** Section 21 of the NERC Act (2009)
***** Schedule 1 or 5 of the WCA (1981)

Bats

Nine records of bats were returned within the data search, including records of common pipistrelle (*Pipistrellus pipistrellus*), unidentified pipistrelle species (*Pipistrellus* spp), as well as a record of an unidentified bat species (*Chiroptera* spp).

Six records were related to roosts, with one record relating to an unidentified pipistrelle maternity roost. The closest record was located approximately 450m west of the site from 2015 and was related to a common pipistrelle roost.

Two records were related to field signs, and both were attributed to common pipistrelle. The closest record was located approximately 1.4km west of the site.

All species of bat returned are listed on the Lancashire LBAP and all bats, excluding the common pipistrelle, are listed on Section 41 of the NERC Act (2006).

MAGIC also detailed the presence of one granted EPSL within 1km of the site (Ref: 2018-34104-EPS-MIT). This licence was to allow for the impact and damage of a breeding site and for the damage and

destruction of a resting place for common pipistrelle and soprano pipistrelle between 2018 - 2023. It was located approximately 200m south-east of the site.

Hedgehog

A total of 29 records of hedgehog were returned with 2km of the site, with the closest record located approximately 200m north of the site from 2020.

Hedgehog are listed on Section 41 of the NERC Act (2006) and on the Lancashire LBAP.

Red squirrel

Two records of red squirrel (*Sciurus vulgaris*) were returned within the data search, with the closest record located approximately 1.4km east of the site in 1997.

Red squirrel are listed on Section 41 of the NERC Act (2006) and on the Lancashire LBAP.

Fish

Four records of brook lamprey (*Lampetra planeri*) were returned within the data search. The closest record was located approximately 1.6km south-west of the site from 2008.

Four records of European eel (*Anguilla anguilla*) were returned within the data search. The closest record was located approximately 1.6km south-west of the site from 2014.

Twenty-one records of bullhead (*Cottus gobio*) were returned within the data search. The closest record was located immediately south of the site from 2011.

Six records of Atlantic salmon (*Salmo salar*) were returned within the data search. The closest record was located approximately 750m west of the site from 2011.

Thirteen records of brown trout (*Salmo trutta*) were returned within the data search. The closest record was located immediately south of the site from 2011.

All species are listed on the Lancashire LBAP, and the European eel, atlantic salmon, and brown trout are all listed under Section 41 of the NERC Act 2006.

Brown Hare

Ten records of brown hare (*Lepus europaeus*) were returned within the data search, with the closest record located approximately 900m south of the site from 2012.

Brown hare are listed on Section 41 of the NERC Act (2006) and on the Lancashire LBAP.

Badger

Two records of badger field signs were returned within the data search, with the closest record located approximately 1.4km south-east of the site from 2013.

Badger are protected by the Protection of Badgers Act 1992.

Otter

Five records of otter were received within the data search, with the closest record located approximately 200m west of the site from 2019.

Otter are listed on Section 41 of the NERC Act (2006), are a European protected species through the EC Habitats Directive (1992), and are on the Lancashire LBAP.

Invasive Non-native Species

Fauna

A total of 17 records relating to invasive non-native fauna species were returned in the data search, comprising sika deer (*Cervus nippon*) and eastern grey squirrel (*Sciurus carolinensis*). All records were located within 2km of the site.

Both are listed under Schedule 9 of the Wildlife and Countryside Act 1981.

Flora

Ninety-one records of invasive non-native plant species were returned within 2km of the site, comprising cotoneaster species (*Cotoneaster* spp.), Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*), rhododendron ponticum (*Rhododendron ponticum*), Canadian waterweed (*Elodea canadensis*), Nuttall's waterweed (*Elodea nuttalli*), and Japanese rose (*Rosa rugosa*).

The closest record to site was attributed to Himalayan balsam located on site in 2008.

All species are listed under Schedule 9 of the Wildlife and Countryside Act 1981.

No Records Returned

The data search returned no records for:

- Great crested newt
- Hazel dormice (*Muscardinus avellanarius*)
- Water vole
- White-clawed crayfish

3.2 Field Survey

The site habitats and accompanying Target Notes are presented in the Phase 1 Habitat Map in Appendix 3.

3.2.1 Improved Grassland

Improved grassland comprised much of the site and was utilised as agricultural grazing land, which was also used by the public, as a public footpath was present through the site. Species composition of this habitat was dominated by Yorkshire fog (*Holcus lanatus*), with occasional bird's foot trefoil (*Lotus corniculatus*), ribwort plantain (Plantago lanceolata) and mouse ear chickweed (*Cerastium fontanum*). To the south of the site the grassland adjacent to Pendleton Brook comprised a more diverse species composition exhibiting an abundance of Yorkshire fog and perennial rye grass (*Lolium perenne*), and an occasional occurrence of rough stalked meadow grass (*Poa trivialis*), broad leaved dock (*Rumex obtusifolius*), creeping thistle (*Cirsium arvense*), ribwort plantain, and common nettle (*Urtica dioca*).

Photograph 1 – Improved Grassland at west of the site

Photograph 2 – Improved Grassland at east of the site

3.2.2 Hedgerow with trees

Two hedgerows (shown in Figure 2) were present within the western section of the site running from north to south. Both hedgerows were species poor and defunct with a number of trees associated with the hedge line. The average height of the hedgerows was 1.5m and the average width was 0.5m, showing evidence of regular pruning. The hedgerows were dominated by hawthorn (*Crataegus monogyna*) while the trees associated with the hedgerows comprised ash (*Fraxinus excelsior*), pedunculate oak (*Quercus robur*), beech (*Fagus sylvatica*), and sycamore (*Acer pseudoplatanus*). The hedgerows qualify as habitats of principal importance.

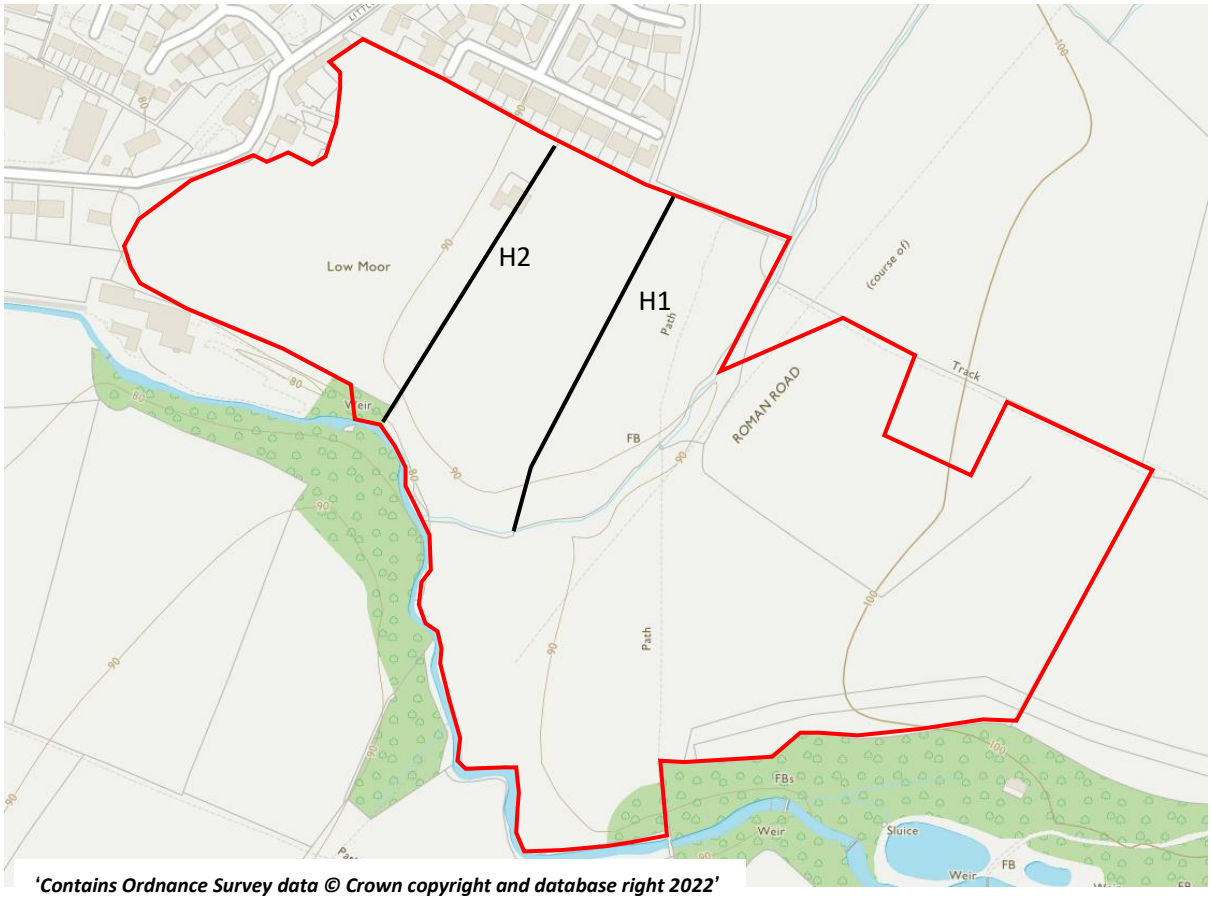


Figure 2 – Map of hedgerows on site

Photograph 3 – Hedgerow with trees (H1)

Photograph 4 – Hedgerow with trees (H1)

Photograph 5 – Hedgerow with trees (H2)

Photograph 6 – Hedgerow with trees (H2)

3.2.3 Broadleaved Woodland

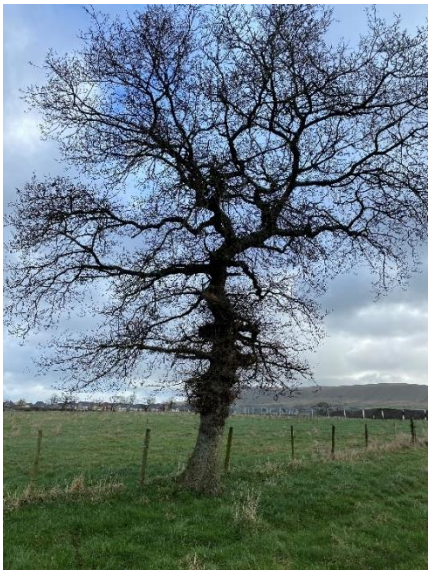
A strip of woodland was present running through the centre of the site from north to south-west associated with Pendleton Brook (detailed in Section 3.2.5). Tree species included hawthorn, ash, oak (*Quercus* spp.), alder (*Alnus glutinosa*), sycamore, blackthorn (*Prunus spinosa*), elder (*Sambucus nigra*), hazel (*Corylus avellana*), field maple (*Acer campestre*), and holly (*Ilex aquifolium*). The understorey and ground flora associated with the broadleaved woodland comprised locally dominant ivy (*Hedera helix*) and frequent bramble (*Rubus fruiticosus agg.*). Snowdrop (*Galanthus nivalis*), rose (*Rosa spp.*), herb robert (*Geranium robertianum*), red campion (*Silene dioca*), rosebay willowherb (*Chamaenerion angustifolium*), cleavers (*Galium aparine*), and hogweed (*Heracleum sphondylium*) all occurred occasionally.

Photograph 7 – Broadleaved Woodland

Photograph 8 – Broadleaved Woodland

3.2.4 Scattered Trees

A number of scattered trees are also present on site, predominantly found in the eastern section of the site including oak and ash species.



Photograph 9 – Scattered trees on site

Photograph 10 – Scattered trees on site

Photograph 11 – Scattered trees on site

Photograph 12 – Scattered trees on site

3.2.5 Watercourses

An un-named tributary of Pendleton Brook was present on site, running through the centre from north to south-west of the site. The brook comprised rocky substrate with water flowing at a moderate speed in a north to south direction. The brook is surrounded by broadleaved woodland detailed in Section 3.2.3 and is therefore fully shaded by the environment. It was also noted that Pendleton Brook (TN1) immediately borders the south of the site which has areas of fast-flowing water and deeper pools, flowing in an east to west direction. Pendleton Brook contains rocky substrate and vegetated banks and qualifies as a Habitat of Principal Importance.

Photograph 13 – Tributary of Pendleton Brook on site

Photograph 14 – Tributary of Pendleton Brook on site

Photograph 15 – Pendleton Brook bordering the south of the site (TN1)

Photograph 16 – Pendleton Brook bordering the south of the site (TN1)

3.2.6 Building

One building (B1) was present on site comprising a dis-used brick barn located in the western section of the site adjacent to H2. For a full description and assessment of the building, please see Appendix 2.

Photograph 17 – Building 1

Photograph 18 – Building 1

3.3 Site Suitability for Protected and Notable Species

3.3.1 Species Discounted from Assessment

Hazel dormouse (*Muscardinus avellanarius*) mainly occur in southern counties, especially in Devon, Somerset, Sussex, and Kent. There are few recorded localities north of the Midlands, though they are present in parts of the Lake District and in scattered Welsh localities (Matthews *et al.*, 2018). The species are not generally known to be present within the Clitheroe area (Wembridge *et al.*, 2016. The habitats on site are of limited value due to limited areas of extensive woodland and scrub. As such, the species are reasonably discounted from site

3.3.2 Vascular Plants

It is anticipated that the site does not offer potential for notable plant species. The majority of the site comprises improved grassland with no floristic diversity as was found within the broadleaved woodland on site. The site is also used by the public and dog walkers were seen utilising the site during the field survey. Therefore, it is anticipated that there would be a high level of disturbance within these areas which would limit the sites potential for notable plant species further.

As such, notable plant species have been reasonably discounted from site and are not considered further within this report.

3.3.3 Invertebrates

The site offers the potential to support notable and protected invertebrates, with dead wood and aquatic habitats present which offer an important habitat in the invertebrate life cycle. However, no areas of high floristic diversity are present on site which would offer optimal foraging habitat. The data search returned a total of 33 records of notable invertebrates confirming that the species are in the area.

As such, it is anticipated that notable invertebrate species may be on site, although will probably be restricted to the watercourses and woodland habitats.

3.3.4 White-Clawed Crayfish

Aquatic habitats, in the form of an un-named tributary of Pendleton Brook which is present on site and Pendleton Brook which borders the south of the site, may offer suitable habitat for white-clawed crayfish. However, the brook running through the centre of the site appears to be unconnected to other watercourses upstream but joins Pendleton Brook that runs to the south of the site. This watercourse is anticipated to be unsuitable for white-clawed crayfish as it has areas of faster flowing water which limits the potential for the species. A weir is present just offsite which would limit the spread of any populations upstream and on to the site, and no records were returned within 2km of the site. It was also considered that as both water courses run either through the site or along the border of the site that these watercourses are potentially subject to increased levels of high nutrient run off decreasing the water quality and further limiting the potential for white-clawed crayfish.

As such, white-clawed crayfish have been reasonably discounted from the site.

3.3.5 Amphibians

No ponds were located on site, although two ponds were located within 250m of the site, which were inaccessible as described in Section 2.4. These ponds were isolated, with no other ponds located within 250m of the ponds or the site. As detailed in the ARG UK Advice Note 5 (ARG, 2010) the site is located in Zone B for geographic location (Factor 1 of the Habitat Suitability Index). There is also a watercourse