ECOLOGICAL ASSESSMENT (EA)

JULY 2019

Pendle Road (Phases 2, 3, 4 and Spine Road)
Clitheroe
BB7 1LN

URBAN GREEN

QUALITY MANAGEMENT

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NON-TECHNICAL EXECUTIVE SUMMARY

Taylor Wimpey are proposing to develop land at Pendle Road in Clitheroe. Proposals include the development of the site into a residential scheme with potential commercial and retail units. Outline planning permission has been granted for the wider site (planning application reference: 3/2012/0942).

Urban Green have been appointed to undertake an Ecological Assessment (EA) of two areas of the site:

1. Land encompassing Phases 2, 3 and 4 of the proposed development.
2. Land comprising the proposed spine road connecting the Phase 1 area of the site (under construction at the time of writing) and Littlemoor Road, located to the north-west of the site.

A desk-based study and a field study were conducted to identify habitats and determine the suitability for any 'protected and notable' species to occur on both the Phase 2, 3 and 4 Area and the Spine Road Area. Following the survey work, the key recommendations are summarised in the tables below.

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 17th December 2020). After this date, this assessment should be reviewed to determine whether any update surveys are required.

Phase 2, 3 and 4 Area

Species	Rationale for Consideration	Details and Recommendations
Badger	Suitable habitat is present for badger foraging and sett creation on and within 30m of the Phase 2, 3 and 4 Area.	No evidence of badger was observed on or within 30m of the Phase 2, 3 and 4 Area during the survey. Three areas could not be fully accessed for inspection due to tall and/or barbed wire fences, which are mapped in Appendix 2. As badgers are mobile and will construct setts at any time of the year, a pre-construction check should be carried out on and within 30m of the Phase 2, 3 and 4 Area to establish whether any setts have been created since the time of the survey (the check should include the areas unavailable for access during the field survey). Should any setts be found at this time, it may be necessary to apply to Natural England for a licence permitting disturbance to the setts. Licences are any granted between July and November inclusive, and relevant works are only permitted within this time frame. Licences are only issued following the receipt of planning permission.

Species	Rationale for Consideration	Details and Recommendations
Roosting Bats	One building and several trees were present within the Phase 2, 3 and 4 Area.	The building (B1) was assessed to have 'negligible' suitability for use by roosting bats – no further actions with regards to bats are required. The trees ranged from 'negligible' to 'moderate' suitability for use by roosting bats. Current plans indicate that the majority of the trees will be retained on the site. However, the plans indicate that two trees, T44 and T45, which have 'low' suitability for use, are to be removed. Removal should follow a precautionary felling methodology, as detailed in Section 5.2.2. Should plans be altered such that further tree removal is required, further survey for roosting bats may be required, as detailed in Section 5.2.2.
Commuting and Foraging Bats	The overall site, including both the Phase 2, 3 and 4 Area and Spine Road Area has 'low' suitability for use by roosting bats. However, it is considered that bat activity surveys are not required as the majority of most suitable habitat (i.e. ditch D1/woodland strip, scrub, scattered trees) are to be retained on site. Lighting schemes may negatively impact commuting and foraging bats.	Any lighting schemes to be implemented on both the Phase 2, 3 and 4 Area and Spine Road Area must be designed in accordance with Guidance Note 08/18 issued by the Bat Conservation Trust and Institute of Lighting Professionals (BCT/ILP, 2018)) to reduce the likelihood of causing disturbance to these species by illumination.
Nesting Birds	Building and vegetation habitat is present that is suitable for use by nesting birds.	Vegetation and building removal should be undertaken outside of the breeding bird season (March to August inclusive). If this is not possible, a suitably experienced ecologist should check the habitat for breeding bird activity no more than 48 hours before clearance. If nesting activity is found, nests must be left in situ until the young have fledged. Also note vegetation clearance recommendations with regards to brown hare and hedgehog. It should be noted that not undertaking necessary vegetation clearance outside of the bird nesting season and subsequently relying on a nesting bird check during the bird nesting season frequently leads to delays in schedule. It is therefore strongly recommended to undertake vegetation clearance outside of bird nesting season to avoid such delays.

Species	Rationale for Consideration	Details and Recommendations
Brown Hare and Hedgehog	Pre-construction vegetation clearance has the potential to harm brown hare and hedgehog individuals if undertaken without due care.	Scrub/hedgerow removal should be is undertaken in the autumn months of late-September to October inclusive, in order to avoid the nesting bird season, the majority of the brown hare and hedgehog breeding season, and the hedgehog hibernation season. Checks for individual brown hare leverets and hedgehogs should be made prior to vegetation removal. In order to maintain habitat connectivity throughout the Phase 2, 3 and 4 Area it is recommended that hedgerow is planted between garden plots, or where fencing is necessary, a gap of 13x13cm is created at their base to allow the free passage through the development post-construction.

Spine Road Area

Species	Rationale for Consideration	Details and Recommendations
Badger	Suitable habitat is present for badger foraging and sett creation on and within 30m of the Spine Road Area.	No evidence of badger was observed on or within 30m of the Spine Road Area during the survey. However, as badgers are mobile and will construct setts at any time of the year, a pre-construction check should be carried out on and within 30m the Spine Road Area to establish whether any setts have been created since the time of the survey. Should any setts be found at this time, it may be necessary to apply to Natural England for a licence permitting disturbance to the setts. Licences are any granted between July and November inclusive, and relevant works are only permitted within this time frame. Licences are only issued following the receipt of planning permission.

Species	Rationale for Consideration	Details and Recommendations
Roosting Bats	Several trees are present on and/or in proximity to the Spine Road Area.	The trees ranged from 'negligible' to 'moderate' suitability for use by roosting bats. Current plans indicate that the majority of the trees will be retained on the site. The trees indicated to be lost comprise a section of the woodland strip along ditch D1. Trees in this area were classified to have 'negligible' suitability for use by roosting bats, thus no further action with regards to roosting bats is required. Should plans be altered such that further tree removal is required, further survey for roosting bats may be required, as detailed in Section 5.2.2.
Commuting and Foraging Bats	The overall site, including both the Phase 2, 3 and 4 Area and Spine Road Area has 'low' suitability for use by roosting bats. However, it is considered that bat activity surveys are not required as the majority of most suitable habitat (i.e. ditch D1/woodland strip, scrub, scattered trees) are to be retained on site. Lighting schemes may negatively impact commuting and foraging bats.	Any lighting schemes to be implemented on both the Phase 2, 3 and 4 Area and Spine Road Area must be designed in accordance with Guidance Note 08/18 issued by the Bat Conservation Trust and Institute of Lighting Professionals (BCT/ILP, 2018)) to reduce the likelihood of causing disturbance to these species by illumination.
Nesting Birds	Vegetation habitat is present that is suitable for use by nesting birds.	Vegetation and building removal should be undertaken outside of the breeding bird season (March to August inclusive). If this is not possible, a suitably experienced ecologist should check the habitat for breeding bird activity no more than 48 hours before clearance. If nesting activity is found, nests must be left in situ until the young have fledged. Also note vegetation clearance recommendations with regards to brown hare and hedgehog. It should be noted that not undertaking necessary vegetation clearance outside of the bird nesting season and subsequently relying on a nesting bird check during the bird nesting season frequently leads to delays in schedule. It is therefore strongly recommended to undertake vegetation clearance outside of bird nesting season to avoid such delays.

Species	Rationale for Consideration	Details and Recommendations
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CONTENTS

1 Introduction

1.1 Background to the Scheme

Taylor Wimpey are proposing to develop land at Pendle Road in Clitheroe. Proposals include the development of the site into a residential scheme with potential commercial and retail units. Outline planning permission has been granted for the wider site (planning application reference: 3/2012/0942).

Urban Green have been appointed to undertake an Ecological Assessment (EA) of two areas of the site:

1. Land encompassing Phases 2, 3 and 4 of the proposed development.
2. Land comprising the proposed spine road connecting the Phase 1 area of the site (under construction at the time of writing) and Littlemoor Road, located to the north-west of the site.

When discussed as a collective, both the Phase 2, 3 and 4 Area and the Spine Road Area are hereafter referred to as "the site" within this report.

When discussed separately, each area is hereafter referred to as the "Phase 2, 3 and 4 Area" and the "Spine Road Area" within this report.

1.2 Site Context

The wider site is located at National Grid Reference SD748406. Figure 1 shows the Phase 1 area (for context only; currently under construction) (yellow line), the land encompassing the Phase 2, 3 and 4 areas (red line), and the proposed spine road area (blue line). Note that Figure 1 shows approximate boundary parameters and is meant for indicative purposes only.

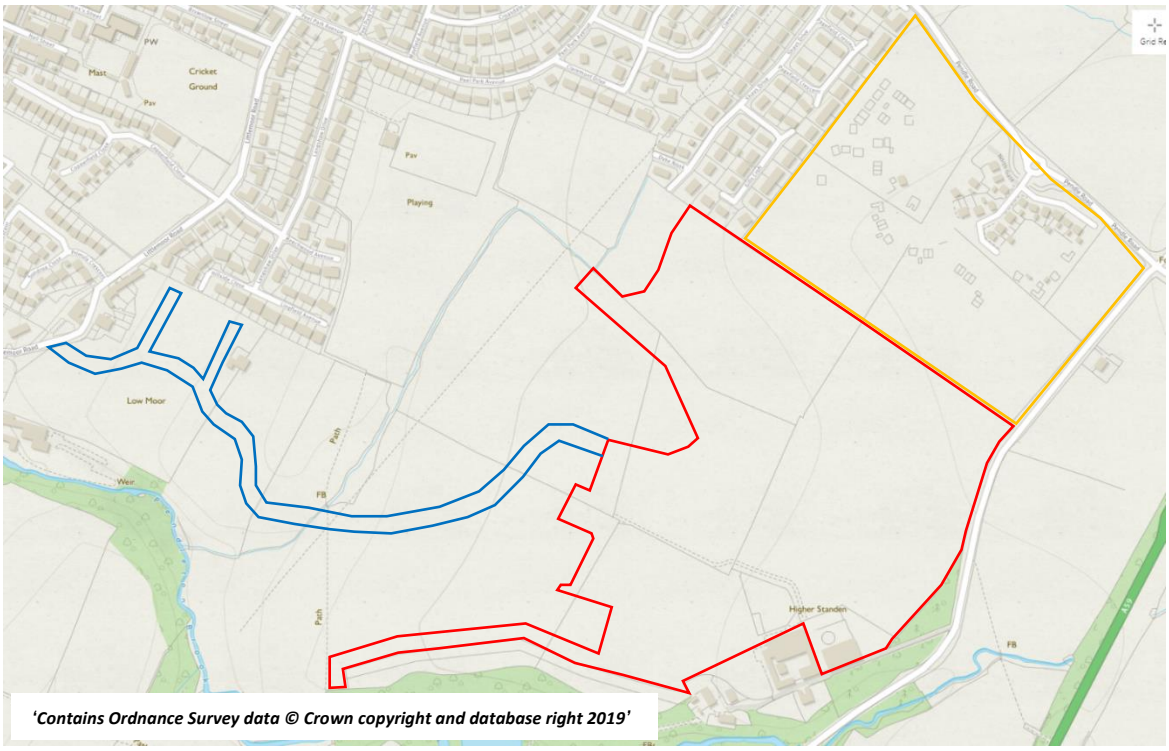


Figure 1 – Survey Extent (Red Line: Phase 2, 3 and 4 Areas; Blue Line: Spine Road Area) and Phase 1 Area (Yellow Line)

The site is located in a predominantly agricultural area, to the south-east of Clitheroe in Lancashire.

Agricultural fields and residential dwellings are located north of the site. Buildings associated with Higher Standen Farm are located immediately south, beyond which an area of woodland and Pendleton Brook are situated. Further agricultural land and woodland is located to the east and west of the site.

1.3 Purpose of this Report

This report has been produced to document the methods, results and conclusions of an Ecological Assessment that was undertaken in respect of proposals. The advice herein is based on both desk and field-based studies and intends to fulfil the following purposes:

- identify the habitats present on site and the nearby surroundings;
- provide an indication of the likely importance of those habitats;
- determine what protected or notable species are likely to occur on the site and appropriate mitigation if necessary; and,
- assess the likely impacts of the proposed development on ecology.

It is understood the report will be used to support to planning applications: the first for the development of the Phase 2, 3 and 4 area and the second for the spine road area.

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

1.4 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*.

2 Methods

2.1 Desk Study

2.1.1 Online Resources and Local Records Centre

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)	13/06/2019	Locations of statutory designated sites within 2km of the site boundary. Locations of Natura 2000 sites (Ramsar, SAC and SPA) within 5km of the site boundary.
Natural England (https://designatedsites/.naturalengland.org.uk/)	13/06/2019	Relevant statutory designated site citations.
JNCC (https://jncc.defra.gov.uk/	13/06/2019	Information on European wildlife sites. Details of relevant Section 41 species and habitats.
Lancashire Environment Record Network	13/06/2019	Locally designated wildlife sites within 2km of site boundary. Records of protected and notable species within 2km of the site boundary.
Lancashire Biodiversity Action Plan	13/06/2019	Species and habitats which are given special conservation status at the local level.
Previous Ecological Reports (see Section 2.1.2)	13/06/2019	Ecological baseline data that has been previously recorded on or in proximity to the site.

2.1.2 Previous Reports

Urban Green has been provided with the following ecological reports detailing ecological assessments previously undertaken on or in proximity to the site:

1. **Land South of Clitheroe: Environmental Statement (AMEC, 2012)**

   This Environmental Statement (ES) report includes details of the methods and results of ecological surveys that were carried out on the wider site by Ecological Consultants ERAP Ltd. in 2011 and 2012 (detailed in Section 7 of the ES report). The ES was submitted as part of the 2012 outline planning application for the development of the wider site (application reference: 3/2012/0942).

2. **Pendle Road, Clitheroe: Preliminary Ecological Appraisal (Urban Green, 2015a)**

3. **Pendle Road, Clitheroe: Bat Emergence/Re-entry Surveys (Urban Green 2015b)**

   These reports detail methods and results of both a Preliminary Ecological Appraisal and subsequent bat presence/likely absence surveys that were carried out on the Phase 1 area of the wider site in 2015 (the Phase 1 area is under construction at the time of writing).

4. **A59 Pendle Roundabout: Ecological Assessment (Urban Green, 2016)**

   This report details the results of an Ecological Assessment carried out in 2016, at land to the east of the site, as part of proposals to construct a roundabout at the intersection between Pendle Road and the A59 road.

Each of these reports have been reviewed as part of the desk-study in order to gather baseline ecological data that have previously been recorded on or near to the site.

2.2 Field Survey

The Phase 2, 3 and 4 Area and Spine Road Area (in addition to approx. 5m either side of its footprint – extended to 30m for badger) was subject to a field survey on 17th June 2019, which was undertaken by Ecologist Jessica Flanagan GradCIEEM.

The methods were based on the standard 'Phase 1' habitat survey technique (JNCC, 2010), which was extended (IEA, 1995) to include any relevant information on evidence or suitability for use by protected or notable species. Phase 1 habitat descriptions are used within this report with the following adaptation:

1. Where habitats comprise a mixture of habitat types rather than a single type, the habitat will be mapped as the most abundant type. Details of the composition and species are provided in corresponding target notes.

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			

2.3 Bat Assessment

2.3.1 Roosting Bats

One building and a number of trees were present within the Phase 2, 3 and 4 Area and several trees were present on and/or in proximity to the Spine Road Area. A Bat Roost Assessment (BRA) was carried out on the building and trees. The assessment was carried out from ground level, with the use of torchlight and binoculars where required.

The BRA 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.	3 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.	2 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:** 1 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 EA 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.

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.

As detailed in Section 3.3.1, three off-site areas could not be fully inspected for badger presence during the field survey due to high and/or barbed wire fencing. However, no other signs of badger activity were observed on the site. It is recommended for a pre-construction badger check to be carried out on and within 30m of the site as badgers can construct setts at any time of the year. It is recommended for the inaccessible areas to be included within this check.

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 17th December 2020). After this date, this assessment should be reviewed to determine whether any update surveys are required.

3 Baseline Ecological Conditions

3.1 Desk Study

A total of three statutory and 10 non-statutory designated sites are located within 2km of the site. No Natura 2000 sites are located within 5km of the site. Site details are provided in Table 5.

Table 5 – Designated Sites within the Search Areas

Designated Site	Approx. Distance and Direction from Site	Details
Statutory Sites		
Salthill and Bellmanpark Quarries Site of Special Scientific Interest (SSSI)	1.5km north-east	Former quarry sites designated as an SSSI for geological interest – a famous Carboniferous Limestone site.
Salthill Quarry Local Nature Reserve (LNR)		A mosaic of habitats is present, including: limestone grassland, scrub and developing woodland, surrounding a former limestone quarry which has been developed as an industrial estate. The site is noteworthy for the presence of a number of Lancashire BAP bryophyte species.
Forest of Bowland Area of Outstanding natural Beauty (AONB)	1.9km south-east	An 803 square km site of national and international importance for its unspoiled and diverse landscapes, wildlife and heritage. Heather moorland, blanket bog, semi-natural woodland and wildflower meadows are present. An important site for rare birds, such as hen harrier (*Circus cyaneus*).
Non-statutory Sites		
Primrose Lodge Biological Heritage Site (BHS)	550m west	A site comprising the lodge for the former Primrose Print Works, created by the damming of Mearley Brook, and adjacent semi-natural broadleaved woodland. The site supports the largest known colony of green figwort (*Scrophularia umbrosa*), a nationally scarce species in the Ribble Valley.
Clitheroe Castle Knoll BHS	750m north	A site consisting of a number of rock outcrops and steep sloping areas of limestone grassland, scrub and developing woodland below Clitheroe Castle.
Pendle Road Verge BHS	750m south-east	A section of roadside verge on either side of Pendle Road adjacent to Howcroft Brook and the north-west of Pendleton Hall. The site supports herb-rich neutral to calcareous grassland and scrub.
Barrow Clough Wood BHS	950m south-west	A clough woodland that is located to the south of Clitheroe that is included in the Lancashire Inventory of Ancient Woodland (Provisional), (English Nature, 1994).

Designated Site	Approx. Distance and Direction from Site	Details
Salthill Quarry BHS	1.5km north-east	See SSSI/LNR description above.
River Ribble from London Road Bridge Preston, in West, to County Boundary, in East BHS	1.5km west	A site comprising the River Ribble and associated semi-natural habitats from the county boundary at Playthorne downstream to London Road Bridge, Walton-le-Dale, Preston. One of the largest rivers in north-west England. The site supports a rich assemblage of plants and animals.
Pendle Hill BHS	1.9km south-east	An extensive and prominent upland area that is situated between the Bowland Fells and the Pennines. A large, relatively flat, unenclosed moorland plateau with steeply sloping sides that are divided into sizeable enclosures. Most of the hill is covered in peat of varying depth and the vegetation forms a complex mosaic of habitat types.
Boy Bank BHS	1.9km north	A site comprising a small, semi-natural woodland known as Boy Bank Wood and a contiguous area of species-rich grassland.
Sherburn Wood BHS	2km north west	A long band of semi-natural broadleaved woodland on a south-facing river cliff above a sweeping curve of the River Ribble.
Dog House Wood BHS	2km north-west	A site comprising a small, semi-natural wood that is situated on a steep south-facing river cliff above the River Ribble near Brungerley Bridge.

In addition, presented below is a summary of protected/notable species records that have been recorded within 2km of the site. Records that have been submitted in the past 10 years are considered current and have been included. Records submitted more than 10 years ago are considered historic and, unless specified, have not been included in this report.

Badger

One current badger (*Meles meles*) record was returned in the data search. The record was made in 2013 at approximately 1.4km from the site. It is not specified whether the record denotes the presence of a badger sett or other signs of badger presence.

Bats

Fifty-two current bat records were returned, including records of common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's bat (*Myotis daubentonii*), soprano pipistrelle (*Pipistrellus pygmaeus*), unidentified pipistrelle (*Pipistrellus* sp.) and unidentified bat species. The closest of these records is of a common pipistrelle day roost that was made at approximately 530m west of the site in 2015.

A search on Magic Map returned one record of a granted bat EPS licence within 2km of the site (case reference: 2014-6395-EPS-MIT). The record was granted for the destruction of a common pipistrelle resting place, starting in 2015 and ending in 2020, at a site located approximately 1.6km west of the site.

A small, common pipistrelle summer roost was recorded within one farm building at Higher Standen Farm (located to the south of the site, adjacent to but outside the site red line boundary) during bat presence/likely absence surveys that were carried out by ERAP in 2012 (AMEC, 2012). In addition, ERAP also recorded low levels of common pipistrelle activity across the wider site during a bat activity transect that was carried out in 2011. A single Daubenton's bat was recorded foraging along Pendleton Brook, outside of the site boundary, during this survey (AMEC, 2012).

Birds

Schedule 1 Species

Two current records of birds listed on Schedule 1 of *the Wildlife and Countryside Act 1981* (as amended) were returned in the data search. The records comprise the following species: redwing (*Turdus iliacus*) and peregrine (*Falco peregrinus*). Both birds were recorded at approximately 1.5km north-west of the site in 2009 and 2018, respectively.

Priority Bird Species

Several other current records of priority bird species (including S41 and/or Lancashire BAP species) were returned, including: house sparrow (*Passer domesticus*), dunnock (*Prunella modularis*), starling (*Sturnus vulgaris*), song thrush (*Turdus philomelos*), bullfinch (*Pyrrhula pyrrhula*), swift (*Apus apus*) and black-headed gull (*Chroicocephalus ridibundus*). Dunnock and song thrush were recorded to the south of the site in 2009.

ERAP recorded a total of 35 species on the wider site during two breeding bird surveys carried out in 2011. Most birds that were detected were passerine and were associated with the field boundary hedgerows and trees. The records included seven S41 species, namely: starling, house sparrow, bullfinch, song thrush, curlew (*Numenius arquata*) and lapwing (*Vanellus vanellus*). One pair of curlew and two pairs of lapwing were observed breeding, indicating a very low number considering the size of the site (AMEC, 2012).

Moreover, a dunnock (Lancashire BAP species) was recorded on the Phase 1 area of the wider site by Urban Green in 2015 (Urban Green, 2015a).

Brown Hare

Four current brown hare (*Lepus europaeus*) records were returned, which were made between 2012 and 2015. The exact location of three of the records are not specified in the data search.

A total of five brown hares were observed on the wider site during surveys conducted by ERAP in 2011 and 2012 (AMEC, 2012).

Great Crested Newt

No great crested newt (GCN) (*Triturus cristatus*) records were returned. A search on Magic Map found no granted GCN EPS licences within 2km of the site.

GCN presence/likely absence surveys that were carried out by ERAP in 2011 at a pond located approximately 100m south of the Phase 2, 3 and 4 Area boundary indicated likely GCN absence at that time (AMEC, 2012).

Hedgehog

Four current hedgehog (*Erinaceus europaeus*) records were returned. The closest was recorded at approximately 900m north of the site in 2010.

Otter

Four current otter (*Lutra lutra*) records were returned. The closest was recorded at approximately 250m south-west of the site in 2018.

Water Vole

No current water vole (*Arvicola amphibius*) records were returned in the data search.

No evidence of water vole was detected along the course of Pendleton Brook or the single ditch present on the site (Ditch D1; see Section 3.2) by ERAP in 2011 (AMEC, 2012). Furthermore, no evidence of water vole was detected at a ditch to the south of the Phase 1 Area by Urban Green in 2015 (Urban Green, 2015a) or at a drainage ditch located approximately 250m east of the site in 2016 (Urban Green, 2016).

Invasive Non-Native Plant Species

Several current records of plants that are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) as invasive non-native plant species were returned. Species include: Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and rhododendron (*Rhododendron ponticum*). The closest to site is a record of Himalayan balsam, which was made at approximately 300m west of the site in 2011.

A stand of Japanese knotweed was recorded at one location adjacent to Pendleton Brook in 2011 (AMEC, 2012).

3.2 Field Survey

The site habitats and accompanying Target Notes are presented in the Phase 1 Habitat Maps in Appendices 2 and 3. A separate map has been created for each the Phase 2, 3 and 4 Area and the Spine Road Area. Habitat descriptions and photographs are provided below, whilst Appendix 4 details the full plant species lists.

Phase 2, 3 and 4 Area

The land comprising the Phase 2, 3 and 4 area predominantly consisted of grassland fields, which are labelled as Fields A-H in this report (note that only a small fraction of Fields G and H are included within the Phase 2, 3 and 4 Area).

Field A comprised a small area of improved grassland that contained sheep.

Field B comprised a small, fenced area of semi-improved grassland that was not grazed or managed at the time of the survey, but was overgrown and contained a number of materials, e.g. farm equipment, associated with Higher Standen Farm to the south (TN1). Yorkshire fog (*Holcus lanatus*) was dominant in this area.

Photograph 1 – Field B

Fields C-H, comprising the vast majority of the Phase 2, 3 and 4 Area, consisted of heavily cattle-grazed improved grassland fields. The grassland sward contained abundant perennial ryegrass (*Lolium perenne*) and rough-stalked meadowgrass (*Poa trivialis*), with frequent Yorkshire fog and locally frequent meadow foxtail (*Alopecurus pratensis*). Herbs included locally abundant and occasional creeping buttercup (*Ranunculus repens*), with occasional broadleaved dock (*Rumex obtusifolius*) and creeping thistle (*Cirsium arvense*) and rare spear thistle (*Cirsium vulgare*). Tall ruderal, primarily comprising nettle (*Urtica dioica*), was locally abundant at the field margins (TN2).

Photograph 2 – Field C

Photograph 3 – Field D

A defunct hedgerow with trees (H1) bisected Fields D and E. The hedgerow was dominated by hawthorn (*Crataegus monogyna*) with frequent bramble (*Rubus fruticosus* agg.) and nettle, and occasional broadleaved dock. The trees within the hedgerow comprised English oak (*Quercus patrea*).

Photograph 4 – Defunct Hedgerow with Trees (H1)

Further scattered trees within the Phase 2, 3 and 4 Area comprised dominant English oak, with occasional ash (*Fraxinus excelsior*).

In addition, one farm building (B1) and associated farm equipment and materials (TN1), and hardstanding were present to the south of the area. The building is described in more detail in Section 3.3.2.

Spine Road Area

The Spine Road Area arises from the western boundary of the Phase 2, 3 and 4 Area and runs in a westerly direction through Fields G and H, a woodland-lined flowing ditch, Fields I, J and K, and eventually connecting to Littlemoor Road.

Fields G and H comprised improved grassland, as described in the above section.

A ditch of flowing water was present (D1), which flowed in a southerly direction towards, and eventually connecting to, Pendle Brook which is located to the south of the site. A narrow strip of semi-natural broadleaved woodland lined the ditch. Tree species included ash, English oak, field maple (*Acer campestre*) and alder (*Alnus glutinosa*). Understorey species included hawthorn, bramble and rose (*Rosa* sp.). The ground flora comprised abundant ivy (*Hedera* helix) and frequent nettle, with occasional herb Robert (*Geranium robertianum*), red campion (*Silene dioica*), hogweed (*Heracleum sphondylium*) and cleavers (*Galium aparine*).

Photograph 5 – Ditch D1

Fields I, J and K comprised improved grassland that was not grazed by cattle at the time of the survey.

Photograph 6 – Field J

The fields were bisected by two intact hedgerows with trees (H2 and H3). The hedgerow species included dominant blackthorn (*Prunus spinosa*) with frequent elder (*Sambucus nigra*), and occasional hawthorn, bramble, nettle, broadleaved dock and rare creeping thistle. Trees included ash and sycamore (*Acer pseudoplatanus*).

Photograph 7 – Hedgerow 2

Photograph 8 – Hedgerow 3

3.3 Protected and Notable Species

3.3.1 Badger

Where accessed, no badger setts of signs of badger presence were observed on or within 30m of the Phase 2, 3 and 4 Area or Spine Road Area (areas that could not be accessed for full assessment due to the presence of tall and/barbed wire fencing include: 1) an area of grassland with scrub and tall ruderals adjacent to the north-eastern boundary of the Phase 2, 3 and 4 Area, 2) a small area of woodland/scrub to the north of the Phase 2, 3 and 4 Area, and 3) a section of conifer plantation woodland to the south of the Phase 2, 3 and 4 Area. These areas are mapped on the Phase 1 Habitat Map in Appendix 2.)

Although no evidence of badger was observed at the time of the survey, the grassland, hedgerow and woodland habitats on and within 30m of the site are suitable for use by badger, which is a mobile species that will construct setts at any time of the year.

3.3.2 Roosting Bats

Phase 2, 3 and 4 Area

Table 6 summarises the details of the BRA that was carried out on one building (B1) and several trees that were present in the Phase 2, 3 and 4 Area.

Table 6 – BRA Summary – Phase 2, 3 and 4 Area

Building (Bx)/ Tree (Tx)* Reference	Description and Photographs	Category of Suitability
B1	A single storey barn building with wooden walls and a pitched corrugated metal roof. The building had open access doorways on the eastern and western aspects. No roof void or underlining present. Gaps present in the roof in parts. Metal fascia present on the eastern and western aspects, which was flush/no gaps. No evidence of bats observed within the building. No suitable features such as crevices/cracks/lifted tiles/voids present within the building. 	Negligible

Building (Bx)/ Tree (Tx)* Reference	Description and Photographs	Category of Suitability
	Photograph 9 – Barn Building B1 N Aspect  **Photograph 10 – Barn Building B1 W Aspect**  **Photograph 11 – Barn Building B1 Interior**	
T44	Ash. Large open and exposed cavity on N aspect.	Low
T45	Ash. Deadwood in canopy.	Low

Building (Bx)/ Tree (Tx)* Reference	Description and Photographs	Category of Suitability
T31	English oak. Small cavity resulting from broken limb present on S aspect at c. 3m.  **Photograph 12 – T31 Oak**	Low
T32	English oak. Healthy tree. No cracks/crevices/holes present.	Negligible
T35	English oak. Branches with splits on S aspect at c. 4m. Cavity present where branch has broken off on N aspect at c.1m.  **Photograph 13 – T35 Oak**  **Photograph 14 – T35 cavity**	Moderate

Building (Bx)/ Tree (Tx)* Reference	Description and Photographs	Category of Suitability
T36	Dead tree. Low number of gaps present beneath remnant bark.  **Photograph 15 – T36 Oak**	Low
T37	English oak. Split in branch on S aspect at c. 4m  **Photograph 16 – T37 Oak**	Low
T38	English oak. Splits in stem and branches in high canopy.  **Photograph 17 – T38 Oak**	Low

Building (Bx)/ Tree (Tx)* Reference	Description and Photographs	Category of Suitability
T39	English oak. Cracks in stem and branches on N aspect.  **Photograph 18 – T39 Oak**	Low
T40	English oak. Large cracked branch on N aspect.  **Photograph 19 – T40 Oak**	Low

Tree references correspond with the Urban Green Tree Constraints Plans (UG_132_ARB_TCP_02_Rev_01)

Spine Road Area

Table 7 summarises the details of the BRA that was carried out on the trees located on and within approximately 5m of the footprint on the Spine Road Area.

Table 7 – BRA Summary – Spine Road Area

Tree Reference*	Description and Photograph	Category of Suitability
T23	Ash. Mature tree with wound from historic branch tare. No cracks/crevices/holes present.	Negligible

Tree Reference*	Description and Photograph	Category of Suitability
Trees along D1, including T20, T21, T22, T24, T25, T26	Including ash, English oak, field maple and scrub (including alder, hawthorn, bramble and rose). All specimens relatively young and in good condition. No cracks/crevices/holes observed.  **Photograph 20 – Trees at Ditch D1**	Negligible
T16	Ash. Snapped branches resulting in crevices high in canopy. Rot holes present on N aspect.  **Photograph 21 – T16 Ash**	Moderate
T12	Sycamore. Good specimen. No cracks/crevices/holes present.	Negligible

Tree references correspond with the Urban Green Tree Constraints Plans (UG_132_ARB_TCP_01_Rev_01)

3.3.3 Commuting and Foraging Bats

It is assessed that the overall site, including both the Phase 2, 3 and 4 area and the Spine Road Area, has 'low' suitability for use by commuting and foraging bats, primarily owing to the presence of the ditch D1/woodland habitat, hedgerows and scattered trees. However, it is considered that bat activity surveys are not necessary on the site for the following reasons:

- The majority of the site comprises heavily managed improved grassland, which, although is likely to be occasionally used by foraging bats, is a suboptimal habitat for these species.
- Current plans indicate that a crossing is proposed over ditch D1 for the Spine Road Area, but the remainder of the ditch will remain unaltered. It is also indicated that the majority of the other features suitable for commuting and foraging bats, such as the mature trees, will be retained on the site.

3.3.4 Birds (Nesting)

Building B1, scattered trees, hedgerow, scrub, grassland and strip of woodland along ditch D1 that are present in both the Phase 2, 3 and 4 Area and Spine Road Area have suitability to be used by nesting birds.

There are no features present on either the Phase 2, 3 and 4 Area and Spine Road Area with suitability for nesting barn owls.

3.3.5 Great Crested Newt

No ponds are present on either the Phase 2, 3 and 4 Area nor the Spine Road Area. However, a single off-site pond (P1) is located approximately 100m south of the Phase 2, 3 and 4 Area and approximately 200m south of the Spine Road Area, as shown in Figure 2. The pond was not accessed during the field survey for a Habitat Suitability Index (HSI) assessment due to being situated with private land.

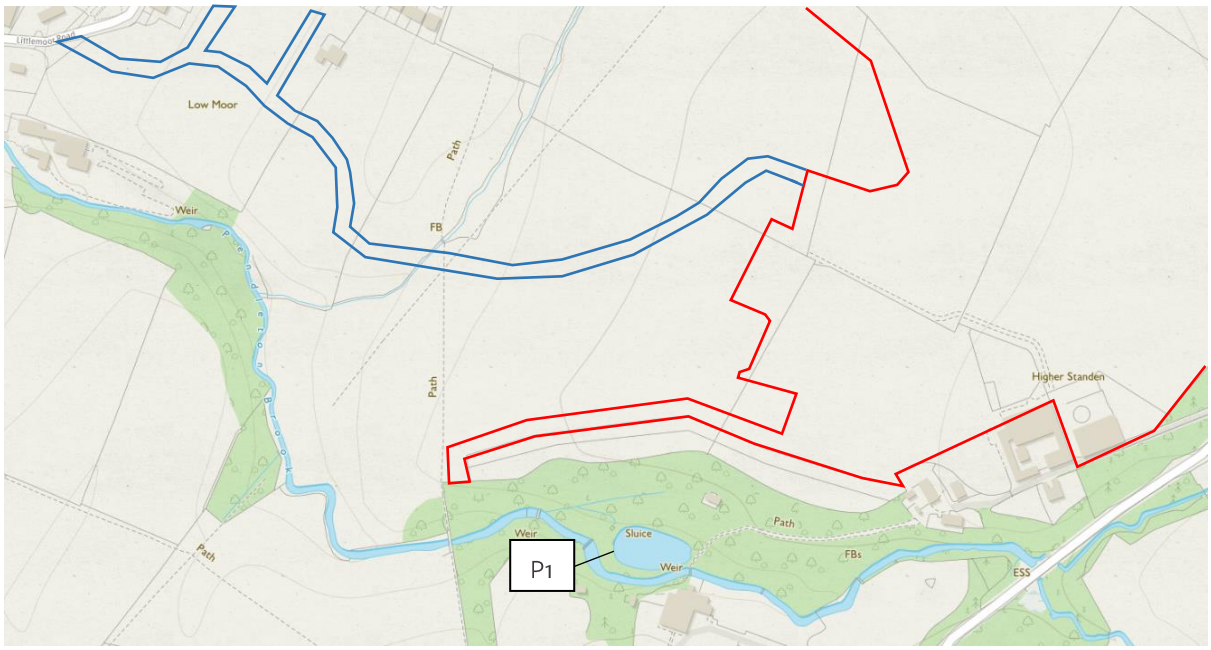


Figure 2 – Location of Off-Site Pond P1

GCN presence/likely absence surveys that were carried out by ERAP in 2011 indicated that GCN were likely absent from the pond at that time.

The pond is surrounded by broadleaved woodland and what appears to be a private garden. Broadleaved woodland comprises optimal GCN terrestrial habitat that offers plentiful shelter and foraging opportunities. It is considered that the improved grassland, which comprises the majority of the on-site habitat, constitutes a suboptimal habitat for use by GCN, due to being heavily grazed and managed. Suitable terrestrial habitat on site is limited to the woodland strip along ditch D1, scattered scrub and hedgerows.

Since the pond is isolated from other ponds in the wider area (no ponds exist within 250m of P1; the only other ponds are located approximately 450m south-east within Brick Kiln Wood, however, agriculturally managed grassland and Pendleton Brook act as significant barriers between these ponds and P1) it is considered very unlikely for colonisation to have occurred since the 2011 surveys. Furthermore, the terrestrial habitat on site is far inferior for GCN compared to the woodland that immediately surrounds the pond. For these reasons, it is considered that it is very unlikely that GCN would be present on the site.

3.3.6 Otter

It is considered that otters are likely absent from both the Phase 2, 3 and 4 Area and Spine Road Area due to a lack of suitable habitat. No evidence of otter presence was observed along ditch D1, which had a very narrow and shallow channel that likely to lack in an abundance of otter prey such as fish. In addition, the banks of the ditch had limited suitability for holt creation and laying up areas.

3.3.7 Reptiles

Whilst reptiles use grassland habitats, the grassland within both the Phase 2, 3 and 4 Area and Spine Road Area is intensively managed, greatly reducing its suitability for use by reptiles. Overall the site lacks a mosaic of structurally diverse vegetation and lacks a varied topography with south facing banks. The site is not well connected to other suitable reptile habitat within the wider area, meaning that colonisation of the site is unlikely.

3.3.8 Water Vole

No suitable water vole habitat is present on the Phase 2, 3 and 4 Area.

It is considered that ditch D1, through which the Spine Road Area runs, is suboptimal for use by water vole. The flowing water was very shallow at the time of the survey and there was a lack of emergent vegetation through the channel. The ditch was heavily shaded by the woodland strip, thus reducing its suitability for use by this species. ERAP did not detect any evidence of use by water vole at the ditch in 2011. Additionally, Urban Green observed no evidence of water vole presence at a ditch to the south of the Phase 1 Area in 2015 (located approximately 250m east of the Spine Road Area) (Urban Green, 2015a). It is therefore considered that water voles are likely absent from the site.

3.3.9 Other Priority Species

The grassland fields, scattered scrub, hedgerows and woodland strip along ditch D1 that are present in both the Phase 2, 3 and 4 Area and Spine Road Area have suitability to be used by UK and Lancashire priority mammals, including brown hare and hedgehog. Brown hare was recorded on the wider site by ERAP in 2011 (AMEC, 2012).

3.3.10 Invasive Species

No invasive, non-native species were present on either the Phase 2, 3 and 4 Area and Spine Road Area at the time of the field survey. However, it should be noted that some invasive non-native plants are very fast spreading and therefore the potential for these species to be introduced to the site at a later date cannot be ruled out. It should be noted that a stand of Japanese knotweed was recorded at one location adjacent to Pendleton Brook in 2011 (AMEC, 2012).

4 Evaluation and Impact Assessment

4.1 Designated Sites

It is considered very unlikely that the proposed development would result in negatively impacting the designated sites that are located within 2km of the site due to:

- large distances between the designated sites and the proposed development site;
- a lack of ecological (i.e. connecting habitats such as woodland) or hydrological connectivity between the designated sites and the proposed development site; and,
- the presence of physical barriers, such as the residential housing areas to the north-and the A59 road to the east, between the designated sites and the proposed development site.

4.2 Habitats

The majority of the habitat to be lost within both the Phase 2, 3 and 4 Area and Spine Road Area comprises improved grassland. This habitat is an intensively managed grassland with a low species diversity and thus the ecological impact resulting from its loss is considered to be very low.

Current plans indicate that the hedgerow (H1) and scattered tree habitats that are present within the Phase 2, 3 and 4 Area, in addition to an area of grassland, will be retained within greenspace on the site.

It is also indicated that the Spine Road Area will avoid the scattered trees on site, only bisecting a small area of ditch D1/woodland strip and Hedgerows H2 and H3.

4.3 Protected and Notable Species

4.3.1 Badger

There is a possibility for badgers and/or badger setts to be damaged or disturbed by proposed development works should they become established on or within 30m of both the Phase 2, 3 and 4 Area and Spine Road Area between the time of the survey and the commencement of works on site.

4.3.2 Roosting Bats

Phase 2, 3 and 4 Area

Current plans indicate that trees T44 and T45 within the Phase 2, 3 and 4 Area will be removed and the remaining trees within this area are to be retained. As trees T44 and T45 are classified as having 'low' suitability for use by roosting bats, roosting bats may be negatively impacted by works in the absence of a precautionary felling method.

There is opportunity to enhance the Phase 2, 3 and 4 Area for roosting bats through the provision of roosting means within the proposed development.

Spine Road Area

Current plans indicate that a small section of the trees at ditch D1 will be removed within the Spine Road Area. As these trees are classified as having 'negligible' suitability for use by roosting bats, it is considered very unlikely that roosting bats would be negatively impacted by works.

4.3.3 Commuting and Foraging Bats

As the majority of the habitat proposed to be lost to the Phase 2, 3 and 4 Area and Spine Road Area comprises improved grassland, and current plans indicate that the majority of linear features, such as mature trees, hedgerows and ditch D1/woodland strip will be retained on the site, it is considered that the proposed developments are not likely to result in a significant loss of bat commuting and foraging habitat. However, the implementation of lighting schemes within the Phase 2, 3 and 4 Area and Spine Road Area has the potential to result in disturbance to commuting and foraging bats in the wider area.

4.3.4 Nesting Birds

Nesting birds may be negatively affected by removal of vegetation within either the Phase 2, 3 and 4 Area and Spine Road Area if undertaken at the incorrect time of year.

Loss of nesting bird habitat could be mitigated for through the inclusion of nesting provisions within the proposed development of the Phase 2, 3 and 4 Area.

4.3.5 Brown Hare and Hedgehog

Whilst brown hare and hedgehog habitat is currently present within both the Phase 2, 3 and 4 Area and Spine Road Area, the habitat currently constitutes a small fraction of the overall available habitat within the wider landscape and as such, it is considered that its loss would not result in a significant negative impact on overall local brown hare and hedgehog populations. Current plans indicate that greenspace will be retained within the Phase 2, 3 and 4 Area and it is considered that habitat connectivity will be retained through the centre and along the southern boundary of this area. The inclusion of well-connected garden habitats within the Phase 2, 3 and 4 area will also maintain a good habitat corridor throughout the site.

However, clearance of vegetation clearance at the pre-construction phase has the potential to harm brown hare and hedgehog individuals if undertaken without due care.

5 Required Actions

The National Planning Policy Framework (NPPF) (2018) highlights the requirement for planning policies and decisions to conserve and enhance the natural environment.

Paragraph 170 states that this should be achieved by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Paragraph 175d also states that: "opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity".

5.1 Habitats

It is recommended that a wildlife friendly planting scheme is implemented within the proposed development of the Phase 2, 3 and 4 Area. The planting scheme should include native species and/or ornamental varieties with a known benefit to wildlife, such as fruiting or flowering species.

5.2 Protected and Notable Species

5.2.1 Badger

A pre-construction check for badger presence and setts should be carried out on and within 30m of both the Phase 2, 3 and 4 Area (including those areas unavailable for access at the time of the survey) and Spine Road Area to establish whether any setts have been created since the time of the survey.

Should any setts be found at this time, it may be necessary to apply to Natural England for a licence permitting disturbance to the setts. Licences are any granted between July and November inclusive, and relevant works are only permitted within this time frame. Licences are only issued following the receipt of planning permission.

5.2.2 Roosting Bats

Removal of trees T44 and T45 within the Phase 2, 3 and 4 Area, which are classified as having 'low' suitability for use by roosting bats, should be carried out using a precautionary felling methodology, whereby limbs are removed separately and are carefully lowered to the ground. The limbs should then remain on the ground over night to allow any bats that may be present to naturally vacate.

It should be noted that if plans are altered such that additional removal of trees that have been assessed with suitability for roosting bats (i.e. 'low' or 'moderate' suitability, as detailed in Section 3.3.2) is required (e.g. following design alterations or for health and safety reasons), in either the Phase 2, 3 and 4 Area or the Spine Road Area, further actions will be required.

If any further 'low' suitability trees are to be removed, the methodology should follow that described above. If any trees that are classed as having 'moderate' suitability for use by roosting bats are to be removed, it will be necessary to conduct further bat surveys on the trees. This would involve an aerial survey being carried out by a licensed bat worker to examine features in more detail, and dusk emergence/dawn re-entry surveys being carried out on the trees. The dusk emergence/dawn re-entry surveys can only be carried out between May-August inclusive.

5.2.3 Commuting and Foraging Bats

Any lighting schemes to be implemented on both the Phase 2, 3 and 4 Area and Spine Road Area must be designed in accordance with Guidance Note 08/18 issued by the Bat Conservation Trust and Institute of Lighting Professionals (BCT/ILP, 2018)) to reduce the likelihood of causing disturbance to these species by illumination.

5.2.4 Nesting Birds

Vegetation removal within both the Phase 2, 3 and 4 and Spine Road Area and building (B1) removal within the Phase 2, 3 and 4 Area should be undertaken outside of the breeding bird season (March to August inclusive). If this is not possible, a suitably experienced ecologist should check the habitat for breeding bird activity no more than 48 hours before clearance. If nesting activity is found, nests must be left in situ until the young have fledged. Also note vegetation clearance recommendations in Section 5.2.5, with regards to brown hare and hedgehog.

It should be noted that not undertaking necessary vegetation clearance outside of the bird nesting season and subsequently relying on a nesting bird check during the bird nesting season frequently leads to delays in schedule. It is therefore strongly recommended to undertake vegetation clearance outside of bird nesting season to avoid such delays.

5.2.5 Brown Hare and Hedgehog

It is recommended that scrub/hedgerow removal within both the Phase 2, 3 and 4 Area and Spine Road Area is undertaken in the autumn months of late-September to October inclusive, in order to avoid the nesting bird season, the majority of the brown hare and hedgehog breeding season, and the hedgehog hibernation season.

Checks for individual brown hare leverets and hedgehogs should be made prior to vegetation removal.

In order to maintain habitat connectivity throughout the Phase 2, 3 and 4 Area it is recommended that hedgerow is planted between garden plots, or where fencing is necessary, a gap of 13x13cm is created at their base to allow the free passage through the development post-construction.

5.3 General Construction

Construction works have the potential to have significant negative impacts on site and its surrounding habitat if not undertaken properly. Therefore, all construction activities should comply with general environmental best practice measures, including:

- A Construction Environmental Management Plan (CEMP) should be implemented on site. This will detail measures avoid, minimise or mitigate any potential negative effects caused by construction practices on the environment on and surrounding the site.
- Run-off from areas of arisings should be controlled to prevent any pollutants/ contaminants entering the watercourses on and in proximity to the site.
- Appropriate measures to suppress dust should be put in place during hot, dry, or windy weather.
- Excavations should be sealed overnight or should have at least one shallow-sloping side allowing animals to escape should they fall in.
- An ecologist should be contacted for advice should any protected species be discovered during construction.

6 References

Bat Conservation Trust (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (Third Edition). The Bat Conservation Trust, London.

Bat Conservation Trust / Institution of Lighting Professionals (2018). Guidance Note 08/18: Bats and artificial lighting in the UK. Bats and the Built Environment series.

CIEEM (2019). Advice Note on the Lifespan of Ecological Reports and Surveys. CIEEM.

IEA (1995). Guidelines for Baseline Ecological Assessment. E & F Spon.

JNCC (2010). Handbook for Phase One Habitat Survey – 2010 Edition. England Field Unit, Nature Conservancy Council. Reprinted JNCC.

Stace, C. (2010). New Flora of the British Isles. 3rd ed. Cambridge: Cambridge University Press.

Appendix 1 – Relevant Legislation

Bats

All species of bat are listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species Regulations 2017*, making them *European Protected Species*. They are afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb any such animal, including in particular any disturbance which is likely to:
    - impair its ability to survive, breed, or rear or nurture their young;
    - impair its ability to hibernate or migrate.
    - affect significantly the local distribution or abundance of that species; or
- damage or destroy a breeding site or resting place of any such animal; or
- intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection

In addition, five British bat species are listed on Annex II of the Habitats Directive. These are:

- Greater horseshoe bat (*Rhinolophus ferrumequinum*)
- Lesser horseshoe bat (*Rhinolophus hipposideros*)
- Bechstein's bat (*Myotis bechsteinii*)
- Barbastelle (*Barbastella barbastellus*)
- Greater mouse-eared bat (*Myotis myotis*)

Amphibians

Great crested newt (*Triturus cristatus*) and natterjack toad (*Epidalea calamita*) are both listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species Regulations 2017*, making them *European Protected Species*. They are afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb any such animal, including in particular any disturbance which is likely to:
    - impair its ability to survive, breed, or rear or nurture their young;
    - impair its ability to hibernate or migrate.
    - affect significantly the local distribution or abundance of that species; or

- damage or destroy a breeding site or resting place of any such animal; or
- intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection.

Badger

The *Protection of Badgers Act 1992* consolidates previous legislation (including the *Badgers Acts 1973 and 1991*, and the *Badgers* (*Further Protection*) *Act 1991*). It makes it an offence to:

- wilfully kill, injure or take, or attempt to kill, injure or take a badger;
- cruelly ill-treat a badger, dig for a badger; use badger tongs in the course of killing or taking, or attempting to kill or take a badger; or use for the purpose of killing or taking a badger any firearm other than that stated under the exceptions within the Act;
- intentionally or recklessly interfere with a badger sett;
- sell or offer for sale a live badger, or have possession or control of a live badger; and
- mark a badger or attach any ring, tag, or other marking device to a badger.

Section 3 of the Act defines interference (with a sett) as:

- damaging a sett;
- destroying a sett;
- obstructing access to, or any entrance of, a sett;
- causing a dog to enter a sett; or
- disturbing a badger when it is occupying a sett.

Under Section 14 of the Act, a sett is defined as "any structure or place which displays signs indicating current use by a badger".

Under Section 10 (1)(d) of the Act, a licence may be granted by Natural England to interfere with a badger sett for the purpose of development, as defined by Section 55(1) of the *Town and Country Planning Act 1990*.

Breeding Birds

With certain exceptions[1], all wild birds, their nests and eggs are protected by Section 1 of the *Wildlife and Countryside Act 1981* (as amended). Therefore, it is an offence to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or

[1] Some species, such as game birds, are exempt in certain circumstances.

- intentionally take or destroy the egg of any wild bird.

These offences do not apply to hunting of birds listed in Schedule 2 subject to various controls.

Bird species listed on Schedule 1 of the Act receive further protection, thus for these species it is also an offence to:

- intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or
- intentionally or recklessly disturb the dependent young of any such bird.

Reptiles

The four widespread[2] species of reptile that are native to Britain, namely common or viviparous lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix helvetica*), are listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence, inter alia, to intentionally kill or injure any of these species.

Hedgehog

The hedgehog was added to the list of UK BAP species in 2007, and is on the Biodiversity Lists for England and Wales (Listed as species of principal importance under the *NERC act 2006*, and Northern Ireland (listed as a Priority Species in the Northern Ireland Priority Species List, March 2010).

Otter

The Eurasian otter is fully protected under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species Regulations 2017*, making it a *European Protected Species*. It is therefore an offence to;

- intentionally or deliberately capture, injure or kill an otter.
- damage or destroy a breeding or resting place of an otter, or intentionally or recklessly damage or destroy any structure or place used for shelter or protection.
- intentionally or recklessly disturb an otter in a place used for shelter or protection, or deliberately disturb otters in such a way as to be likely significantly to affect (i) the ability of any significant group of otters to survive, breed, rear or nurture their young, or (ii) the local distribution or abundance.
- intentionally or recklessly obstruct access to a place used for shelter or protection.

A licence is required from Natural England (or the equivalent statutory body) if an otter is known to be in residence on site and will be physically disturbed.

[2] The other native species of British reptile (sand lizard and smooth snake) receive a higher level of protection under *The Habitats and Species Regulations 2017* and (in England and Wales only) the *Wildlife and Countryside Act 1981* (as amended). However, the distribution of these species is restricted to only a very few sites. All marine turtles (Cheloniidae and Dermochelyidae) are also protected.

Water Vole

The water vole received limited legal protection in April 1998 through its inclusion in Schedule 5 of the *Wildlife & Countryside Act 1981* (as amended). This protection was extended in April 2008, so that Water voles were fully protected under Section 9.

Legal protection makes it an offence to:

- intentionally kill, injure or take (capture) a water vole
- possess or control a live or dead water vole, or any part of a water vole
- intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place

Invasive Non-native Plant Species

The *Wildlife and Countryside Act 1981* (as amended) is the principal piece of legislation in the UK that regards invasive non-native species. It is an offence under Section 14 (2) (a) to "plant or otherwise cause to grow in the wild" any species listed on Schedule 9, Part II of the Act.

Species listed on Schedule 9, Part II are detailed in the Table below:

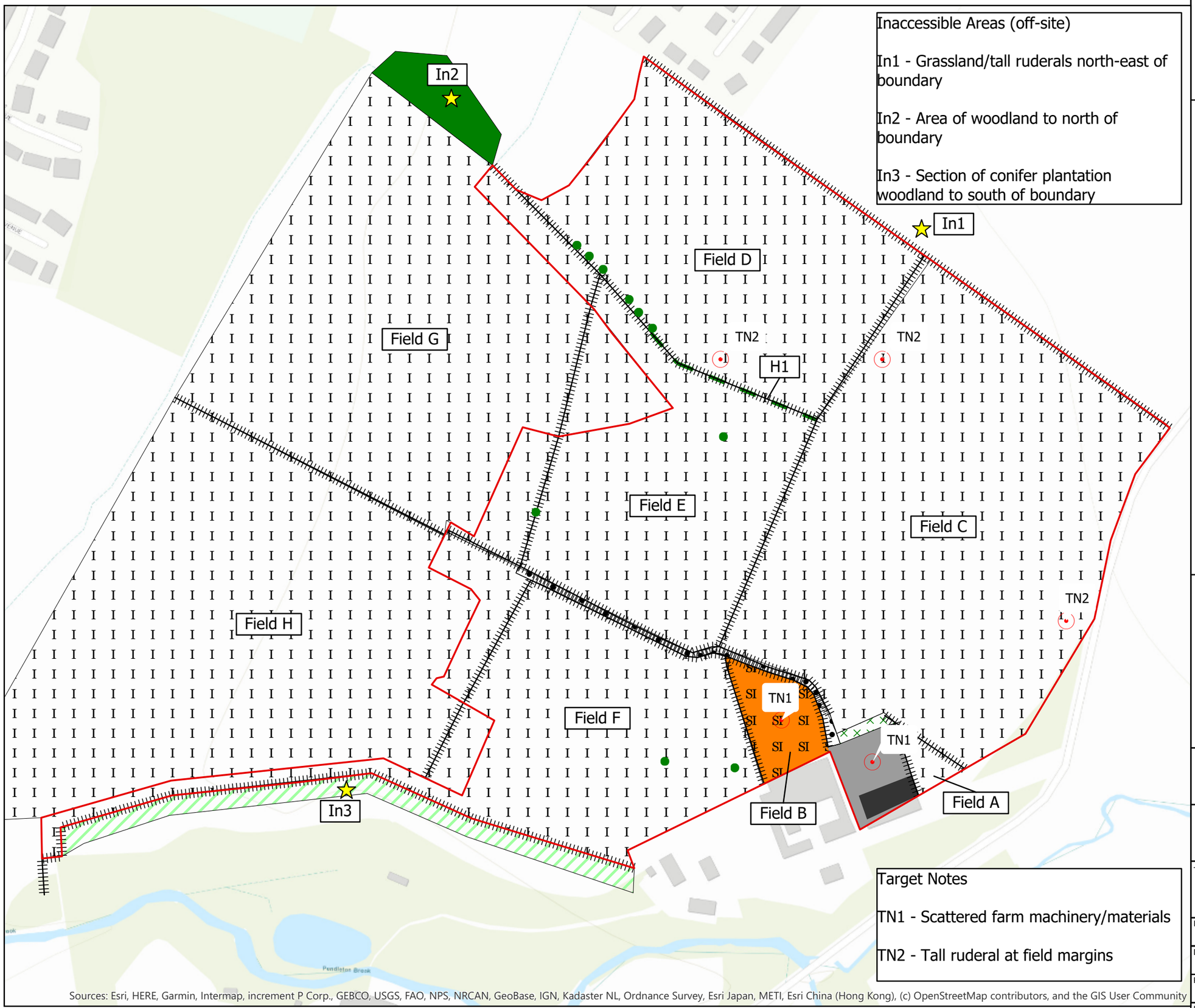
Invasive plant species listed in Schedule 9			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Californian red seaweed	*Pikea californica*	Japanese seaweed	*Sargassum muticum*
Curly waterweed	*Lagarosiphon major*	Laver seaweeds (except native species)	*Porphyra* spp
Duck potato	*Sagittaria latifolia*	Montbretia	*Crocosmia x crocosmia*
Entire-leaved cotoneaster	*Cotoneaster integrifolius*	New Zealand pygmyweed	*Crassula helmsii*
False Virginia creeper	*Parthenocissus inserta*	Parrot's-feather	*Myriophyllum aquaticum*
Fanwort / Carolina water-shield	*Cabomba caroliniana*	Perfoliate Alexanders	*Smyrnium perfoliatum*
Few-flowered garlic	*Allium paradoxum*	Pontic rhododendron	*Rhododendron ponticum*
Floating pennywort	*Hydrocotyle ranunculoides*	Purple dewplant	*Disphyma crassifolium*
Floating water primrose	*Ludwigia peploides*	Red algae	*Grateloupia luxurians*
Giant hogweed	*Heracleum mantegazzianum*	Rhododendron	*Rhododendron ponticum* × *Rhododendron maximum*
Giant kelp	*Macrocystis* spp.	Small-leaved cotoneaster	*Cotoneaster microphyllus*
Giant knotweed	*Fallopia sachalinensis*	Three-cornered garlic	*Allium triquetrum*
Giant rhubarb	*Gunnera tinctoria*	Variegated yellow archangel	*Lamiastrum galeobdolon* subsp. *argentatum*
Giant salvinia	*Salvinia molesta*	Virginia creeper	*Parthenocissus quinquefolia*
Green seafingers	*Codium fragile*	Wakame	*Undaria pinnatifida*
Himalayan cotoneaster	*Cotoneaster simonsii*	Wall cotoneaster	*Cotoneaster horizontalis*
Hollyberry cotoneaster	*Cotoneaster bullatus*	Water fern	*Azolla filiculoides*
Hooked asparagus seaweed	*Asparagopsis armata*	Water hyacinth	*Eichhornia crassipes*
Hottentot fig	*Carpobrotus edulis*	Water lettuce	*Pistia stratiotes*
Hybrid knotweed	*Fallopia japonica* × *Fallopia sachalinensis*	Water primrose	*Ludwigia grandiflora* & *Ludwigia uruguayensis*

Invasive plant species listed in Schedule 9			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Indian (Himalayan) balsam	*Impatiens glandulifera*	Waterweeds	*Elodea* spp.
Japanese knotweed	*Fallopia japonica*	Yellow azalea	*Rhododendron luteum*
Japanese rose	*Rosa rugosa*		

In accordance with Sections 33 and 34 of the *Environmental Protection Act 1990*, if taken from their place of origin, any plant listed on Schedule 9, Part II of the *Wildlife and Countryside Act 1981* (as amended) and their associated material (e.g. soil and ash) are classed as controlled waste and must be disposed of at a licenced landfill site by a licenced waste carrier. Any waste being disposed of must be accompanied by appropriate waste transfer documentation.

In accordance with Section 79 of the *Environmental Protection Act 1990*, in certain circumstances Local Authorities have the power to deal with plants that are considered to be a statutory nuisance. A statutory nuisance is defined as: "any premises in such a state as to be prejudicial to human health or a nuisance". For instance, giant hogweed can be considered a statutory nuisance where the plant is growing along pathways or on land which is easily accessible to users or passers-by as the plant is a risk to human health upon contact.

Appendix 2 – Phase 2, 3 and 4 Area Habitat Map and Target Notes



Legend

- Inaccessible Area
- Target Note
- Broadleaved Tree
- Redline Boundary
- Fence
- Defunct Hedgerow
- Semi-natural broadleaved Woodland
- Plantation Conifer Woodland
- Scattered Scrub
- Bare Ground
- Hardstanding
- Building (B1)
- Semi-improved Grassland
- Improved Grassland

N

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Client: **TAYLOR WIMPEY**

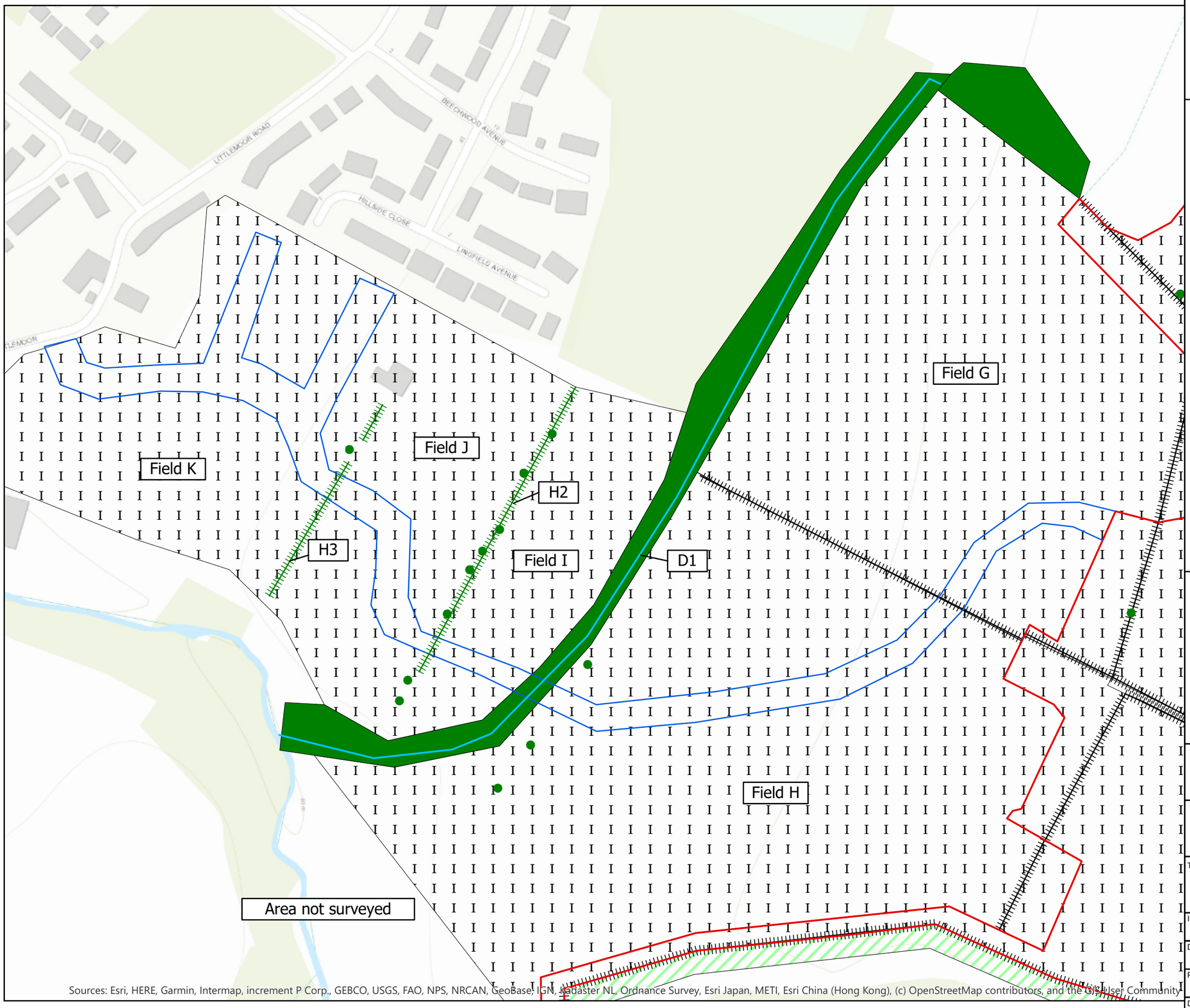
Project: **UG132 PENDLE ROAD, CLITHEROE PHASE 2,3 & 4 AREA**

Title: **HABITAT MAP**

Issue: **PLANNING**

Drawn:	Checked:	Approved:
JF	AB	AB
Project:	**Scale @ A3:**	**Date:**
UG132	NTS	04/07/2019
Dwg No:		**Revision:**
UG_132_ECO_HM1_01		01

Appendix 3 – Spine Road Area Habitat Map and Target Notes



Legend

- Broadleaved Tree
- Phase 2, 3 & 4 Area Boundary
- Fence
- Semi-natural broadleaved Woodland
- Plantation Conifer Woodland
- Improved Grassland
- Spine Road Boundary
- Running Water (D1)
- Species Poor Hedge with Trees

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Client: **TAYLOR WIMPEY**

Project: **UG132 PENDLE ROAD, CLITHEROE SPINE ROAD AREA**

Title: **HABITAT MAP**

Issue: **PLANNING**

Drawn:	Checked:	Approved:
JF	AB	AB
Project: UG132	**Scale @ A3:** NTS	**Date:** 04/07/2019
Dwg No: UG_132_ECO_HM2_01		**Revision:** 01

Appendix 4 - Botanical Species Lists

Phase 2, 3 and 4 Area

Improved Grassland		
Perennial ryegrass	*Lolium perenne*	A
Rough-stalked meadowgrass	*Poa trivialis*	A
Creeping buttercup	*Ranunculus repens*	LA, O
Yorkshire fog	*Holcus lanatus*	F
Meadow foxtail	*Alopecurus pratensis*	LF
Broadleaved dock	*Rumex obtusifolius*	O
Creeping thistle	*Cirsium arvense*	O
Spear thistle	*Cirsium vulgare*	R
Semi-Improved Grassland		
Yorkshire fog	*Holcus lanatus*	D
Perennial ryegrass	*Lolium perenne*	F
Rough-stalked meadowgrass	*Poa trivialis*	F
Creeping buttercup	*Ranunculus repens*	O
Dandelion	*Taraxacum officinale* agg.	O
Creeping thistle	*Cirsium arvense*	O
Broadleaved dock	*Rumex obtusifolius*	R
H1 Defunct Hedgerow with Trees		
Hawthorn	*Crataegus monogyna*	D
Bramble	*Rubus fruticosus* agg.	F
Nettle	*Urtica dioica*	F
Broadleaved dock	*Rumex obtusifolius*	O
English oak	*Quercus patrea*	O
TN1 Tall Ruderals		
Nettle	*Urtica dioica*	D
Cleavers	*Galium aperine*	O
Broadleaved dock	*Rumex obtusifolius*	F
Creeping thistle	*Cirsium arvense*	O

Scattered Broadleaved Trees

English oak	*Quercus patrea*	D
Ash	*Fraxinus excelsior*	O

Spine Road Area

Improved Grassland

Perennial ryegrass	*Lolium perenne*	A
Rough-stalked meadowgrass	*Poa trivialis*	A
Creeping buttercup	*Ranunculus repens*	LA, O
Yorkshire fog	*Holcus lanatus*	F
Meadow foxtail	*Alopecurus pratensis*	LF
Broadleaved dock	*Rumex obtusifolius*	O
Creeping thistle	*Cirsium arvense*	O
Spear thistle	*Cirsium vulgare*	R

D1: Woodland Strip (trees)

Ash	*Fraxinus excelsior*	O
English oak	*Quercus patrea*	O
Alder	*Alnus glutinosa*	R

D1: Woodland (understorey)

Hawthorn	*Crataegus monogyna*	F
Bramble	*Rubus fruticosus* agg.	F
Elder	*Sambucus nigra*	O
Rose	*Rosa* sp.	R
Hazel	*Corylus avallana*	R
Ash (seedlings)	*Frazinus excelsior*	R

D1: Woodland (ground flora)

Ivy	*Hedera helix*	A
Nettle	*Urtica dioica*	F
Dogs mercury	*Mercurialis perennis*	LF
Herb Robert	*Geranium robertanum*	O

Red campion	*Silene dioica*	O
Hogweed	*Heracleum spondylium*	O
Cleavers	*Galium aparine*	O
Wood avens	*Geum urbanum*	R
Dock	*Rumex* sp.	R
H2 & H3 Intact Hedgerow with Trees		
Blackthorn	*Prunus spinosa*	D
Elder	*Sambucus nigra*	F
Hawthorn	*Crataegus monogyna*	O
Bramble	*Rubus fruticosus* agg.	O
Nettle	*Urtica dioica*	O
Broadleaved dock	*Rubmex obtusifolius*	O
Creeping thistle	*Cirsium arvense*	R
Ash	*Fraxinus excelsior*	O
Sycamore	*Acer pseudoplatanus*	R
Scattered Broadleaved Trees		
English oak	*Quercus patrea*	R
Ash	*Fraxinus excelsior*	R