



Ecological Consultants
Environmental and Rural Chartered Surveyors

Preliminary Ecological Appraisal

Land off Myerscough Hall Drive,
Bilsborrow, Preston, PR3 0RY



Tel: 015395 61894
Email: info@envtech.co.uk
Web: www.envtech.co.uk
Envirotech NW Ltd

The Stables, Back Lane, Hale, Milnthorpe, Cumbria. LA7 7BL
Directors: A. Gardner BSc (Hons), MSc, MRICS, Dip NDEA
H. Gardner BSc (Hons), MSc, CEnv, MRICS
Registered in England and Wales. Company Registration Number 5028111

ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.

If in doubt, stop work and seek further professional advice.

Quality and Environmental Assurance

This report has been printed on recycled paper as part of our commitment to achieving both the ISO 9001 Quality Assurance and ISO 14001 Environmental Assurance standards. Envirotech have been awarded the Gold standard by the Cumbria Business Environmental Network for its Environmental management systems.

Author	Chris Arthur	Date	24/11/2014
Updated by	Bradley Foster	Date	30/01/2024
Checked by	Andrew Gardner	Date	02/02/2024
Report Version	2		
Field data entered	<input checked="" type="checkbox"/>		
Report Reference	2496		

Contents

1. EXECUTIVE SUMMARY.....	5
2. INTRODUCTION.....	6
2.1 Background.....	6
2.2 Objectives.....	7
3. METHODOLOGY AND SOURCES OF INFORMATION.....	8
3.1 Data Search.....	8
3.2 Vegetation and Habitats.....	8
3.3 Timing and Personnel.....	9
4. SPECIES SURVEY METHODOLOGY.....	10
4.1 Amphibian.....	10
4.2 Badger.....	10
4.3 Bats.....	11
4.4 Birds.....	12
4.5 Brown Hare.....	12
4.6 Invertebrates.....	12
4.7 Otter.....	12
4.8 Reptiles.....	13
4.9 Water Vole.....	13
4.10 Survey limitations.....	14
5. RESULTS.....	15
5.1 Data Search.....	15
6. UKHabs V2 SURVEY RESULTS.....	20
6.1 Habitat Results.....	20
6.2 Vegetation.....	30
6.3 Amphibian.....	31
6.4 Badger.....	32
6.5 Bats.....	32
6.7 Birds.....	35
6.8 Brown Hare.....	35
6.9 Invertebrates.....	36
6.10 Otter.....	37
6.11 Reptiles.....	37
6.12 Water vole.....	38
6.13 Other.....	38
6.14 Statutory and Non-Statutory Sites.....	39
7. MITIGATION/RECOMMENDATIONS.....	41
7.1 Compensatory planting and habitat enhancement.....	41
7.2 Amphibians.....	41

7.3	Badger.....	42
7.4	Bats.....	42
7.5	Birds.....	44
7.6	Brown Hares.....	44
7.7	Invertebrates.....	44
7.8	Otter.....	45
7.9	Reptiles.....	45
7.10	Water vole.....	45
8	REFERENCES.....	47
9	APPENDIX.....	47

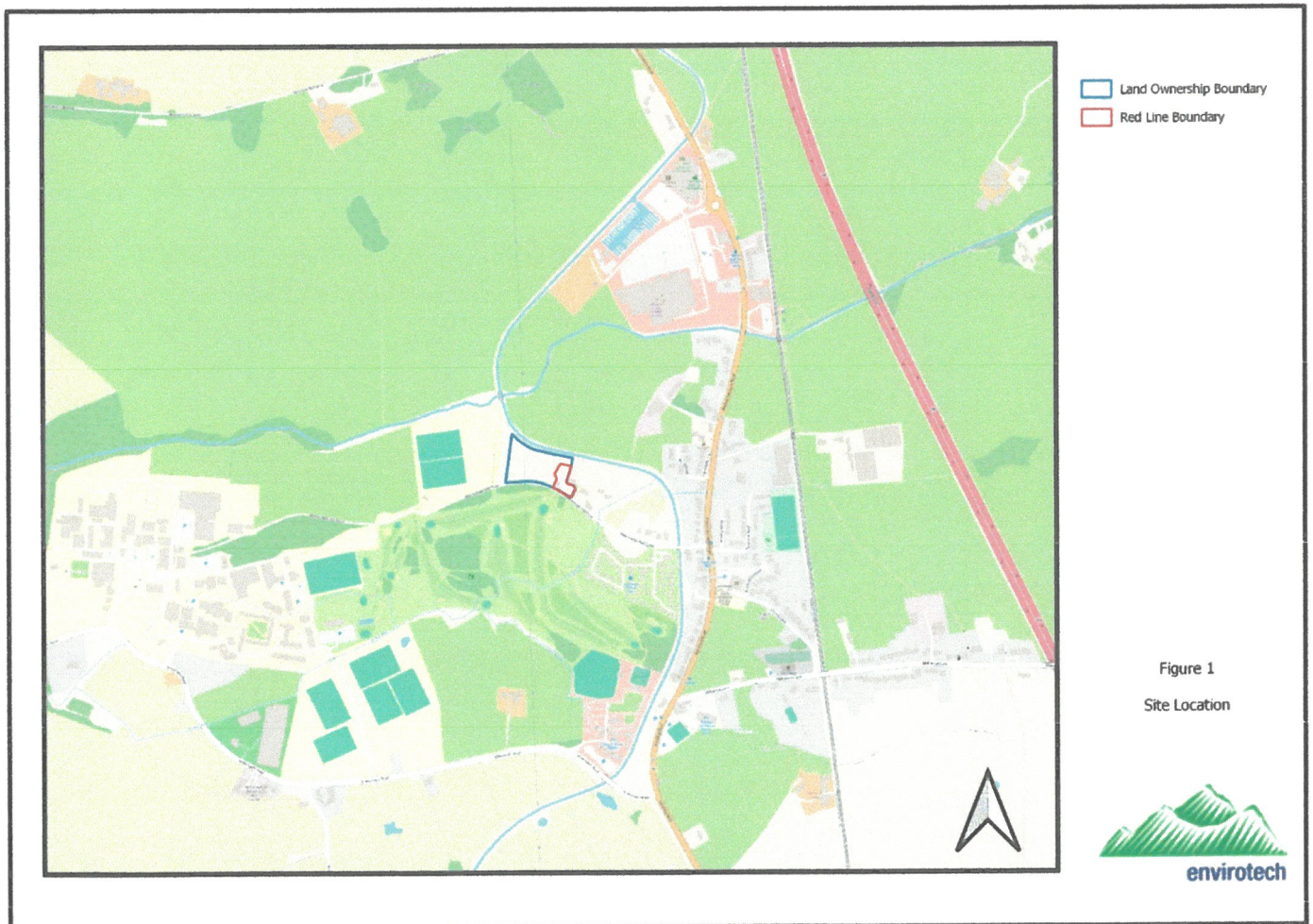
1. EXECUTIVE SUMMARY

- 1.1.1 Envirotech NW Ltd were commissioned in January 2024 to carry out a Preliminary Ecological Appraisal of Land off Myerscough Hall Drive, Bilsborrow, Preston. It is proposed a new dwelling is constructed on site.
- 1.1.2 A data search and desk study of the site and an area within 2km of the site were undertaken to establish the presence of protected species and notable habitats.
- 1.1.3 The site was first visited by Envirotech NW Ltd on 20th November 2014 following the proposed construction of a new stable (to which planning permission was granted). The site was subsequently revisited by Envirotech NW Ltd on 19th January 2024 regarding the construction of a new dwelling.
- 1.1.4 A full botanical survey of the site was undertaken and this was followed by surveys to establish the presence or absence of notable species at the site or in proximity such that they may be affected by the proposed development.
- 1.1.5 The plant species assemblages recorded at the site are all common in the local area and are considered to be of low ecological value, constituting a series of grazed horse paddocks. Sympathetically landscaped open space and garden habitat is considered to offer habitat of equal or greater ecological value.
- 1.1.6 None of the hedgerows around the site perimeter were considered important under the Hedgerow Regulations (1997).
- 1.1.7 No significant changes to the site's vegetation were identified in the 10 years between surveys.
- 1.1.8 Whilst bats, amphibians and nesting birds are known to occur in the local area, there was no conclusive evidence of any specifically protected species regularly occurring on the site or the surrounding areas which would be negatively affected by site development following the mitigation proposed.
- 1.1.9 Contractors will be observant for protected species and all nesting birds. Should any species be found during construction, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

2. INTRODUCTION

2.1 Background

- 2.1.1 In January 2024 Envirotech NW Ltd were commissioned by Caroline Winstanley to carry out a Preliminary Ecological Appraisal of Land of Myerscough Hall Drive, Bilborrow, Preston, central grid reference SD 50681 40256 (Figure 1). A site investigation was undertaken and a report compiled which includes recommendations for any future actions and or mitigation required.
- 2.1.2 The survey was requested in connection with the proposed construction of a new dwelling.
- 2.1.3 The site was previously surveyed by Envirotech NW Ltd in November 2014 following the proposed construction of a new stable (to which planning permission was granted).



2.2 Objectives

2.2.1 The main objectives of the study were:

- The completion of a UKHabs Version 2 (UKHab Ltd (2023)) survey including the preparation of a vegetation and habitat map of the site and the immediate surrounding area.
- The survey and assessment of all habitats for statutorily protected species.
- An evaluation of the ecological significance of the site.
- The identification of any potential development constraints and the specification of the scope of mitigation and enhancement required in accordance with wildlife legislation, planning policy and other relevant guidance, and;
- The identification of any further surveys or precautionary assessments that may be required prior to the commencement of any development activities.

3. METHODOLOGY AND SOURCES OF INFORMATION

3.1 Data Search

- 3.1.1 The Biological Records centre for Lancashire "LERN", the Envirotech dataset, National Biodiversity Network (NBN) and the Multi-Agency Geographic Information for the Countryside (MAGIC) were searched to establish the presence of any records of statutorily protected, notable or rare species, and any designated sites of international, national, regional or local importance within a 2km radius of the site boundary.
- 3.1.2 The Envirotech dataset is compiled from extensive field surveys from the period 2004-present, as well as records obtained from third parties during this time.
- 3.1.3 Google Earth and Google Street View were consulted to establish the presence of any features of ecological importance within the local area.

3.2 Vegetation and Habitats

- 3.2.1 A vegetation and habitat map was produced for the site and the immediate surrounding area. The mapping is based on the UKHabs V2 survey and reporting methodology.
- 3.2.2 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act (1981) and indicators of important and uncommon plant communities. All plant nomenclature follows Stace (2019).
- 3.2.3 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act (1981), namely Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) on terrestrial habitat and aquatic species such as floating pennywort (*Hydrocotyle ranunculoides*), water hyacinth (*Eichhornia crassipes*) and New Zealand pigmyweed (*Crassula helmsii*).
- 3.2.4 The survey was also informed by questioning the landowner/site agent to ascertain the recent history of the site.
- 3.2.5 Habitats of Principal Importance (HPI) were cross referenced with Natural England's inventory against the site boundary and where found ground truthed.

3.3 Timing and Personnel

3.3.1 During the visit, weather conditions were suitable for the survey types undertaken.

3.3.2 The site and surrounding land were first visited on 20th November 2014 by: -

- (MT) Mr Matthew Thomas BSc (Hons), MCIEEM
Natural England Bat Class Licence (Level 2)
Natural England Barn Owl Licence
Natural England Great Crested Newt Licence (Level 2)
- (CA) Mr Charles Arthur BSc (Hons), Msc, MCIEEM
Natural England Bat Class Licence (Level 2)
Natural England Barn Owl Licence
Natural England Great Crested Newt Licence (Level 2)

3.3.3 The site and surrounding land were subsequently revisited on 19th January 2024 by: -

- (BF) Mr Bradley Foster MEnv (Hons)
Natural England Bat Class Licence (Level 2 Agent)
Natural England Barn Owl Licence
Natural England Great Crested Newt Licence (Level 1 Agent)

4. SPECIES SURVEY METHODOLOGY

4.1 Amphibian

- 4.1.1 Great crested newts (*Triturus cristatus*) are protected under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedule 5 of the Wildlife & Countryside Act (1981).
- 4.1.2 Water-bodies located within or adjacent to the study area were identified and where access was possible were assessed for their potential to support great crested newts.
- 4.1.3 The criteria used in the assessment are based on those contained in the Herpetofauna Workers Manual and Oldham et al, 2000, and in applying these criteria a precautionary approach was adopted. Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's Licensing process was used to determine the suitability of ponds for great crested newts.
- 4.1.4 Where relevant, pond assessments were undertaken in order to determine which water-bodies, based on their potential to support great crested newts, should be subject to presence/absence surveys.
- 4.1.5 No waterbodies are located within the curtilage of the site. A number of small features (demarcated as ponds) are located in the Myerscough College Golf Complex to the south, the nearest feature being 50m of the site boundary. However, from a review of satellite imagery and ordnance survey maps these features appear to be sand pits. Resultingly, the site was considered sufficiently low risk for use by breeding GCN such that no further assessments were considered necessary.

4.2 Badger

- 4.2.1 Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act (1992). This legislation arises from animal welfare issues (rather than on the basis of nature conservation grounds) and protects badgers from being killed, injured or disturbed whilst occupying a sett.
- 4.2.2 A disturbance to badgers in their setts may occur as a result of construction operations. Natural England recommends that the use of heavy machinery in proximity of a sett entrance should be avoided, with a 'disturbance free-zone' being established.
- 4.2.3 The degree of disturbance attributed to construction activity is a function of the background level of activity badgers are accustomed to and that which will be attributed to a proposed activity. The "disturbance free zone" is therefore site specific.
- 4.2.4 The survey for badgers comprised an assessment of all suitable habitat within and outside the study area boundary (where this was possible) to a distance of 30m for indications of use by badgers.
- 4.2.5 Signs of badgers which were searched for included:
 - Setts - 'D' shaped entrances at least 25cms wide and wider than they are high with

large spoil mounds

- Discarded bedding at sett entrances (this includes grass and leaves)
- Scratching posts on shrubs and trees close to a sett entrance
- The presence of badger hairs which are coarse, up to 100mm long with a long black section and a white tip
- Dung pit latrines and footprints
- Habitual runs through vegetation and beneath fences
- Hedgehog carcasses

4.3 Bats

4.3.1 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981), and are included on Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, as a Protected Species. Taken together, these pieces of legislation make it an offence to:

- Intentionally or recklessly kill, injure or capture bats;
- Deliberately or recklessly disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts.

4.3.2 The Bat Conservation Trust Collins, J. (ed) (2023) issued guidelines on bat survey methodology, a key feature of their recommendation is for the undertaking of a pre-survey assessment - an initial desk-study and a walkover assessment of the survey area and its surrounding area to identify the relative value of the habitats present for bats and likely commuting routes. This is to be followed by a survey program that is appropriate to the likely level of bat activity within the survey area to be determined by and based on the experience of the surveyor.

4.3.3 The potential value of the survey area for foraging bats was assessed through consideration of two main factors: professional knowledge of bat ecology and foraging behaviour in combination with the geographical location, topography and habitats present within the survey area and surrounds.

4.3.4 Where relevant, trees and structures on and within the survey area boundary were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees and buildings on the site to allow an assessment of their potential to be used by bats to be made by a licensed surveyor.

4.3.5 Trees were all assessed in accordance with Collins, J. (ed) (2023) but categorised as 1* - 3 in accordance with Hundt (2012). Collins, J. (ed) (2023) does not provide roost classification criteria. The schedule of risk provided by Hundt (2012) is considered most appropriate in this case.

4.4 Birds

- 4.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act of 1981 when building a nest, rearing young or sitting on eggs. Some bird species, such as barn owl (*Tyto alba*), are protected when near an active nest site. Several birds are listed as Species of Principal Importance (SPI).
- 4.4.2 Bird species and behaviour were noted during the field survey. All areas are covered equally, in order to avoid the subjective survey of better quality 'bird habitat'.

4.5 Brown Hare

- 4.5.1 The brown hare (*Lepus europaeus*) is a SPI.
- 4.5.2 The survey method involved walking boundaries and surveying with binoculars. The survey was conducted at a suitable distance to ensure that the hares were not disturbed. Generally, surveys were undertaken throughout the early afternoon and evening when hares are thought to be most active and feeding.
- 4.5.3 Where present the number of brown hares in each field or hedgerow was recorded, together with the nature and use of the field, climatic conditions and time of day. The presence of forms and faeces where present were also recorded.

4.6 Invertebrates

- 4.6.1 A general assessment was made of the study area's suitability for supporting invertebrates during the survey. The study area's lack of habitat diversity, species-poor composition and uniformity of vegetation structure (i.e., lack of variation in height and microtopography) resulted in our belief that a low diversity of invertebrates would be likely to occur across the site.
- 4.6.2 The presence of invertebrates was noted during the other surveys which were undertaken. The extent of sampling was limited in that it could be confirmed that no SPI would be likely to be affected by the proposal.

4.7 Otter

- 4.7.1 Otters (*Lutra lutra*) are given protection by the Wildlife and Countryside Act (1981) as amended and Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

This protection means that it is an offence to deliberately or recklessly:

- Kill or injure otters;
- Destroy, damage or obstruct their dens, and
- Disturb them whilst in the den.

4.7.2 Watercourses were assessed for their suitability and for the presence of otters within 10m of the banks. The banks and scrub vegetation were carefully searched for spraints, feeding remains, runs, prints and couches/holts.

4.7.3 The Lancaster Canal is located immediately north of the site boundary.

4.8 Reptiles

4.8.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act of 1981. It is an offence to intentionally kill, injure, sell or advertise to sell any of the six native species.

4.8.2 The survey for these species was based on assessing the habitat type and suitability of the site. This comprised an assessment of satellite imagery for the site and surrounding area as well as comparison of the results from the records searches with habitat types. The general habitat at the site was evaluated in terms of its suitability to reptiles for foraging or breeding.

4.8.3 Habitat at the site was not considered sufficiently suitable for a full presence/absence survey to be warranted.

4.9 Water Vole

4.9.1 Water voles (*Arvicola amphibious*) and their habitat are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981). This provides protection from killing or taking by certain prohibited methods and their breeding and resting places are fully protected from destruction or obstruction, it is also an offence to disturb them in these places.

4.9.2 The Lancaster Canal is located immediately north of the site boundary. This watercourse was surveyed and assessed for evidence of the presence of water vole.

4.9.3 Where relevant, this involved intensive searches by wading upstream where possible, and observing from the banks where not; looking for burrows and other signs including footprints, droppings and chewed vegetation. This was undertaken up to 5m from the water course.

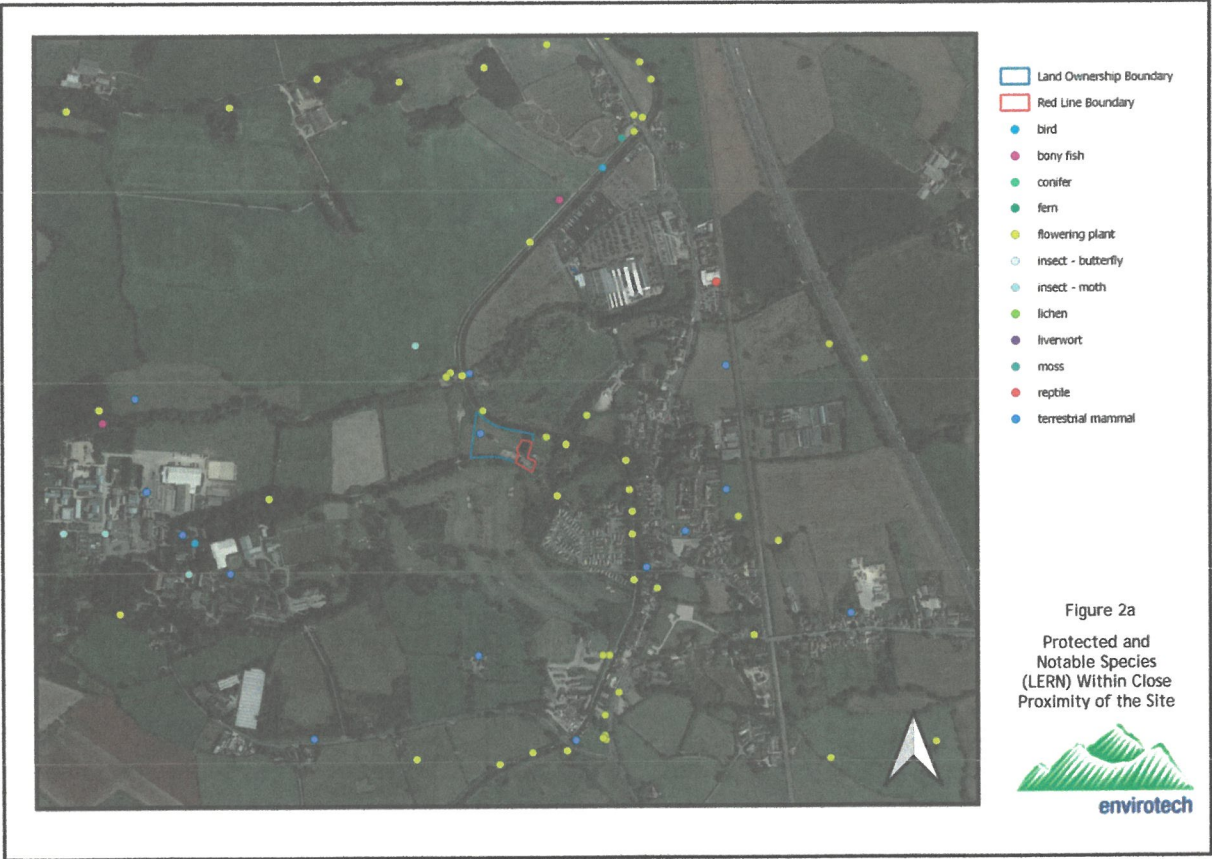
4.10 Survey limitations

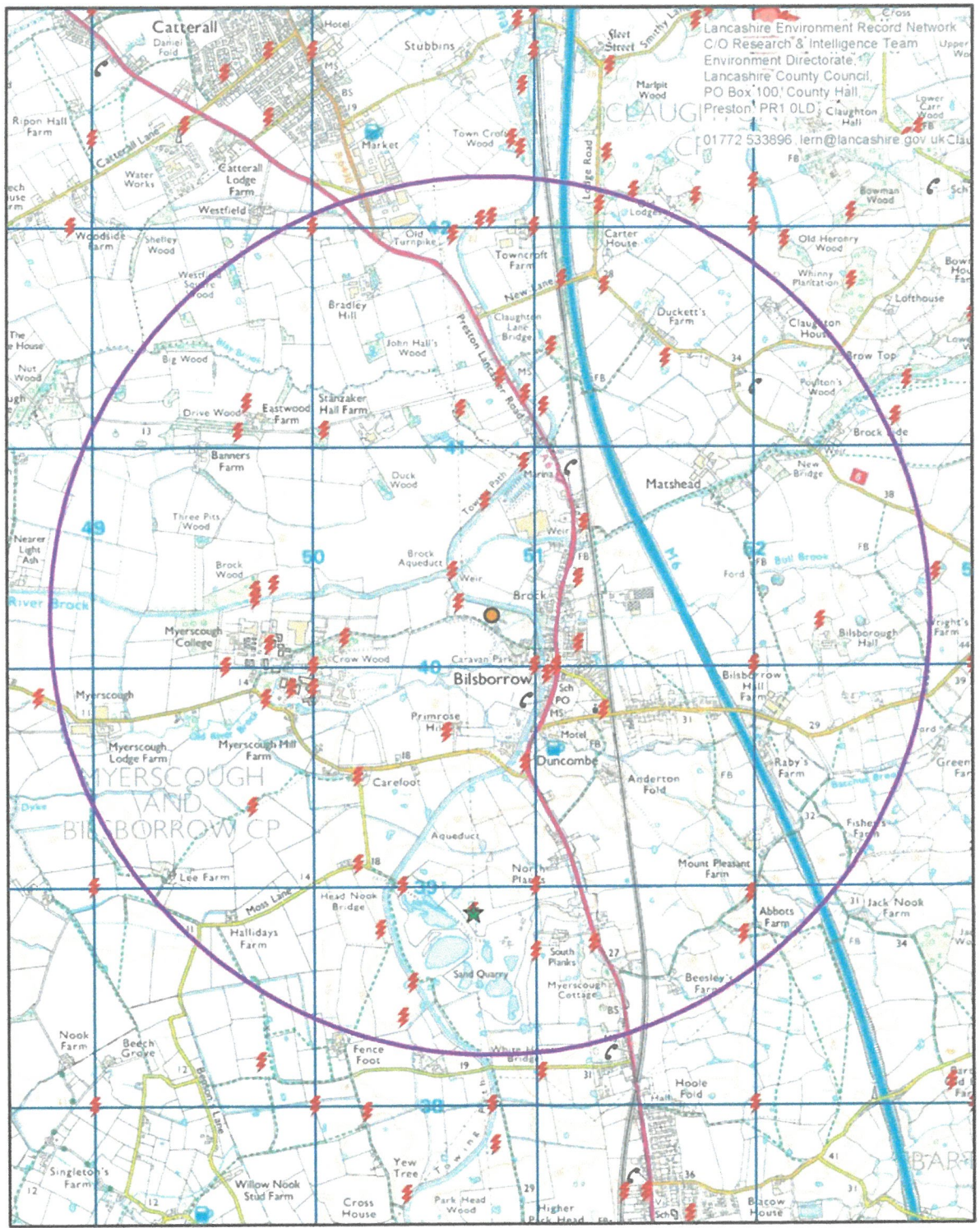
- 4.10.1 The survey was undertaken during mid-winter. At this time of year plant species are less easily identified and the activity of some species is reduced.
- 4.10.2 However, due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site.
- 4.10.3 The duration, extent and scope of the surveys were considered sufficient to plan appropriate mitigation and recommend additional precautionary survey work required prior to the commencement of work.
- 4.10.4 Surveys at the site have been undertaken over a number of years and as survey results remain similar, it is considered the level of use of the site by species targeted for survey has been determined.
- 4.10.5 No significant survey limitations were encountered.

5. RESULTS

5.1 *Data Search*

- 5.1.1 Envirotech and CBDC hold no records of protected or notable species for the site. There are however five records of protected or notable species within the north-west corner of the land ownership boundary, all of which relate to Noctule (*Nyctalus noctula*) (Figure 2a). It is not known if these records relate to known roost sites or flyover observations. There are additional records of protected or notable species within 2km of the site (Figure 2b). These are discussed in the relevant sections below.
- 5.1.2 The nearest non-statutory designated site is the Lancaster Canal, adjacent the northern boundary of the site (Figure 3).
- 5.1.3 There are no statutory designated sites within 2km (Figure 3). The site is however located within a mapped feeding area for Pinkfooted Geese (*Anser brachyrhynchus*). Whilst these zones have no statutory protection *per se*, such areas are considered Functionally Linked Land (FLL). This is defined as land necessary, or critical for, the functionality and integrity of designated sites, whilst also supporting the behavioural and ecological function of those species dependent on such sites.





Lancashire Environment Record Network
 C/O Research & Intelligence Team
 Environment Directorate,
 Lancashire County Council,
 PO Box 100, County Hall,
 Preston PR1 0LD
 01772 533896. lern@lancashire.gov.uk

Legend

-  Acom House 2km Buffer
-  Acom House
-  Great Crested Newt
-  Lancs_Key_Species_20131106

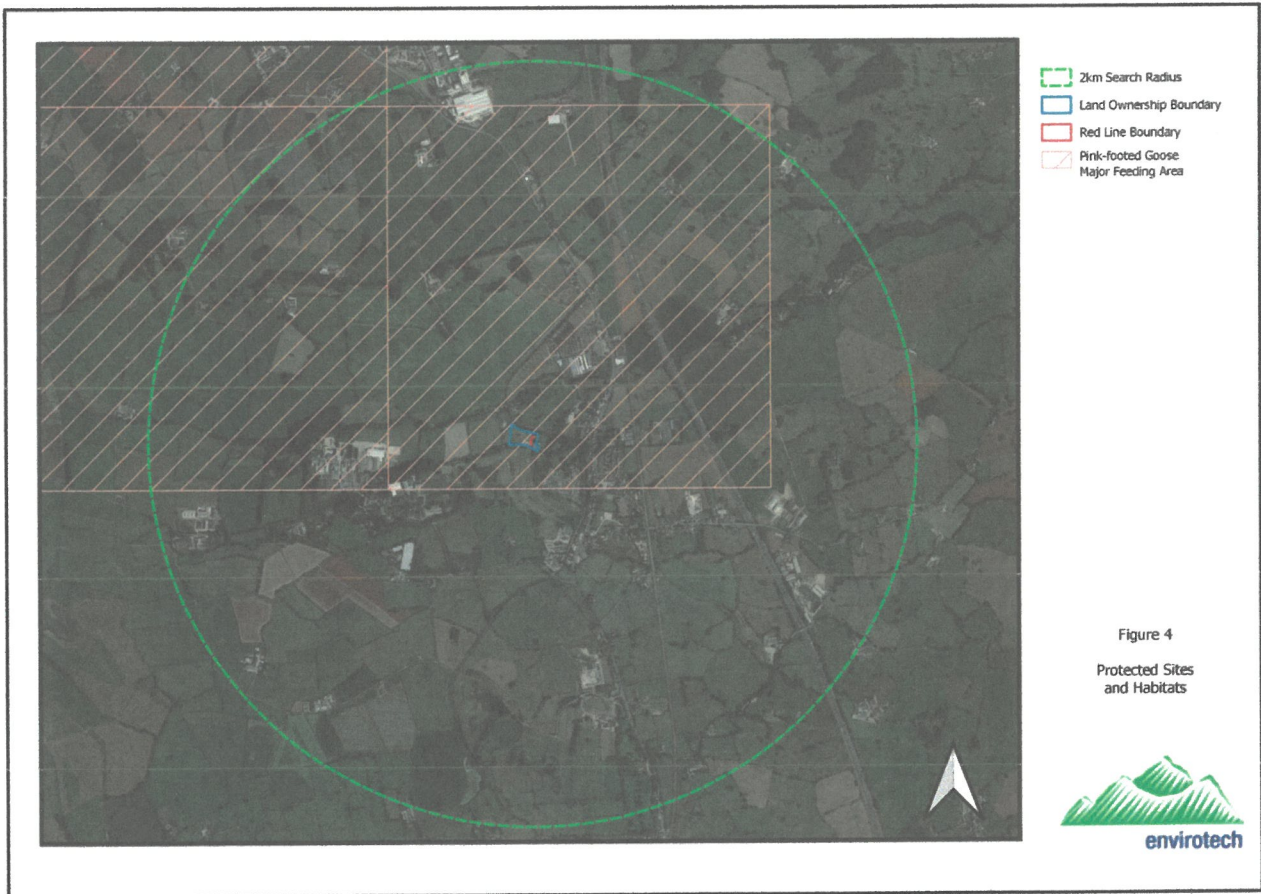
N

LeRN
 1:22,500

Date: 02/04/2014

Figure 2b - Protected and notable species within 2km (LERN RECORDS)





6. UKHabs V2 SURVEY RESULTS

6.1 *Habitat Results*

- 6.1.1 The site comprises a large field of modified grassland bound by a combination of hedges and tree lines to the north, east and south.
- 6.1.2 The site abuts Lancaster Canal to the north, a public highway to the south, a derelict residential dwelling to the East and agricultural land to the West. The wider landscape is a mosaic of agricultural fields and urban mosaic.
- 6.1.3 See Figure 5 for the UK Habs V2 Plan and Table 1 for the descriptive Target Notes.

Target Note	Description	Comment
TN1	Hedgerow 1	An ornamental hedgerow consisting of Beech (<i>Fagus sylvatica</i>) bounds the access point to the site. This hedgerow is sited within the curtilage of the bordering property and is heavily managed.
TN2	Hardstanding	An area of hardstanding has been created in the south-east of the site, forming a parking/turning area for the stable.
TN3	Stable	A small L-shaped stable is located in the south-east of the site- being the focus of a previous Phase 1 Ecology Survey undertaken by Envirotech NW Ltd in November 2014. To the rear of the stable is a rectangular horse arena lined with sand.
TN4	Orchard	A total of twelve small orchard trees have been planted in the north-east corner of the site. This area is still regularly managed/disturbed and possess the same habitat structure as the rest of the site. Resultingly, the dominant habitat type has been mapped as modified grassland.
TN5	Tree Line	Abutting the site to the east is a tall line of drawn up Poplar (<i>Populus</i> sp.) trees. These trees are sited within the curtilage of the bordering property.
TN6	Bramble Scrub	A small area of Bramble (<i>Rubus fruticosus</i> agg) scrub bounds the north-east corner of the site, fronting the hedgerow to the north. Scrub covers an area <25m ² and has therefore been target noted.
TN7	Hedgerow 2	A 172m-long native hedgerow bounds the northern edge of the site, separating the site from the Lancaster Canal. This hedgerow is mostly composed of Hawthorn (<i>Crataegus monogyna</i>), with small amounts of Blackthorn (<i>Prunus spinosa</i>), Rose (<i>Rosa canina</i> or <i>arvensis</i>) and young Sycamore (<i>Acer pseudoplatanus</i>) trees. A mature Sycamore tree is located approximately halfway along the hedgerow. The hedgerow is sited on a slight southern-facing banking and contains a moderate diversity of groundflora species. Such species include Cowbane (<i>Cicuta virosa</i>), Garlic mustard (<i>Alliaria petiolata</i>), Coltsfoot (<i>Tussilago farfara</i>), Slender borage (<i>Borago pygmaea</i>), Lesser celandine (<i>Ranunculus ficaria</i>), Barren Strawberry (<i>Potentilla sterilis</i>), Spear thistle (<i>Cirsium vulgare</i>), Dogs mercury (<i>Mercurialis perennis</i>) and Greater Woodrush (<i>Luzula sylvatica</i>).

TN8	Modified Grassland	The site consists of a large horse grazed paddock of poor semi-improved grassland segmented by a mixture of stock and electrical fencing. Graminoids dominate the sward, comprising Perennial rye grass (<i>Lolium perenne</i>), Yorkshire fog (<i>Holcus lanatus</i>), Red fescue (<i>Festuca rubra</i> agg.), False oat grass (<i>Arrhenatherum elatius</i>), Annual Meadow Grass (<i>Poa annua</i>), Common Bent (<i>Agrostis capillaris</i>) and Cock's foot (<i>Dactylis glomerata</i>). The sward is lush, of a uniform height and comprised of >25% Perennial Ryegrass. Forbs such as Common mouse ear (<i>Cerastium fontanum</i>), Chickweed (<i>Stellaria media</i>), Creeping buttercup (<i>Ranunculus repens</i>), White clover (<i>Trifolium repens</i>), Dandelion (<i>Taraxacum officinale</i>), Hairy Bittercress (<i>Cardamine hirsuta</i>), Large-leaved avens (<i>Geum macrophyllum</i>) and Sorrel (<i>Rumex acetosella</i>) are found throughout the sward, with Nettle (<i>Urtica dioica</i>), Broad leaved dock (<i>Rumex obtusifolius</i>), Rosebay Willow herb (<i>Epilobium angustifolium</i>) and Hogweed (<i>Heracleum sphondylium</i>) present around the less grazed peripheries. These latter species form distinct stands, as are often found in horse grazed pastures as a result of localised nutrient enrichment.
TN9	Semi-mature Oak Tree	A single rural tree consisting of semi-mature Oak (<i>Quercus</i> sp.) is located in the west of the site and surrounded by open grassland.
TN10	Hedgerow 3	Bounding the south of the site is a native tree-containing hedgerow measuring 160m-long. This hedgerow contains a good mix of woody species that includes Oak, Holly (<i>Ilex aquifolium</i>), Sycamore, Rose (<i>Rosa canina</i> or <i>arvensis</i>), Ash (<i>Fraxinus excelsior</i>), Elderberry (<i>Sambucus nigra</i>), Hazel (<i>Corylus avellana</i>) and Holly (<i>Ilex aquifolium</i>). This hedgerow is tall and possesses a high degree of vegetative diversity, ranging from scrubby Hazel and Hawthorn through to semi-mature Ash and Sycamore trees. There are no woodland ground flora species associated with this hedgerow, with Ivy (<i>Hedera helix</i>) and Bramble being the only other species recorded.
TN11	Scattered Rushes and Ruderal Vegetation	Small patches of grassland in the south-west corner of the site are rougher and more unmanaged, comprising rank grassland dominated by tussocks of Nettle, Broad-leaved Dock, Rosebay Willowherb, Hogweed and Field Thistle (<i>Cirsium discolor</i>). There are occasional stands of Soft Rush (<i>Juncus effusus</i>) where the ground is damp and shaded.
TN12	Fallen Trees	Bounding the north-west corner of the site is a small coppice of trees- a Field Maple having fallen onto the western boundary fence.

TN13	Lancaster Canal	Located beyond the site to the north is Lancaster Canal (designated as a Biological Heritage Site), which is obscured from the site by Hedgerow 2.
<i>Table 1 Details of Target Notes.</i>		





A hardstanding yard area fronts the stable.

Hedgerow 1 consists of an ornamental Beech hedgerow, comprising the curtilage of the adjacent garden.

A derelict residential dwelling is also located beyond the boundary fence.



Twelve small trees have been planted in the north-east corner of the site, constituting a rudimentary orchard-type habitat. Trees consist of Hazel (*Corylus avellana*), Cherry (*Prunus avium*) and Apple (*Malus domestica*).



Modified grassland is still the dominant habitat type here (consisting of a short, managed sward) and has therefore been mapped accordingly.

All trees are to be retained, although formalised within the proposed dwellings garden area.



A small area of Bramble scrub is located in the north-east corner of the site, linking with Hedgerow 2.



A line of tall, drawn-up Poplar trees bounds the site to the east. Trees were likely planted as hedgerow some years ago before becoming overgrown.

Trees are sited in the neighbouring parcel of land.

At this stage, it is proposed the tree line is felled.



The site consists of a large field of modified grassland dominated by lush palatable grasses and Perennial Ryegrass; the site constituting a grazed horse paddock divided by stock and electric fencing.



A horse arena lined with sand is located to the rear of the stable.



A semi-mature Oak tree is located in the west of the site and surrounded by open grassland.



The sward is short and uniform, being regularly grazed.



Lush grasses dominate the sward.



Hedgerow 2 constitutes a long hedgerow dominated by Hawthorn, obscuring the site from the Lancaster Canal.



Hedgerow 2 sits on a slight southern-facing banking and contains a good mix of groundflora species, ranging from herbs through to rushes, ruderal species tall grass.



Hedgerow 3 constitutes a species-rich mix of native woody species stocked with semi-mature Ash and Sycamore trees (as seen looking south-east from within the site).



Hedgerow 3, as seen looking west along Myerscough Hall drive.

Table 2 Photographs

6.2 Vegetation

- 6.2.1 Details of the plant species found on site are included in the target notes. Species recorded are all commonly occurring and undoubtedly occur elsewhere in similar habitats in the local area.
- 6.2.2 The modified grassland has a low species diversity and ecological value, constituting a series of grazed horse paddocks. Whilst the assemblage of species within it is higher than improved pasture, species are all indicative of regular grazing and disturbance. This habitat does not constitute a Habitat of Principal Importance (HPI).
- 6.2.3 Contained within the north-east corner of the site are twelve small fruit and nut trees, constituting a rudimentary orchard-type habitat. Trees consist of Hazel (*Corylus avellana*), Cherry (*Prunus avium*) and Apple (*Malus domestica*). Modified grassland is still the dominant habitat type here (consisting of a short, managed sward) and has therefore been mapped accordingly.
- 6.2.4 All orchard trees are to be retained, although formalised within the proposed dwellings garden area.
- 6.2.5 Hedgerow 1 is defined as an ornamental Beech hedgerow, forming the curtilage of the neighbouring dwelling. This is located beyond the extent of the site and will not be impacted by works.
- 6.2.6 The tree line to the north-east of the site consists of a line of tall, drawn-up Poplar trees, which were likely planted as hedgerow some decades ago. This tree line is sited within the opposing land ownership boundary. It is our understanding that these trees are to be removed.
- 6.2.7 Hedgerow 2 consists of a 172m-long hedgerow dominated by Hawthorn, with occasional Blackthorn, Sycamore and Rose. A mature Sycamore tree is located approximately halfway along the hedgerow. This hedgerow sits atop a slight southern-facing bank and contains a good mix of groundflora species, ranging from small herbs through to rushes, ruderal species and tall grass.
- 6.2.8 Hedgerow 3 constitutes a species-rich mix of native shrubs interspersed with semi-mature Ash and Sycamore trees.
- 6.2.9 None of the hedgerows are classified as important under the Hedgerow Regulations (1997) (See Appendix 1) owing to failing to contain the minimum number of woody/groundflora species and associated features per unit length.
- 6.2.10 The only tree located within the site is a semi-mature Oak. This is located in the west of the site and surrounded by open grassland.
- 6.2.11 There is no evidence of Japanese knotweed, giant hogweed or Himalayan balsam on the site. No other invasive or notable weed species listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) was identified within the site or adjacent land.

6.3 Amphibian

6.3.1 There are 280 records of amphibians within 2km of the site (Figure 6). Species recorded locally are Common frog (*Rana temporaria*), Common toad (*Bufo bufo*), Smooth newt (*Lissotriton vulgaris*), Palmate newt (*Lissotriton helveticus*) and Great crested newt.

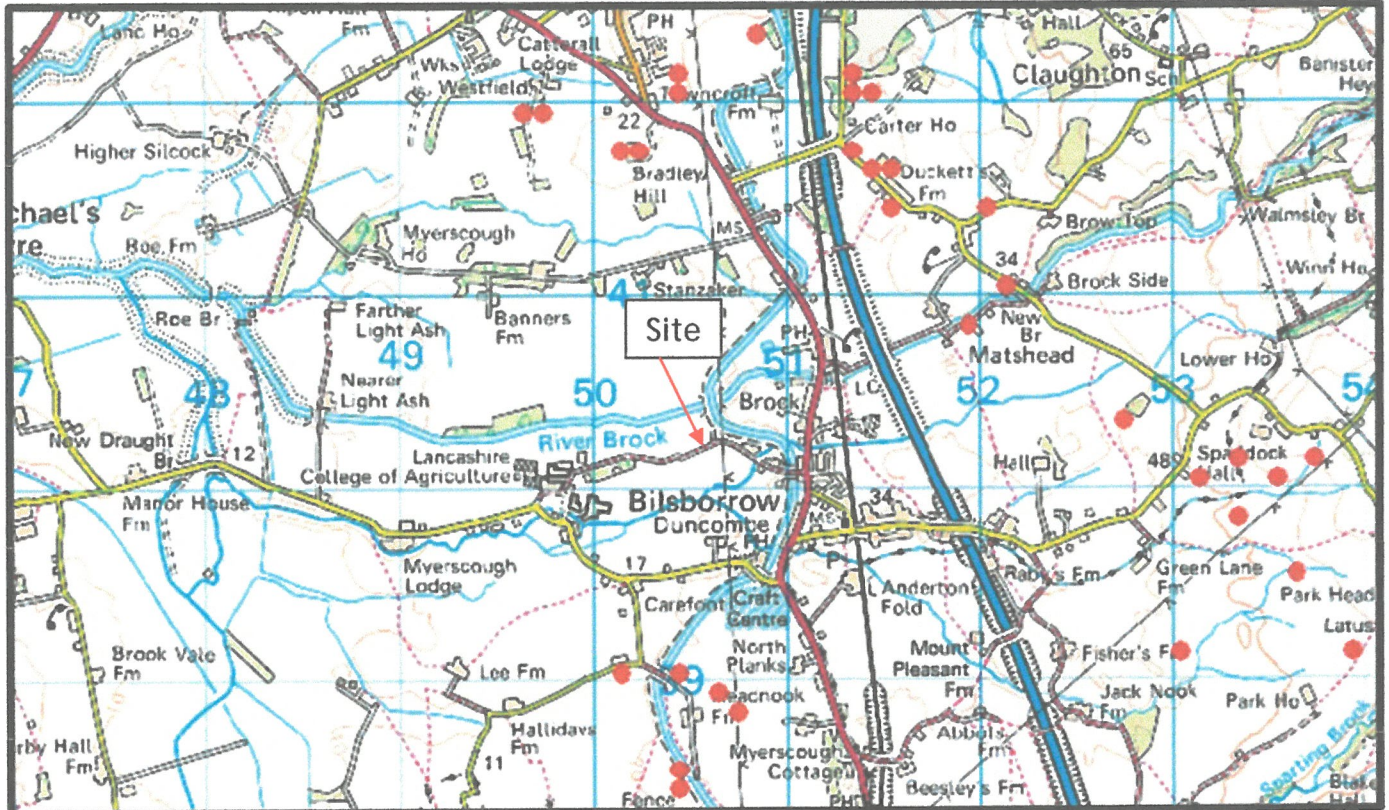


Figure 6 - Amphibian records shown in red

- 6.3.2 The core development area has a low value to amphibians being open and exposed. The boundary hedgerows could be utilised as refuges and/or hibernacula but there are no breeding ponds either within, or in close proximity to the site.
- 6.3.3 A number of small features (demarcated as ponds) are located in the Myerscough College Golf Complex to the south, the nearest feature being 50m of the site boundary. However, from a review of satellite imagery and ordnance survey maps, these features appear to be sand pits.
- 6.3.4 Structural diversity at ground level across the site is very poor. There are no areas with log, rubble piles or compost heaps which would be particularly favourable to amphibians.
- 6.3.5 Amphibians would be unlikely to attempt to cross the site as it comprises an area that is mostly open with uniform length grass. Whilst not a physical barrier to the dispersal of amphibians, the site is regarded as being a potentially hostile environment to them.
- 6.3.6 These species are considered to be absent from the site. The proposed development will not result in the permanent loss of or a substantial negative effect on any water-bodies or foraging areas linked to them. Boundary areas, which may provide foraging or refuge sites, are to be retained.

6.3.7 No specific mitigation is considered necessary.

6.4 Badger

6.4.1 No records of badgers occur within 2km of the site.

6.4.2 Badger setts do not occur on site and a lack of feeding signs or runs across the site would suggest that they do not occur within 30m of site boundaries.

6.4.3 The proposed development will not impact on any existing badger runs or setts. The porosity of the surrounding fields to the passage of badgers will not be affected.

6.5 Bats

6.5.1 There are 137 records of five species of bat within 2km of the site (Figure 7). Species recorded locally are Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*), Noctule (*Nyctalus noctula*), Daubenton's (*Myotis daubentonii*) and Whiskered (*Myotis mystacinus*) bats.



6.5.2 There are five records of Noctule (*Nyctalus noctula*) (Figures 2a and 7) within the land ownership boundary of the site. It is not known if these records relate to known roost sites or flyover observations.

- 6.5.3 The foraging habitat at the site is predominantly poor for bat species, being mostly open and exposed. The modified grassland offers negligible foraging opportunities for bats. The hedge and tree lines bounding the site however possess a moderate height and vegetative diversity and are likely used by bats foraging and commuting around the site edges, especially given the proximity of the site to Lancaster Canal.
- 6.5.4 Whilst trees and hedgerows on site offer the best foraging habitat for bats on site, they are not considered exceptional in the local area. More extensive areas of medium and high-quality habitat occur locally, including the riparian woodland to the east and west.
- 6.5.5 It is not considered there would be significant degradation of foraging habitat as a result of the proposal so long as the hedgerows and trees are retained and or their loss is compensated for in any landscaping scheme. At this stage, it is proposed that the new building is sited in the north-east of the site, with Hedgerows 2 and 3 unaffected by works.
- 6.5.6 All trees around the site perimeter were also assessed in accordance with Collins ed. (2016) and assigned a risk category. All of the trees on site were category 2 (low) or category 3 (negligible) risk. No indications of roosting or highly suitable roost sites were located within the trees. All of the trees could be adequately inspected. Risk categories from Hundt (2012) and the requirement for mitigation for each tree category are shown on Figure 8.
- 6.5.7 We consider bat species are highly unlikely to rely on the site for feeding but may occur in the local area, in addition to the site edges. Roosting by bats will not occur on the site.
- 6.5.8 Precautionary mitigation would be appropriate in respect of ensuring the foraging habitat on site is at least improved for use by bats as a result of the development.

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
Known or confirmed roost	Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above		The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement.
Category 1* Trees with multiple, highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. <i>A consultant ecologist is required</i>	Avoid disturbance to trees, where possible. Further dusk and pre-dawn survey to establish more accurately the presence, species, numbers of bats present and the type of roost, and to inform the requirements for mitigation if felling is required.	Felling would be undertaken taking reasonable avoidance measures' such as 'soft felling' to minimise the risk of harm to individual bats.
Category 1 Trees with definite bat potential, supporting fewer suitable features that category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats. <i>A consultant ecologist required</i>	Avoid disturbance to trees, where possible. More detailed, off the ground visual assessment. Further dusk and pre-dawn survey to establish the presence of bats, and if present, the species and numbers of bats and type of roost, to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above. Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.	None. <i>A consultant ecologist is unlikely to be required</i>	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.
Category 3 Trees with no potential to support bats	None. <i>A consultant ecologist is not required unless new evidence is found</i>	None.	No mitigation for bats required.

Figure 8 Tree risk categories from Hundt (2012).

6.7 Birds

6.7.1 There are 780 records of birds within 2km of the site (Figure 9).

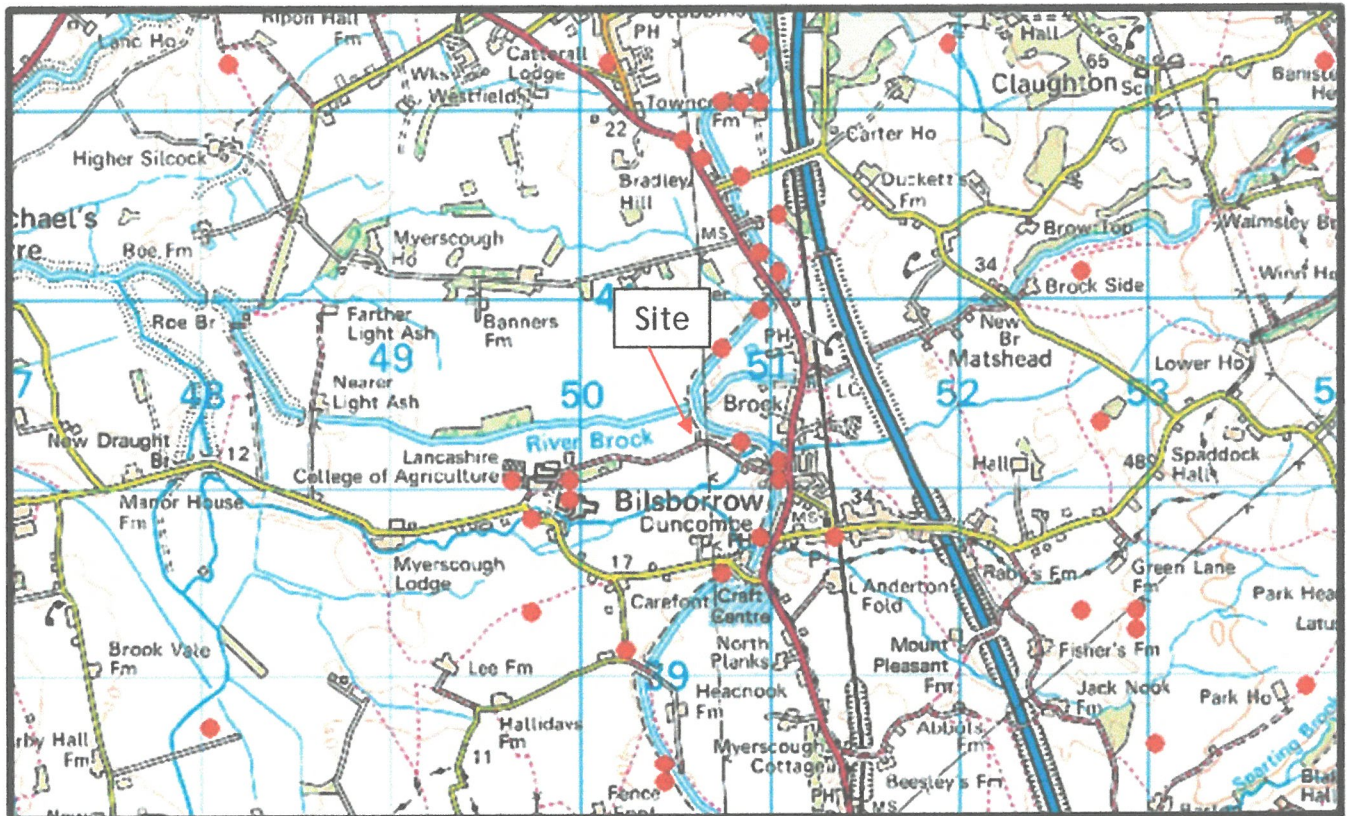


Figure 9 - Bird records shown in red

6.7.2 The intact hedgerows to the north and south of the site offer potential habitat for feeding and nesting birds given their height and density. Birds typical of residential gardens, urban and farmland fringes are therefore likely to frequent these areas of the site.

6.7.3 The modified grassland however possesses a low potential for use by nesting birds, as the grassland is grazed and therefore usually short. Trampling risks are also high within this area of the site.

6.7.4 There were no rot holes or cracks in the trees within the site boundary which would support tree hole dwelling species such as woodpeckers.

6.7.5 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.

6.7.6 Precautionary mitigation is considered appropriate.

6.8 Brown Hare

6.8.1 Brown hare are a UK BAP priority species. There are 24 records of Brown hares within 2km of the site (Figure 10).

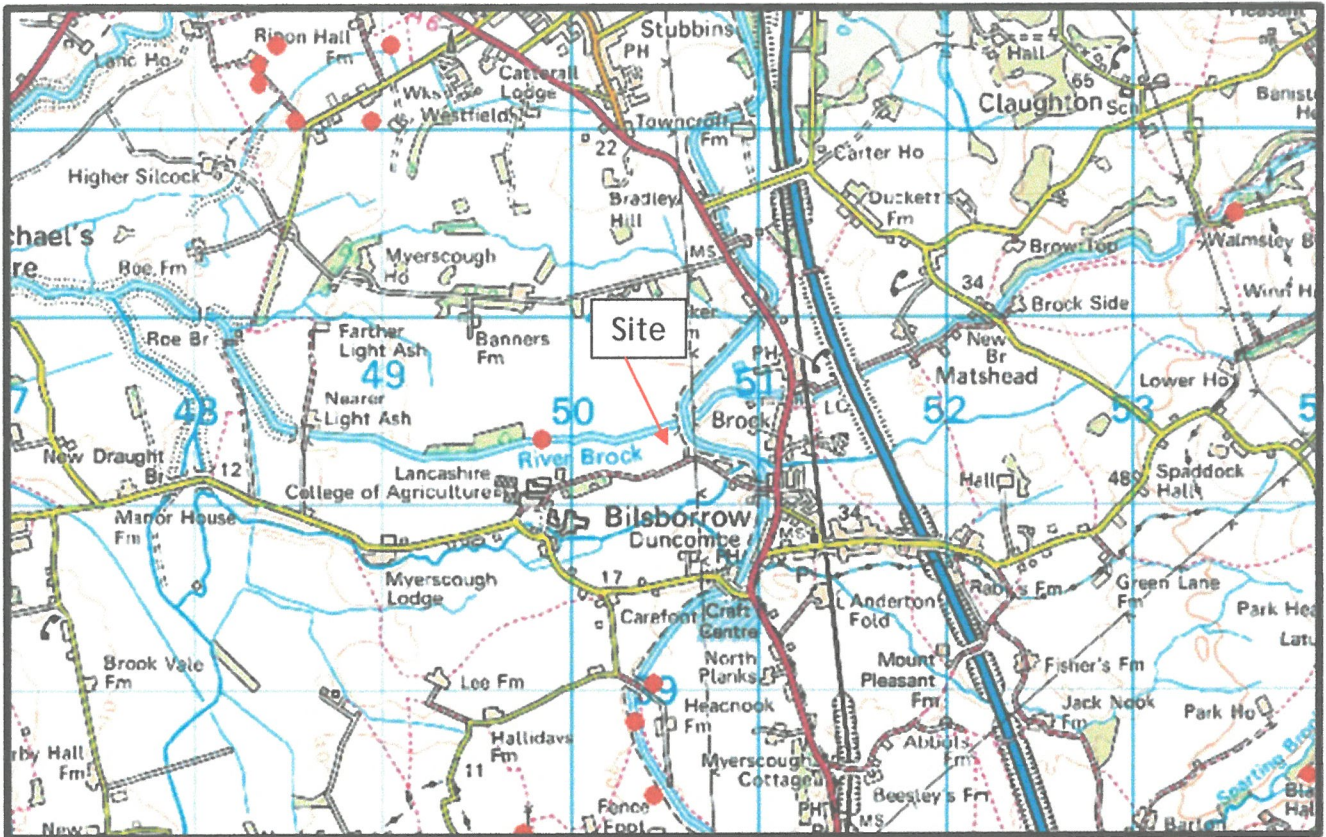


Figure 10 - Brown hare records shown in red

- 6.8.2 No indication of Brown hares was recorded on the site.
- 6.8.3 The site boundaries have some potential for Brown hares to create forms but use of the site is likely to be limited due to its open and exposed nature and regular human presence.
- 6.8.4 A risk assessment of the site in respect of its future potential for and value to Brown hares could be adequately made. We consider the risk to Brown hares is very low.

6.9 Invertebrates

- 6.9.1 Notable invertebrates have been recorded within 2km of the site.
- 6.9.2 Tall ruderal vegetation and scrub have some value to species such as common butterflies, but the cover of these habitats on site is limited.
- 6.9.3 Given the poor-quality, ubiquitous habitats contained within the site in comparison to the wider area, it is not considered that this site is of any local significance for invertebrates.
- 6.9.4 Whilst the habitat on site will undoubtedly support common invertebrate species, the significance of the site to invertebrates is likely to be limited in the local context. Impacts are therefore considered to be negligible. Mitigation can be incorporated into the design and landscaping scheme with the careful selection of plant species and substrates for the garden area.

6.10 Otter

6.10.1 There are no records for Otters within 2km of the site.

6.10.2 No indication of the presence or past use of the site by Otter was found.

6.10.3 Whilst the Lancaster Canal may provide a commuting/dispersal route through the local landscape, this species is considered as being absent from the site and is unlikely to be significantly impacted by site development.

6.10.4 Precautionary mitigation would be appropriate in respect of construction activities which will need to be restricted at night.

6.11 Reptiles

6.11.1 There are 12 records for Slow worms (*Anguis fragilis*) within 2km of the site (Figure 11). No other reptile species have been recorded in this area.

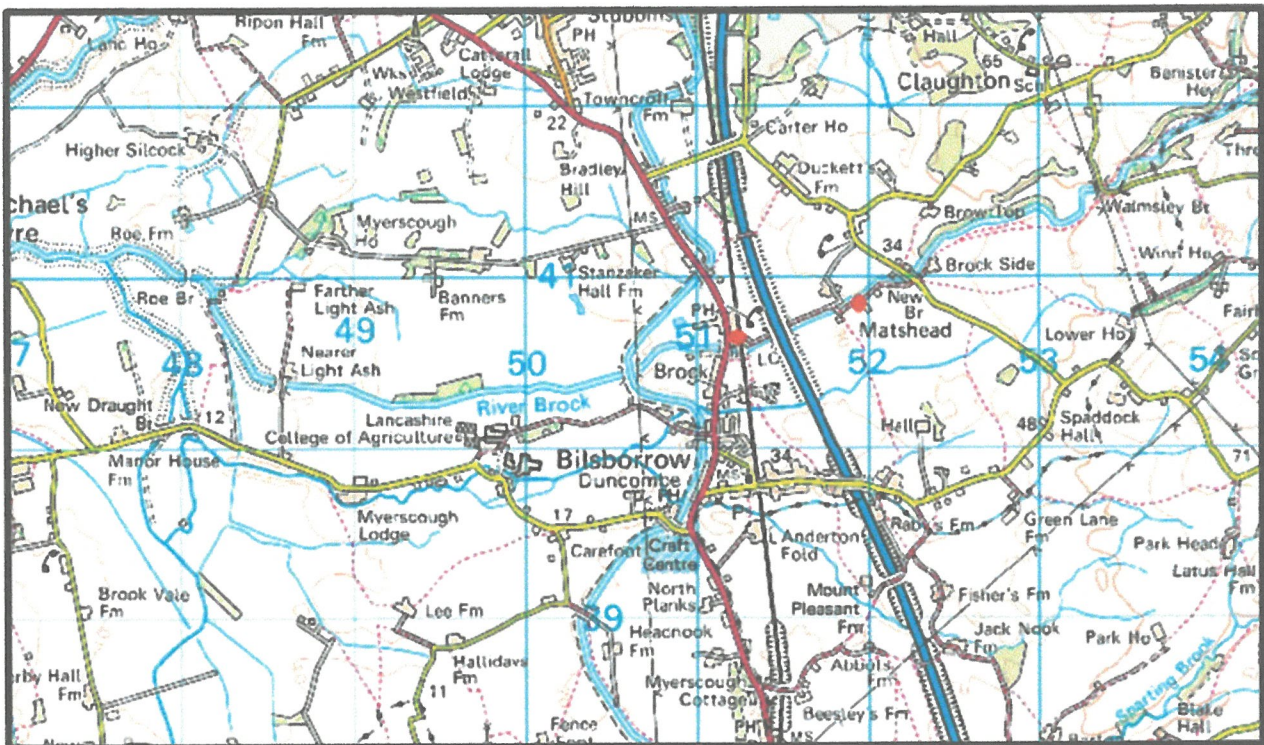


Figure 11 - Reptile records shown in red

6.11.2 No indication of reptiles was recorded at the site.

6.11.3 Slow worms will undoubtedly occur in the local area as there are records within 2km but they are unlikely to be using the site in significant numbers; the surrounding short grassland is unsuitable for these species.

6.11.4 As a consequence, precautionary mitigation would be appropriate in respect of construction activities so as to ensure reasonable avoidance measures are taken to avoid the killing or injury of these species.

6.12 Water vole

6.12.1 There are no records of Water voles within 2km of the site.

6.12.2 Habitats on site are not conducive for water voles given the absence of slow flowing water (e.g. , ponds, ditches, dykes) and lush marginal vegetation. Whilst the site is bound to the north by the Lancaster Canal, the proposed dwelling is to be set back from this feature such that no impacts will occur.

6.12.3 Resultingly, whilst water voles are not known to inhabit this watercourse, if this species were present it is considered unlikely they would be adversely affected by the proposal.

6.12.4 No specific mitigation is considered necessary.

6.13 Other

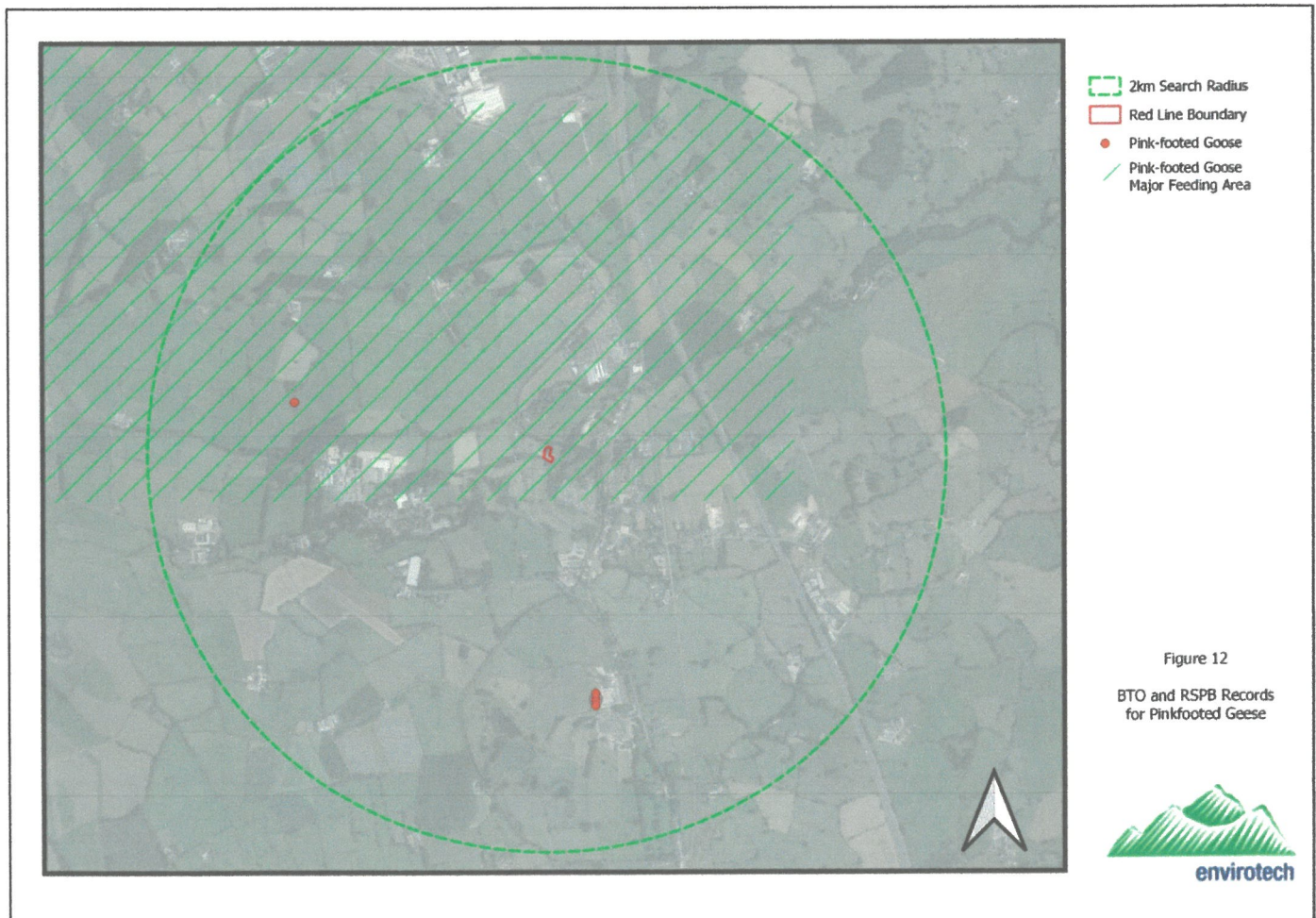
6.13.1 The site may be crossed by species such as fox (*Vulpes vulpes*) and rabbit (*Oryctolagus cuniculus*) are known to occur locally.

6.13.2 The boundary hedgerows likely provide suitable habitat for small mammals such as field vole (*Microtus agrestis*) hedgehog (*Erinaceus europaeus*).

6.14 Statutory and Non-Statutory Sites

Direct Impacts:

- 6.14.1 The site is located immediately adjacent the Lancaster Canal Biological Heritage Site (BHS). To this effect, precautionary mitigation should be adopted with respect to development of the site.
- 6.14.2 This should include the prevention of contaminants entering Lancaster Canal BHS, so as to ensure the integrity of this protected site is not adversely affected. Further measures will be discussed in Section 7 and will include retention of the boundary vegetation and the adoption of a sensitive lighting scheme, amongst other measures. Impacts on the Lancaster Canal BHS are likely to be negligible given the site is bound by a prominent hedgerow along its northern boundary. This hedgerow is a continuous feature located atop a bank, screening the site from this non-statutory protected area. The site is also contained within a slight depression, meaning the development will be well-contained within the site.
- 6.14.3 The site is located within a mapped feeding area for Pinkfooted Geese (*Anser brachyrhynchus*).
- 6.14.4 There are three records for Pinkfooted Geese within a 2km radius of the site, as identified using RSPB and BTO records. These records are located 1300m west and 1200m south of the site respectively (Figure 12).



- 6.14.5 Pinkfooted Geese are known to preferentially utilise open fields >6ha with open sightlines clear of prominent boundary features. These birds are easily disturbed and will naturally avoid grazing within 50m of small roads and 150m of settlements. This species typically feeds on sugar beet tops and spilled grain within stubble fields, although they will also feed on improved grassland near their night-time roost sites.
- 6.14.6 Given these factors, in addition to the site and wider field area being utilised for horse grazing, we consider the site is highly unlikely to be utilised for feeding Pinkfooted Geese.
- 6.14.7 There are no other statutory or non-statutory sites which are connected to the site such that site development would directly affect the dispersal of species between them or directly impact upon their integrity.

Indirect Impacts:

- 6.14.8 There are no statutory sites which are connected to the site such that site development would indirectly affect the dispersal of species between them or indirectly impact upon their integrity.
- 6.14.9 Indirect disturbance to non-statutory sites as a result of the development proposal is considered unlikely. The site already contains a small stable owned and operated by the planning applicant. The development proposal comprises the erection of a single dwelling only, which will not result in a marked increase in local population levels. Increased recreational use of the Lancaster Canal BHS is therefore highly unlikely to occur, being contained within existing background levels.

7. MITIGATION/RECOMMENDATIONS

7.1 *Compensatory planting and habitat enhancement*

- 7.1.1 Contaminants should not be allowed to enter the Lancaster Canal or soils on site during work. To effect this, spill kits should be provided on site. Re-fuelling of all plant and machinery should be undertaken away from open drains and water courses. Drip trays should be used under static machinery.
- 7.1.2 The roots of significant trees on the site and its boundaries should be adequately protected during work in accordance with industry standards. All trees should as far as possible be retained in the scheme.
- 7.1.3 All orchard trees are to be retained, although formalised within the proposed dwellings garden area.
- 7.1.4 Hedgerows around the site should be retained or improved where possible. Any lengths of intact hedgerow to be removed to facilitate development should be transplanted and or replanted in order that there is no net negative impact on this BAP habitat due to development. The roots of hedgerow plants/trees should be adequately protected during development from compaction/ground disturbance.
- 7.1.5 At this stage, it is proposed the line of Poplar trees bounding the site to the north-east are removed. These trees constitute tall, drawn-up specimens which have been poorly managed; no longer complimenting the surrounding landscape. **Whilst these trees are sited within the land ownership boundary of the bordering dwelling, it may be appropriate to plant a length of new hedgerow along this boundary, so as to help screen the development and maintain continuity of the site's boundary vegetation.**

7.2 *Amphibians*

- 7.2.1 There is no requirement for specific mitigation for these species. There are currently no suitable breeding sites on or near the site. However, as a precautionary measure, in the unlikely event that any signs of any amphibian activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.
- 7.2.2 In order to further minimise impacts on amphibians the following points should also be followed.
- All work must take place during daylight hours as amphibians are more likely to be commuting over night and this will ensure the risk to any amphibians commuting through the site will be minimised.
 - During the development, measures should be put in place to discourage amphibians from using the development area, the creation of any piles of earth, materials and rubble which could form potential artificial hibernacula and refuge should be avoided at all times. It is recommended that any spoil or rubble will be removed immediately

to skips, or on hard standing or short grass. This will ensure that no potential amphibian hibernation or resting sites are created.

- The storage of all loose materials must be palletised or similar so they are off the ground whenever possible.
- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure amphibians are not trapped during work.
- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

7.3 Badger

7.3.1 Badger setts are known to occur within 2km of the site. These setts will be undisturbed by work but in order to minimise impacts on badgers passing over the site the following points should also be followed.

- All work must take place during daylight hours as badgers are more likely to be commuting over the site at night and this will ensure the risk to any badgers passing through the site will be minimised.
- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure badgers are not trapped during work.
- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.
- Boundary fences/walls should incorporate gaps at their base to facilitate the passage of badgers across the site.

7.4 Bats

7.4.1 Work at night should be restricted, new planting within the site should enhance structural diversity and light spill onto the boundary should be minimised.

7.4.2 To this effect, a sensitive lighting scheme should be adopted for the site, as the long-term impact of unnecessarily bright or recurrent artificial lighting on both bats and their prey is rarely ever positive. We recommend the following: -

- All construction and security lighting will be limited to the areas where it is an absolute necessity for the purposes of health and safety.

- Passive infrared sensors could be used on security lighting, which is then activated for safety purposes only.
- All artificial lighting should of a low intensity and face downward. No artificial lighting should face the Lancaster Canal BHS.
- Consider the use of LED luminaires, which shine with a lower intensity and higher dimming capability.
- Utilise shades of warm white, which appear more yellow/orange in appearance, over cold white light. Cold white light contains a greater degree of blue/UV light, which attracts insects that cannot be preyed upon by bats, which are hypersensitive to these wavelengths of light.

7.4.3 New roosting provision for bats could be incorporated onto the site. This could include the erection of externally mounted bat boxes (Figure 13) on retained trees, or to the gable ends of the proposed dwelling. Bat boxes should ideally face a southern aspect (guaranteeing at least 8 hours of solar insolation a day), or if this is not possible an eastern or western elevation. Provisions for roosting bats could also be incorporated into the proposed dwelling. This could include the use of integrated bat boxes, bat bricks, bat tubes and bat access slates. Gaps (at least 20mm wide) could also be left beneath the ridgeline and eaves (over wall tops).



Figure 13- *Double crevice bat boxes could be erected on retained boundary trees or gable ends of the dwelling*

7.4.4 Overall, it is considered there is more than sufficient scope for mitigation and compensation at the site such that there will be no adverse impact on the favourable conservation status of bats affected by the proposal. The planting of new trees and scrub will undoubtedly improve the foraging potential of the site for use by bats.

7.5 Birds

- 7.5.1 Nesting by birds within the core development area is considered unlikely to occur. Birds are likely to nest within hedges and trees on the periphery of the site.
- 7.5.2 Any vegetation to be trimmed or cleared should be checked for nesting birds before it is removed. Ideally this should occur outside the bird nesting period March- September. If vegetation clearance is to occur in the March-September period a check for nesting birds should be conducted first by a suitably qualified individual.
- 7.5.3 New planting within the site and the retention of trees and shrubs on the site boundary will maintain the ecological functionality of the site for breeding birds.
- 7.5.4 Artificial bird nesting sites for swallow could be incorporated into the new buildings under the eaves in suitable locations.
- 7.5.5 If nesting birds are found at the site all site works shall cease and further ecological advice shall be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6 Brown Hares

- 7.6.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any brown hare activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.
- 7.6.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for badgers are also applicable to this species.

7.7 Invertebrates

- 7.7.1 Landscaping should include native or wildlife friendly plants only.
- 7.7.2 Loggeries and brash piles could be created along the peripheries of the site. Any cleared scrub or deadwood should be left on site.
- 7.7.3 Within the curtilage of the proposed dwelling, landscaping could include low-level planters with semi-evergreen perennial flowers such as Lavender and Mexican aster.
- 7.7.4 Insect hotels could be placed to the site edges. Hotels need to be maintained over time (being constructed of natural materials that gradually degrade). Nesting blocks needs to be replaced every two years to avoid buildup of unwanted pest insects such as mites or mold. Material should be secured firmly to prevent swaying and shaking in the wind. To this effect, it is often advantageous to use small diameter materials such as bamboo stems, twigs and drilled cross-sections of hardwood.

7.8 Otter

- 7.8.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any otter activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.
- 7.8.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for amphibians are also applicable to this species which is only likely to pass through the site at night.

7.9 Reptiles

- 7.9.1 There is no requirement for specific mitigation for these species. However, as a precautionary measure, in the unlikely event that any signs of any reptile activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.
- 7.9.2 Scrub and hedgerow habitat to the edges of the site should be retained, such that linkage points with surrounding habitat are maintained.
- 7.9.3 The points in respect of not leaving open trenches without means of escape detailed for badgers are also applicable to these species.

7.10 Water vole

- 7.10.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any Water vole activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.



Figure 14- Core development area of the site (approximate siting of the dwelling demarcated in orange).

8 REFERENCES

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

Collins, J. (ed) (2023) *Bat Surveys for Professional Ecologists: Good practice guidelines* (4th edn). The Bat Conservation Trust, London.

Collins, J. (ed) (2016) *Bat Surveys for Professional Ecologists: Good practice guidelines* (3rd edn). The Bat Conservation Trust, London.

Hundt, L. (2012) *Bat Surveys: Good Practice Guidelines* (Second Edition). BCT, London.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143-155.

Stace, C. (2019). *New Flora of the British Isles*. Cambridge University Press.

UKHab Ltd (2023). *UK Habitat Classification Version 2.0* (at <https://www.ukhab.org>)

9 APPENDIX

Feature		Hedge				ARCHAEOLOGY AND HISTORY						FEATURES										HEDGE CLASSIFIED AS IMPORTANT	
		Length 20m +	Hedge is not bounding the curtilage of dwelling	Hedge established more than 30years	Hedge boundary of protected or common land or land used for agriculture or forestry	Archaeological feature which is included in the schedule of monuments	Situated wholly or partly within an archaeological site	Boundary of a pre-1600 AD estate	Integral part of a field system	Protected species records	Bank or wall	Gaps less than 10%	Standard trees	Ditch	Parallel hedge	Footpath/ Bridleway	Connection points	Woody species	Average ground flora species				
2	Yes	Yes	Yes	Yes	Yes	No*	No*	No*	No*	No	No	Yes	Yes	No	No	Yes	2	Total (4) Surveyed 30m Sections (3)	3	No			
3	Yes	Yes	Yes	Yes	Yes	No*	No*	No*	No*	No	No	Yes	Yes	No	Yes	No	0	Total (8) Surveyed 30m Sections (5)	0	No			
No = Automatic failure						Yes = Automatic pass						7 woody species or 6 woody species + 3 features or 5 woody species + 4 features or highway + 4 woody species and 2 features											

* Historic and archaeological records have not been checked for this site.