



LAND AT PENDLE DRIVE ECOLOGICAL ASSESSMENT 2011

**(Report Ref: 2955.001)
September 2011
Version 4.0**

For

**Taylor Wimpey UK Ltd (Manchester)
1 Lumsdale Road
Stretford
Manchester
M32 0UT**

Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

T: 01925 844004
F: 01925 844002
E: tep@tep.uk.com
W: www.tep.uk.com



Written:	Checked:	Approved:
VG	EJS	EJS

CONTENTS**PAGE**

1.0	INTRODUCTION	1
2.0	SITE DESCRIPTION.....	1
3.0	METHODS.....	2
4.0	RESULTS	3
5.0	CONCLUSIONS & IMPLICATIONS.....	6
6.0	RECOMMENDATIONS.....	7
7.0	REFERENCES & FURTHER READING	9

APPENDICES

Appendix 1:	Desktop Study Information
Appendix 2:	Habitat Survey Form and Target Note Report
Appendix 3:	Pendle Drive Layout Plan
Appendix 4:	Examples of Habitat Enhancement Measures for Bats and Birds

DRAWINGS

G2955.001	Phase 1 Habitat Plan 2011
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1.0 INTRODUCTION

1.1 TEP was commissioned in June 2011 by Taylor Wimpey UK Ltd (Manchester) to carry out an ecological assessment of a site at Pendle Drive in Whalley. The assessment is required to inform proposals for a housing development on the site and this report has the following objectives:

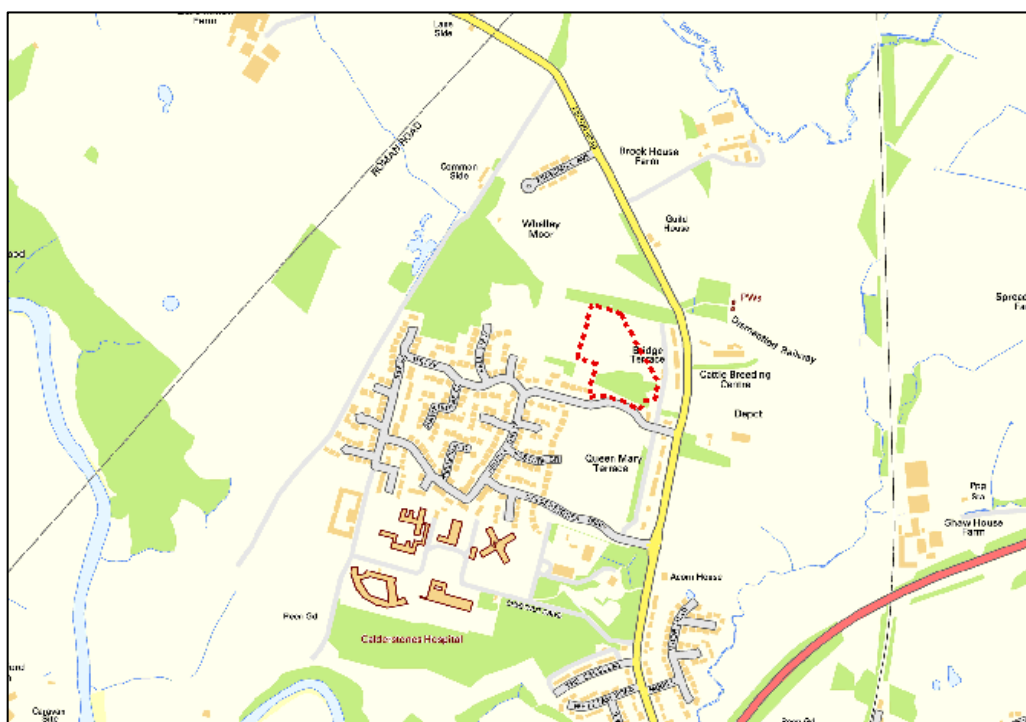
- to describe the existing vegetation and give an overview of the habitats present on the site;
- to identify whether there are any features of conservation value such as legally protected species or habitats of biodiversity importance;
- to advise of further surveys or mitigation requirements that might be needed prior to development of the site; and
- to outline opportunities to provide biodiversity enhancement within site proposals.

2.0 SITE DESCRIPTION

2.1 The Pendle Drive site is a parcel of land at the redeveloped Calderstones Hospital site. It lies north of Pendle Drive and west of Milton Road (B6246). The approximate central grid reference is SD 725 374.

2.2 The site has signs of previous development in the form of an area of hardstanding in the centre of the site. It also contains areas of unmanaged grassland and woodland. Residential properties lie to the east and southwest, amenity parkland to the south and agricultural land to the north. The survey area is shown in Figure 1.

Figure 1: Site location and surrounding landscape



- 2.3 The site is at the northern reach of the residential area of Whalley, Clitheroe. The wider landscape to the north and west is a mix of pastoral farmland with hedgerows and occasional areas of woodland. The river Ribble and two of its tributaries is present over 1km also to the west of the site. The site is linked to the wider landscape through a network of woodland strips and hedgerows.

3.0 METHODS

Desktop Study

- 3.1 Information regarding historic species records, protected sites, land allocation and relevant policies was requested and gathered from the sources listed in Table 1. The desktop study information is presented at Appendix A.

Table 1: Ecological information and consultations

CONSULTEE/SOURCE OF INFORMATION	NATURE OF INFORMATION
Google Maps	Satellite imagery
Natural England - Nature on the Map	National wildlife site designations and BAP habitats
Magic Map	National wildlife site designations and BAP habitats
Lancashire Environment Record Network (LERN)	Species records and local wildlife site designations
National Biodiversity Network	Species records
Ribble Valley Borough Council Local Plan (1998)	Wildlife Policies and protected species information

Habitats and Flora

- 3.2 The Phase 1 habitat survey for the land at Pendle Drive was carried out by ecologist Catherine Highfield on 13th June 2011. For full details of the survey, see Appendix 2. The survey was carried out in accordance with the Phase 1 assessment methods (JNCC 2003) and gives an overview of key habitats and wildlife corridors and any likely sites for species of conservation concern.

Fauna

- 3.3 During the Phase 1 survey, the habitats present were assessed for their potential to support species of conservation concern, particularly statutorily protected species or BAP priority species.

4.0 RESULTS

Desktop Study

Policies

4.1 The Local Development Framework (LDF) for the area has not been completed. The Ribble Valley Borough Council Local Plan (adopted 1998) shows the Pendle Drive site falls within Policy A3 *Calderstones Area Policy* but is outside the *Central Built Campus* zone. The disused railway line along the northern site boundary is allocated under policy ENV9. ENV9 is *Other Important Wildlife Sites*. Both policies have been saved in the emerging LDF Core Strategy.

4.2 Policy A3 relates to development of the Hospital site following closure in 2000. The following text of the policy have relevant to ecological issues:

The Borough Council will adopt the following principles in determining the acceptability of proposed after uses and other development proposals at the Calderstones Hospital site:

- *development should be limited to the existing central built campus, as identified on the Proposals Map;**
- *existing woodland areas should be retained and enhanced under sound tree management;*
- *no development should cause adverse impacts on the Biological Heritage Site, which runs east to west following the disused railway line;*

**Proposals outside the defined area will be subject to Policies G5 and ENV3.*

4.3 Policy ENV3 as referenced within Policy A3, states that:

The Council will ensure the protection and enhancement of those areas with an approach to conservation which gives a high priority to the protection and conservation of natural habitats and traditional landscape features. It will protect statutory designated areas and sites of biological interest and ancient woodland sites throughout open countryside areas. It will continue to improve the extent and quality of the tree cover and associated flora/fauna throughout the open countryside.

4.4 Policy ENV9 states that:

Development proposals within or adjacent to a County Biological Heritage Site or other site of local nature conservation importance identified on the proposals map will be permitted, provided the development would not significantly harm the features of interest which led to the identification of the site or other material factors outweigh the conservation interests of the site.

Site designations

4.5 The ENV9 area identified adjacent to the Pendle Drive site is *Calderstones Hospital Woodland/Railway Line Biological Heritage Site* (BHS). It is designated under category *Ar2 Artificial Habitats*. The site plan and citation is provided in Appendix 1 but no other information about the site is currently provided within the citation.

4.6 There are three additional Biological Heritage Sites within 1km of the Pendle Drive site (details can be found in Appendix 1 and are summarised below, including their location in relation to the Pendle Drive site:

- Mitton Wood BHS (woodland and flowering plants) – over 800m west.
- Barrow Brook Field BHS (grassland habitats) – over 650m northeast.
- Hard Hill Common BHS (swamp and fen habitats) – over 450m north.

4.7 There are no national or international wildlife sites within 1km of the Pendle Drive site.

Protected species

4.8 There are no records for protected species, UK Biodiversity Action Plan (BAP) priority species or Local BAP species within or adjacent to the Pendle Drive site.

4.9 There are records of protected and BAP species within 1km of the site (full details given in Appendix 1). There is a record for soprano pipistrelle (*Pipistrellus pygmaeus*) listed on the Conservation of Habitats and Species Regulations (2010) and the Wildlife and Countryside Act (1981 *as amended*). This is a record from 2010 of up to five bats in flight approximately 250m south of the site.

4.10 Ribble Valley Borough Council countryside officer, David Hewitt, informed TEP of a badger (*Meles meles*) sett within the wider landscape west of the site.

4.11 The UKBAP species common toad (*Bufo bufo*) and birds listed on the Birds of Conservation Concern list (lapwing, linnet, sand martin, snipe and swallow) have also been recorded in the wider area.

4.12 Anecdotal evidence (comments made by a member of the public to Taylor Wimpey) indicates deer (species unknown) use the woodland habitat in the south of the site.

Habitat Survey

4.13 Detailed findings of the habitat survey are presented at Appendix 2 and a habitat map of the site is presented in Drawing G2955.001.

4.14 The site is dominated in the south by semi-natural broad-leaved woodland. The north of the site is dominated by modified neutral grassland with an area of hardstanding in the centre of the site. Patches of tall ruderal herb and scrub are also found on site. A native double hedgerow forms the eastern boundary.

4.15 The broad-leaved woodland contains some mature oaks (*Quercus robur*) and although there is evidence of tree planting along the southern boundary with Pendle Drive, the habitat overall is considered semi-natural. Broad-leaved and mixed woodland is a Local (Lancashire) BAP habitat.

4.16 The native double hedgerow is not species-rich, nor does it have a particularly diverse ground flora. However it still qualifies as a UKBAP priority habitat and functions as a local wildlife link, connecting the woodland within the site to the BHS in the north.

- 4.17 Overall the site has a reasonable mix of habitats that are suitable to support a range of species, particularly birds and small mammals. The semi-natural broad-leaved woodland, hedge, scrub and trees provide habitats of the highest ecological value on site.
- 4.18 No protected plant species were observed during the habitat survey.
- 4.19 Invasive plant species rhododendron (*Rhododendron ponticum*) and Himalayan balsam (*Impatiens glandulifera*) were identified.

Fauna

- 4.20 No signs of protected species were noted during the site visit. However, the habitats on site do have potential to support protected species.
- 4.21 There is a record for soprano pipistrelle 250m southwest of the site. The site offers potential foraging and commuting habitat for bats and some of the mature trees within the woodland habitat may offer potential roosting habitat.
- 4.22 There are records for Birds of Conservation Concern (linnet, lapwing, snipe, swallow and sand martin) within the local area. The site offers limited foraging potential and nesting habitat for lapwing and snipe. The areas of unmanaged grassland offer potential foraging (but not breeding) habitat for swallow and sand martin. The ephemeral /short perennial vegetation and rough grassland on site offers potential foraging habitat for linnet and the hedgerow and woodland habitat also offers potential nesting habitat for linnet.
- 4.23 This mix of habitats including the areas of modified neutral grassland and the adjacent pastoral fields provide potential habitat for badger. No evidence of badger activity (i.e. latrines or setts) was noted within the Pendle Drive site during the Phase 1 habitat survey. There is, however, a record of a badger sett in the wider landscape.
- 4.24 In the wider area there are historical records for UKBAP Priority species common toad and Lancashire BAP provisional long list species *Ilybius guttiger* (water beetle), common frog and horsetail hybrid (*Equisetum x font-queri*) within 1km of the site. There is no breeding habitat (standing water) for common toad or *Ilybius guttiger* within the site or within 250m of the site. The record for horsetail hybrid is 850m north of the site and it was not recorded on site during the Phase 1 habitat survey.
- 4.25 The mosaic of unmanaged grassland, woodland, scrub and bare ground on site offers potential habitat for reptiles. However, there are no historic records for reptiles within 1km of the site (including several BHS designations), the site is on the edge of developed areas both existing and under construction to the east, south and west.
- 4.26 There are no waterbodies on site or within 250m and there are no historic records of great crested newt within 1km of the site.
- 4.27 There are no watercourses within or adjacent to the site and there are no historical records of otter and water vole within 1km of the site.

5.0 CONCLUSIONS & IMPLICATIONS

- 5.1 There are no internationally or nationally important wildlife sites within the influence of the development proposals. However, there is a Lancashire Biological Heritage Site running along the north boundary of the site. The current site proposals (Drwg ref 10/094/Sk.02, Appendix 3) show residential gardens backing onto this BHS site. Therefore it should be possible to ensure the site is not degraded by the proposals. Further more the plans show provision of access to public open space (POS) to the northeast of the site and this should help alleviate increased recreational pressures on the BHS. However, it will be important to protect the habitats of the BHS from works encroachment during the construction period.
- 5.2 Current planning policies (ENV9, A3 and ENV3) require that planning developments do not significantly harm the features of interest of the BHS and that woodland areas should be retained and enhanced. The current proposals show the retention in the main of the woodland area on site and do not encroach on the BHS. There will be some loss of trees along the edge of the woodland to facilitate the proposals, perhaps most importantly where it links to the hedgerow in the southeast, but there is no overriding reason why the quality of the habitat could not be maintained (and replacement connection provided within the southeast) within the current broad proposals.
- 5.3 The double hedgerow is a UKBAP habitat and acts as a wildlife corridor linking the woodland to the BHS. This hedgerow is to be lost as part of the development. It is proposed that the hedgerow is reinstated to the east of its current location. This replacement should ideally be a double hedgerow to avoid loss of biodiversity and ideally include at least five native woody species (suitable species are listed in the recommendations section). If there is not enough space within the proposals to provide a double hedgerow, then planting a hedgerow along the west site boundary (in addition to a single hedgerow in the east) could be an alternative. The absence of hard landscaping and likely absence of street lighting immediately adjacent to the hedge with help to maintain its function as a green link once the new hedge has established. Although there will be a temporary (medium-term) loss of quality and function.
- 5.4 With regards to the Conservation of Habitats and Species Regulations (2010), as no species, habitats or sites covered by the regulations have been identified on or immediately adjacent to the Pendle Drive site. An assessment of the site under these regulations is not required.
- 5.5 The current proposals have some potential to impact on bats species. Consideration of the lighting scheme is required to minimise impacts on bat foraging and commuting and a further assessment of trees for bat roosting will be required once tree removal plans have been drawn-up.
- 5.6 There is a badger sett over 200m west of the development site, development of the site will not have direct impacts on the sett and connectivity with the wider countryside will be maintained. The current proposals will result in the loss of some potential foraging habitat (grassland) for badger, however, the woodland

habitat in the south of the development site will be retained, as will green links around the site boundaries. Furthermore, the agricultural land to the north provides opportunities for foraging.

- 5.7 The site provides some opportunities for birds. With the retention of the woodland and hedge habitats and the creation of private gardens, the site will continue to provide habitats for a range of birds to nest and forage. However, all nesting birds are protected under the *Wildlife and Countryside Act 1981* (as amended). There is no provision under the licensing system for disturbance or destruction of nests to facilitate development, so there are potential implications for the timing of vegetation clearance works with regard to nesting birds.
- 5.8 Anecdotal evidence suggests deer have used the woodland habitat on site. Legislation relating to deer species is primarily concerned with regulating the hunting season and is therefore not directly relevant to these development proposals. Furthermore, deer are mobile animals and generally occupy a large home range. The area of woodland within the site would only form a small part of their overall range.
- 5.9 Reptiles utilise a variety of habitats and can be difficult to confidently rule out through a habitat assessment. The local authority may require that a reptile survey is undertaken prior to granting permission on this site. However, there are no records for reptiles in the wider area.
- 5.10 The invasive Schedule 9 (Wildlife and Countryside Act) listed plant Himalayan balsam occurs occasionally amongst the groundflora of the woodland habitat in the south of the site. It is also present within the double hedgerow in the northeast of the site. Rhododendron (also an invasive Schedule 9 species) occurs occasionally amongst the understory of the woodland habitat. An offence may be committed if Schedule 9 species are allowed to spread.

6.0 RECOMMENDATIONS

- 6.1 The northern boundary of the site should be designed to create a buffer between the development and the BHS. As private gardens will back onto the BHS, this could easily be achieved through the installation of a fence and the planting of a native hedge.
- 6.2 It is important to ensure the green link created by the double hedgerow is maintained. Due to a small loss of woodland in the southeast a new hedge should be planted along the boundary to reconnect the woodland to the hedge. There are also proposals to create gaps in the hedge to allow foot access to the POS, as these will be relatively small gaps, they can be more than compensated for by gap-planted the hedgerow in the south which is currently classed as defunct under the Phase 1 habitat criteria.
- 6.3 There are two areas where the road network comes close to the hedgerow, lighting in these areas should be designed to avoid light spilling onto the hedge, either by keeping lighting away from the area or using low bollards lights or

similar (or a combination of both). The road network also runs along the edge of the woodland near the access of Pendle Drive and on the northeast edge of the woodland. In both areas the lighting scheme should avoid light spill onto the tree canopies.

- 6.4 A bat assessment of any trees likely to require removal or significant pruning should be undertaken prior to finalisation of proposals.
- 6.5 The woodland, hedge, scrub and scattered trees on site offer potential nesting habitat for many species of bird. As any UK nesting birds and their nests are protected, removal or pruning of trees and scrub will have to be completed outside the nesting bird season (March – August inclusive). If this is not possible an inspection of the trees/scrub prior to removal by an ecologist will be required.
- 6.6 Although the habitats containing the Schedule 9 invasive species are largely remaining unaffected by development, consideration should be given to producing a management plan for the control of these species, with the aim of enhancing the site for native wildlife. The removal of rhododendron from the woodland could allow opportunities for planting understory species such as hawthorn, elder and holly.
- 6.7 Enhancement of the site's biodiversity could be achieved through a number of measures. For example, planting a native hedgerow along the west site boundary would provide an additional green link across the site and increase nesting opportunities for birds and foraging opportunities for badgers. New hedges should include at least five native woody species, ideally with a good mix of berry/nut producing species, thus providing a good food source for badgers (suitable species include - hawthorn, blackthorn, elder, English oak, hazel, guelder rose, dog rose). Allowing the edges of the retained woodland to develop a tall grass sward through a reduced mowing regime would also increase the value of the site for wildlife and plug-planting in these areas could introduce further native botanical interest.
- 6.8 Compensation for tree loss could be provided through planting trees in gardens or along the roads and providing specimen trees within the replacement hedgerow planting.
- 6.9 The use of fragrant flowering shrub and perennial species within the site landscaping would further improve the quality of the site for invertebrates, birds and bats.
- 6.10 Additional opportunities for bats could be provided through the installation of bat roost units within the new buildings and/or on suitable trees. Examples are presented at Appendix 4.
- 6.11 Additional opportunities for birds could be provided through the use of bird boxes within the new buildings and/or on suitable trees. Examples of bird box designs are presented at Appendix 4.

7.0 REFERENCES & FURTHER READING

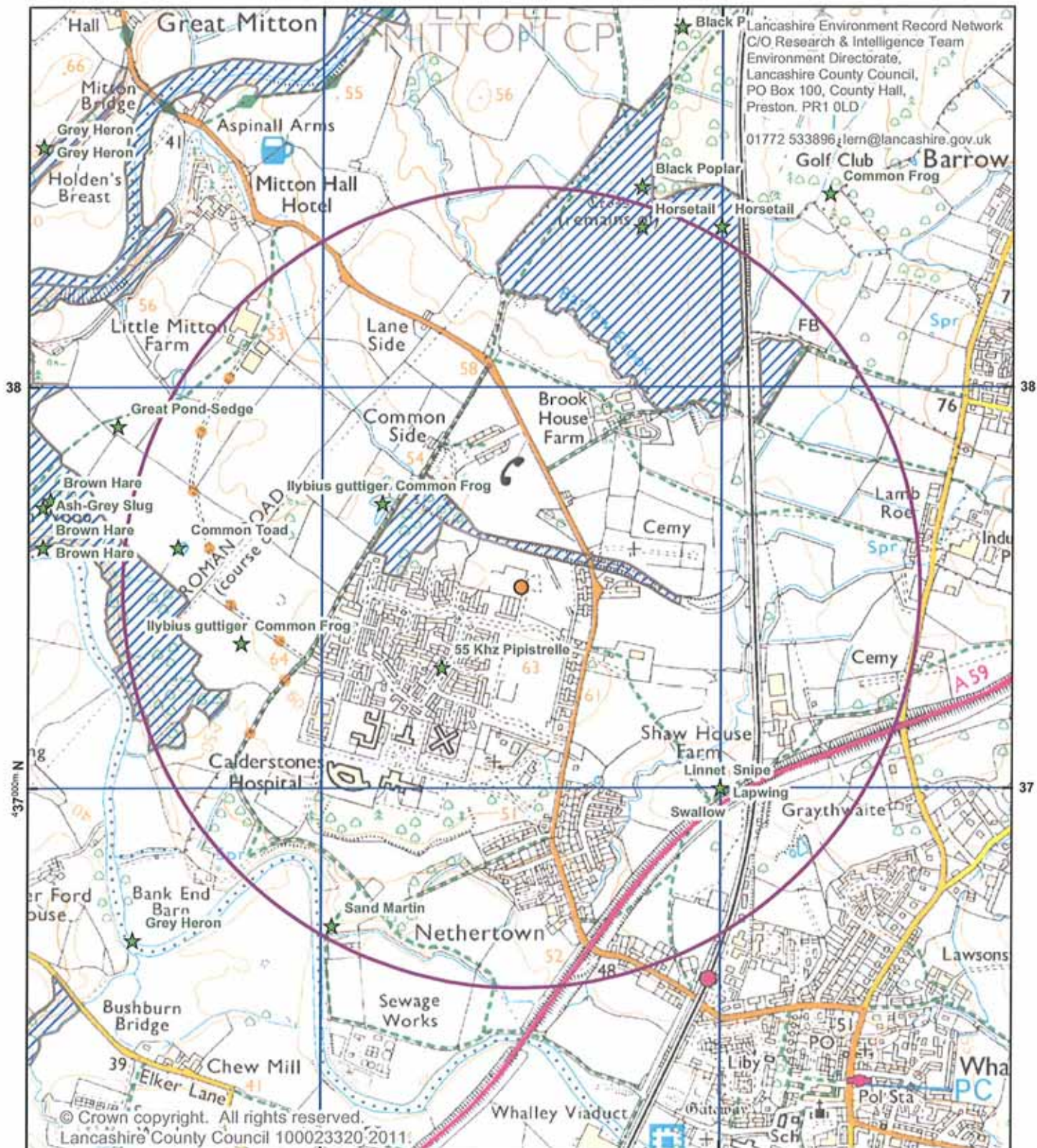
JOINT NATURE CONSERVATION COMMITTEE (2003) Phase 1 Habitat Survey. JNCC. Peterborough

OFFICE OF THE DEPUTY PRIME MINISTER (2005) 'Planning Policy Statement 9: Geological and Biological Conservation' HMSO, Norwich

OFFICE OF THE DEPUTY PRIME MINISTER (2005) 'Government Circular: Geological and Biological Conservation – Statutory obligations and their implications within the planning system' ODPM circular 06/2005, DEFRA circular 01/2005

STACE, C. A. (2010) Flora of the British Isles, 3rd ed. Cambridge University Press

PPENDIX 1: Desktop Study Information



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

Golf Club Common Frog

Black Poplar

Horsetail

Horsetail

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-  Whalley
-  Whalley 1km Buffer
-  Lancashire BAP Provisional Long List
-  Biological Heritage Sites



1:12,500 Date: 06/07/2011

LERN

Lancashire County Heritage Sites

Biological Heritage Site

Calderstones Hospital Woodland/Railway Line



Site Boundary

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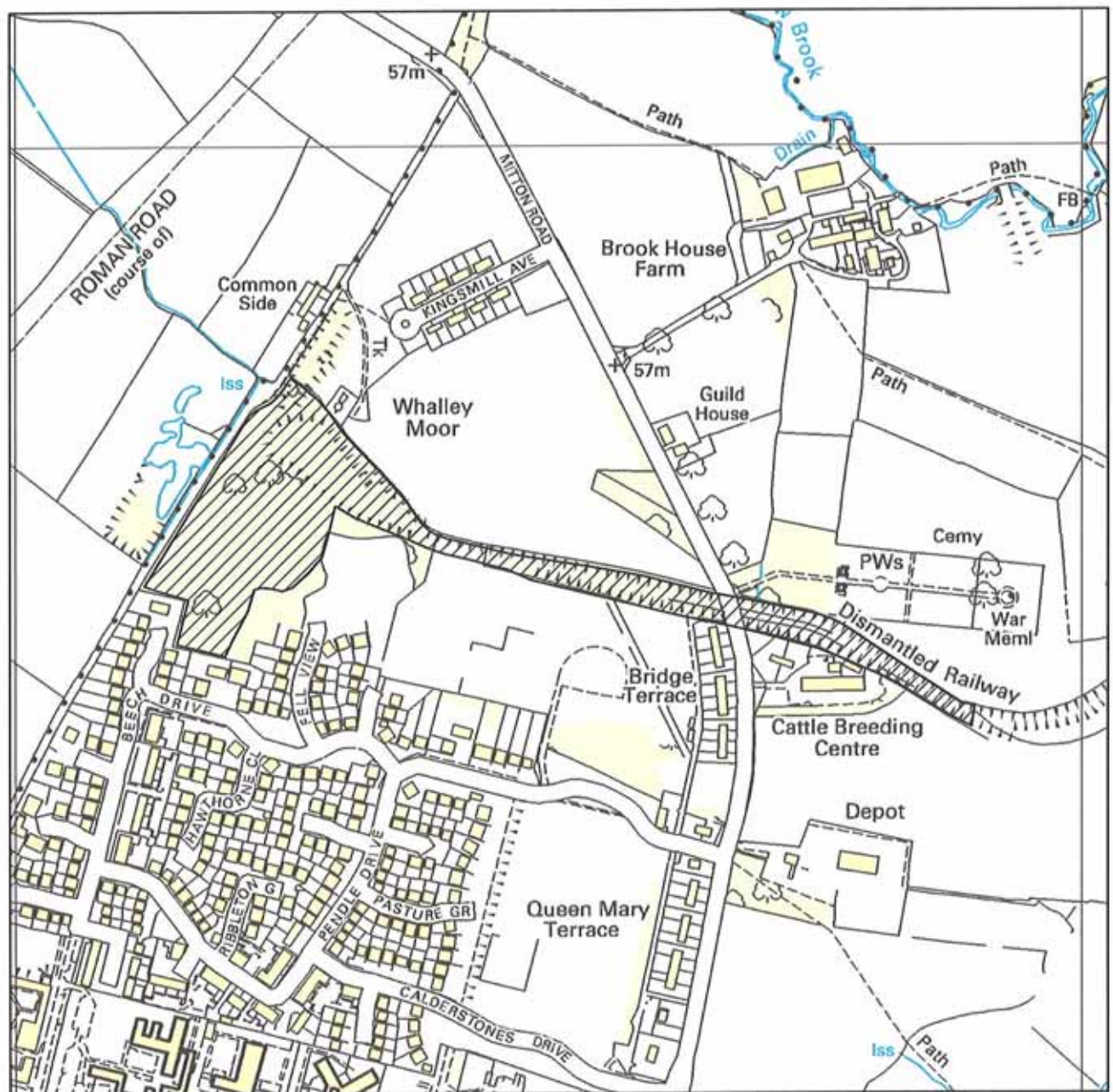
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Ref No. 73NW09

Biological Heritage Sites Partnership

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Grid ref. SD725376

Scale 1:5,540

Site approved

Map 1 of 1

Boundary revised

Date of Map 06/07/11



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Lancashire County Heritage Sites

Biological Heritage Site

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Site Name: Calderstones Hospital Woodland/Railway Line

Site Ref: 73NW09

Approved:

Area (ha): 4.25

Date written/last updated:

Grid Ref: SD722376

Owner/Occupier:

Districts:

Ribble Valley

Parishes:

Whalley

Description:

To be completed.

Guideline(s) for Site Selection:

Artificial Habitats

(Ar2)

Other Information/Comments:

Lancashire County Heritage Sites

Biological Heritage Site

Barrow Brook Field



Site Boundary

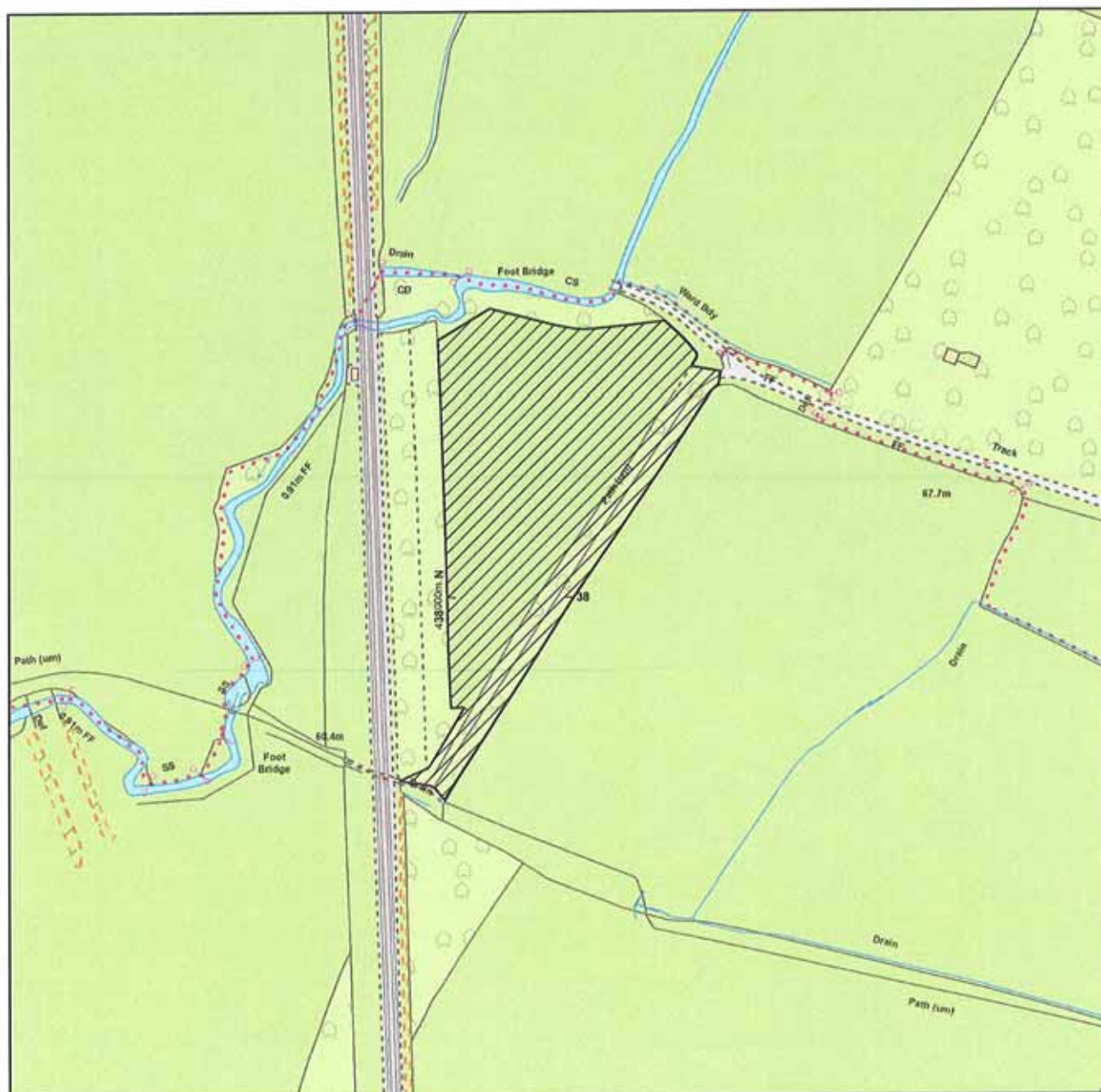
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Grid ref. SD731380

Site approved

Boundary revised

Scale 1:2,520

Map 1 of 1

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Biological Heritage Site

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Site Name: Barrow Brook Field

Site Ref: 73NW17

Approved: 01 January 2006

Area (ha): 1.31

Date written/last updated: 01 May 2006

Grid Ref: SD731380

Owner/Occupier: Private

Districts:

Ribble Valley

Parishes:

Whalley

Description:

The site is located approximately 500 metres to the west of Barrow near Whalley and comprises a triangular field south of Barrow Brook and alongside the railway. It supports damp, species-rich, semi-natural, neutral grassland referable to the MG4 *Alopecurus pratensis*-*Sanguisorba officinalis* grassland of the National Vegetation Classification.

Grassland species comprise Meadow Foxtail, Sweet Vernal-grass, Marsh Foxtail, Creeping Bent, Tufted Hair-grass, Great Burnet, Brown Sedge, Hairy Sedge, Common Knapweed, Common Sorrel, Pignut, Meadow Vetchling, Greater Bird's-foot-trefoil, Cuckooflower, Bog Stitchwort, Selfheal, Silverweed, Amphibious Bistort, Common Spotted-orchid, Meadow Buttercup, Creeping Buttercup, Marsh Thistle, Jointed Rush, Hard Rush, Soft-rush and Compact Rush.

A belt of trees on a raised bank along the eastern boundary of the site supports Oak, Beech and Alder with Common Nettle, Lesser Celendine, Wood Dock, Hogweed, Broad Buckler-fern and Remote Sedge.

Guideline(s) for Site Selection:

Grassland

(Gr1)

Other Information/Comments:

Lowland Hay Meadow is a priority habitat in the UK Biodiversity Action Plan.

Lancashire County Heritage Sites

Biological Heritage Site

Hard Hill Common



Site Boundary

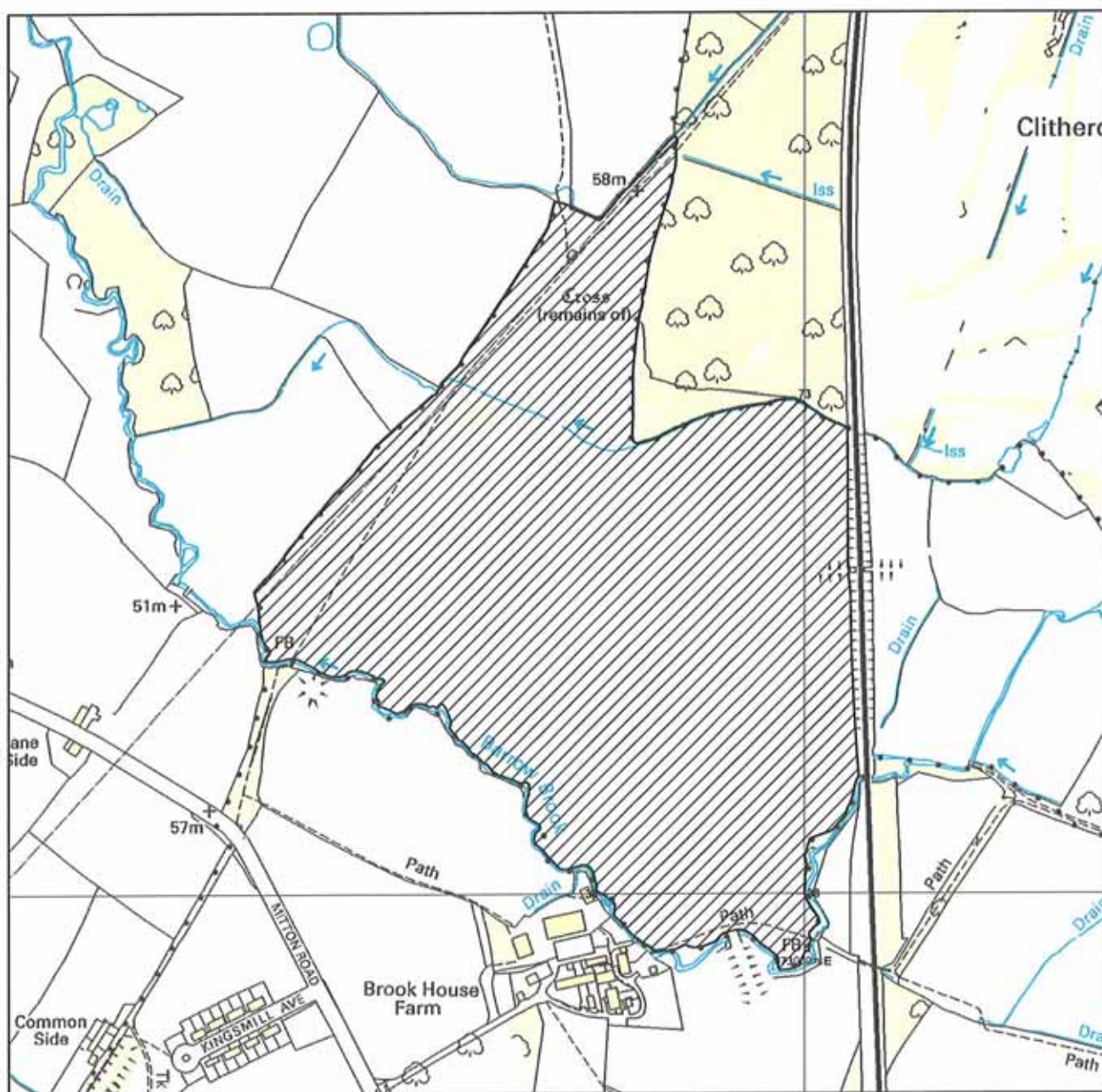
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Grid ref. SD727383

Site approved

Boundary revised

Scale 1:6,050

Map 1 of 1

Date of Map 06/07/11



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Lancashire County Heritage Sites

Biological Heritage Site

Biological Heritage Sites Partnership:

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Site Name: Hard Hill Common

Site Ref: 73NW18

Approved: 17 October 2007

Area (ha): 27.17

Date written/last updated: 18 April 2008

Grid Ref: SD727383

Owner/Occupier: Private

Districts:

Ribble Valley

Parishes:

Wiswell

Description:

The site lies between Whalley and Mitton. The site's southern boundary is defined by Barrow Brook, with the Blackburn to Skipton railway line creating something of an artificial boundary to the east. The site was formerly common land and much wetter; however, shortly after the Second World War it was used to demonstrate drainage for agricultural improvement.

Despite this history the site retains features of its former nature in terms of small-localised areas of Purple Moor-grass/Rush Pasture and diverse flushed habitats adjacent to the stream crossing the field towards the north.

The vegetation over the greater part of the field comprises Soft Rush, Hard Rush, Acute-flowered Rush, Tufted Hair-grass, Meadow Foxtail, Marsh Foxtail, Crested Dog's-tail, Sweet Vernal-grass, Common Bent, Creeping Bent, Red Fescue, Hairy Sedge, Oval Sedge, Common Sedge, Marsh Thistle, Creeping Buttercup and Marsh Horsetail. In places Purple Moor-grass and Reed Canary-grass becomes locally abundant. Where the ground is damper Brown Sedge, Meadowsweet, Common Valerian, Greater Bird's-foot-trefoil, Ragged-Robin, Common Marsh-bedstraw and Broad Buckler-fern occur. In addition a field pond supports Yellow Iris, Floating Sweet-grass and Bogbean.

On the sloping ground above the northern stream are a series of flushes. These support Glaucous and Carnation Sedge, Selfheal, Bog Stitchwort, Water Mint, Meadowsweet, Hemp-agrimony, Lesser Spearwort, Lesser Stitchwort, Devils'-bit Scabious, Bog Pondweed, Marsh Valerian and Skye Horsetail.

Alongside Barrow Brook there is a woodland flora with Ash, Alder, Large Bitter-cress, Primrose, Dog's Mercury, Ramsons, Moschatel and Opposite-leaved Golden-saxifrage.

Guideline(s) for Site Selection:

Swamp and Fen (Fe1)

Other Information/Comments:

Purple Moor Grass and Rush Pastures is a priority habitat in the UK Biodiversity Action Plan.

Lancashire County Heritage Sites

Biological Heritage Site

Miton Wood



Site Boundary

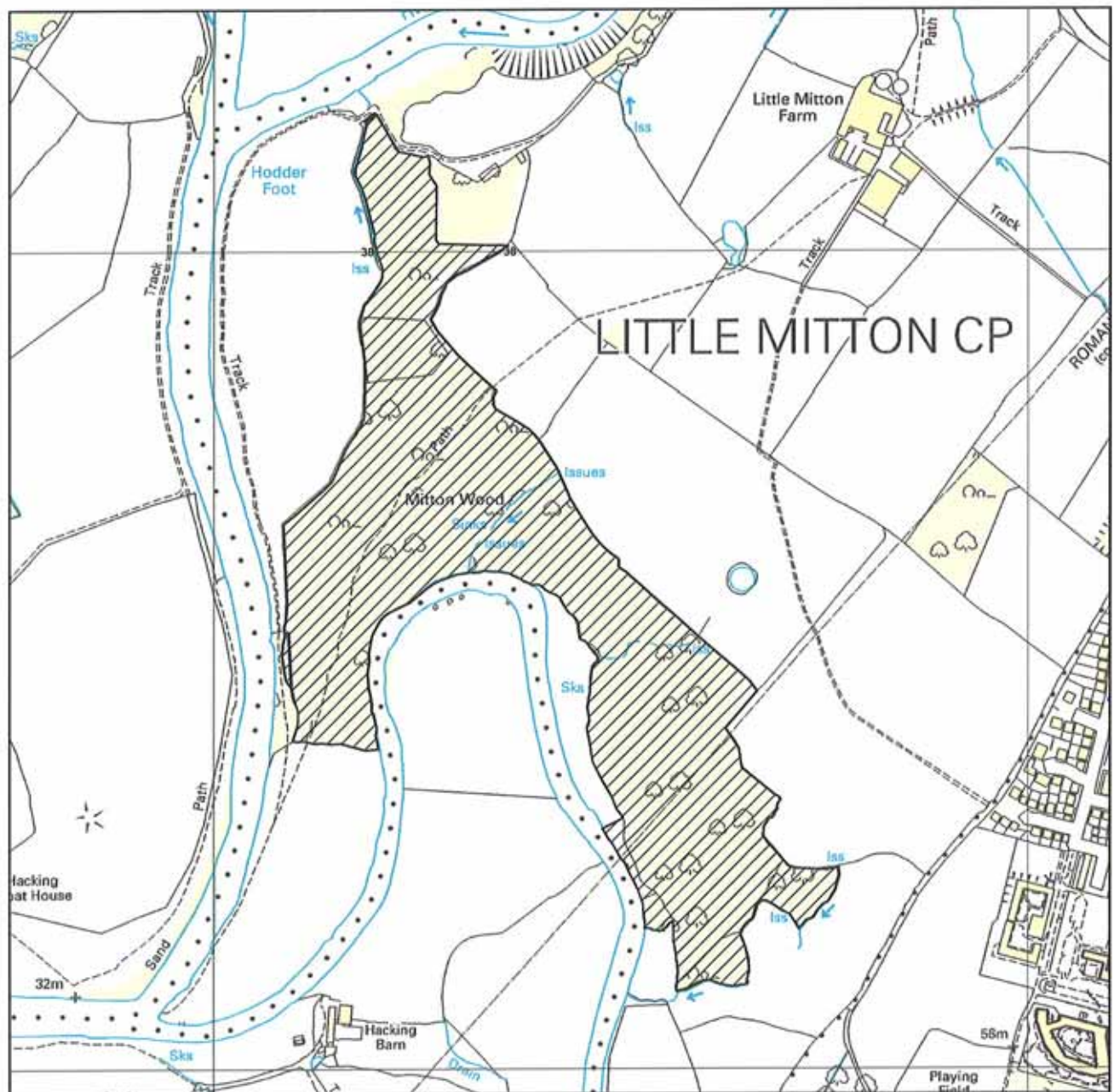
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This map shows only the boundary of the Biological Heritage Site named above. It does not show any other designated sites which may occur within the area covered by the map.

Ref No. 73NW05

Biological Heritage Sites Partnership

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Grid ref. SD714376

Scale 1:7,270

Site approved

Map 1 of 1

Boundary revised

Date of Map 06/07/11



Lancashire
County Council





Lancashire County Heritage Sites

Biological Heritage Site

**Biological Heritage Sites
Partnership:**

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Natural England

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Site Name: Mitton Wood

Site Ref: 73NW05

Approved: 01 September 1993

Area (ha): 20.69

Date written/last updated: 01 April 2001

Grid Ref: SD713377

Owner/Occupier: Private

Districts:

Ribble Valley

Parishes:

Little Mitton

Description:

The site comprises a large, semi-natural woodland situated approximately 1.5 km south of Great Mitton at the confluence of the river Calder with the river Ribble. It is listed in the *Lancashire Inventory of Ancient Woodland (Provisional)*, (English Nature, 1994).

The canopy is dominated by ash, oak, wych elm, sycamore, alder and birch in varying proportions. There is a varied understorey of hazel, hawthorn, holly, rowan, elder, blackthorn and bird cherry together with regenerating tree species.

The ground flora is rich and diverse. Species present include bluebell, ramsons, dog's mercury, wood anemone, woodruff, sanicle, moschatel, primrose, early-purple orchid, wood avens, wood stitchwort, honeysuckle, bramble, lesser celandine, alternate and opposite-leaved golden-saxifrage, water avens, hemlock water-dropwort, wood-sedge, pendulous sedge, broad buckler-fern and male-fern.

Yellow star-of-Bethlehem (*Gagea lutea*), a plant categorised as 'endangered' in the *Provisional Lancashire Red Data List of Vascular Plants*, occurs in the wood.

An uncommon mollusc, the ash-grey slug (*Limax cinereonige*), has also been recorded here.

There is a small area of species-rich neutral grassland on the banks of the river Calder around SD 715372. Species present include lady's mantle, wood anemone, meadowsweet, common bird's-foot-trefoil, field

Guideline(s) for Site Selection:

Woodland and Scrub (Wd1)

Flowering Plants and Ferns (Ff3)

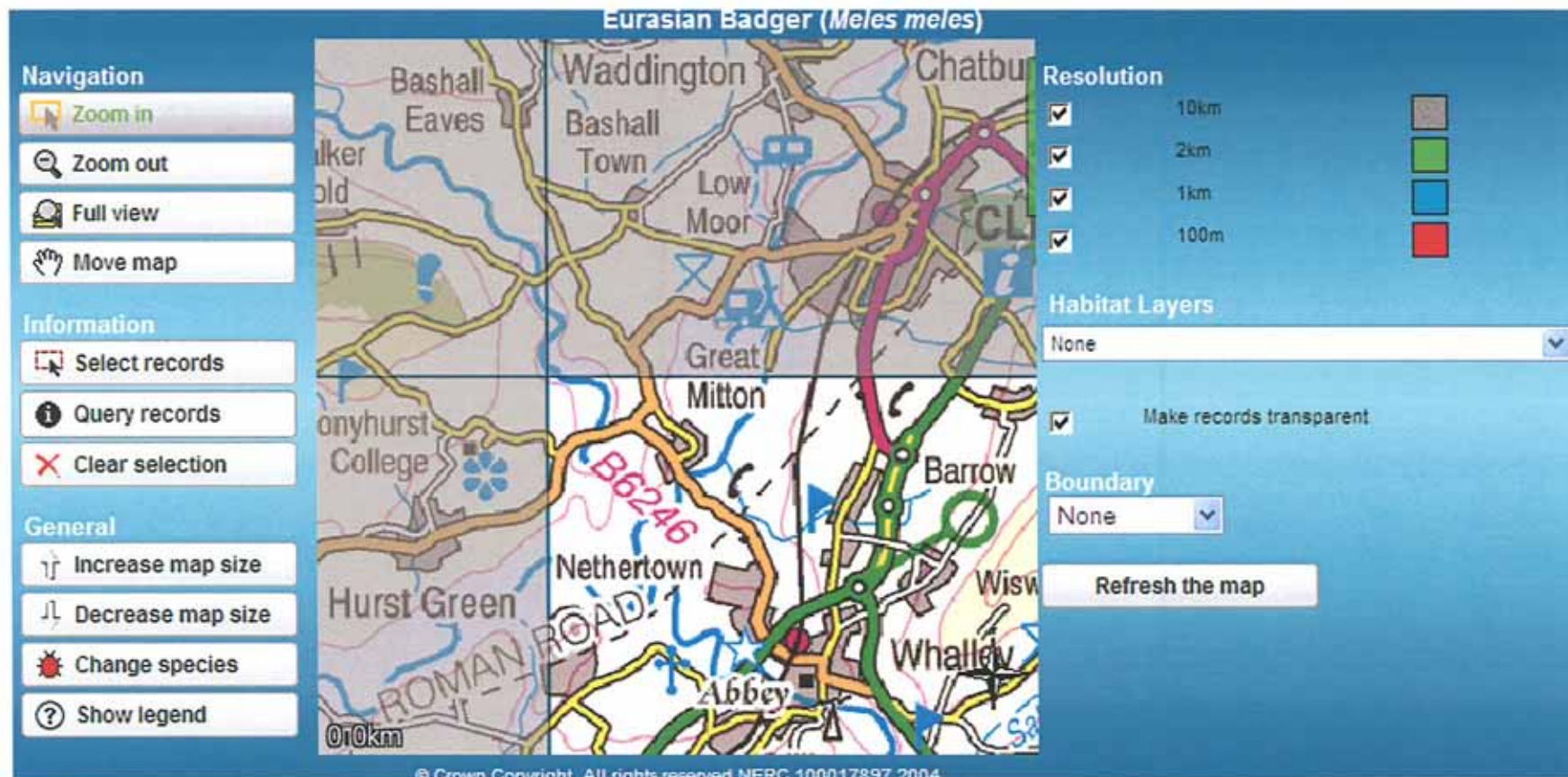
Molluscs (Mo4)?

Other Information/Comments:

The site adjoins the River Ribble Biological Heritage Site (BHS LSRRI) and Mitton Hall Wood Biological Heritage Site (BHS 73NW08).

The site boundary was slightly modified in 01/01.









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**Sites of Special Scientific
Interest (SSSI)**

International Sites

Biodiversity Action Plan
Priority Habitats

Geological Sites Map

Targeting and Planning Map

Agri-environment Delivery
on SSSIs



Overview map



Key

★ Natural England
Offices

SSSI Live
Management
Agreements

SSSI Unit:
condition - last
updated 26 July
2011

■ Favourable
Condition
■ Unfavourable
Recovering
■ Unfavourable
No change
■ Unfavourable
Declining
■ Part Destroyed
■ Destroyed
■ Not Assessed
□ Sites of Special
Scientific
Interest

Itchen Valley Water
Meadows SSSI, proposed
route for M3 extension.
Peter Wakely



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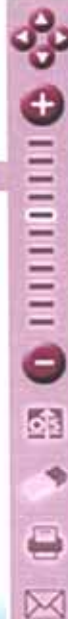
International Sites

Biodiversity Action Plan
Priority Habitats

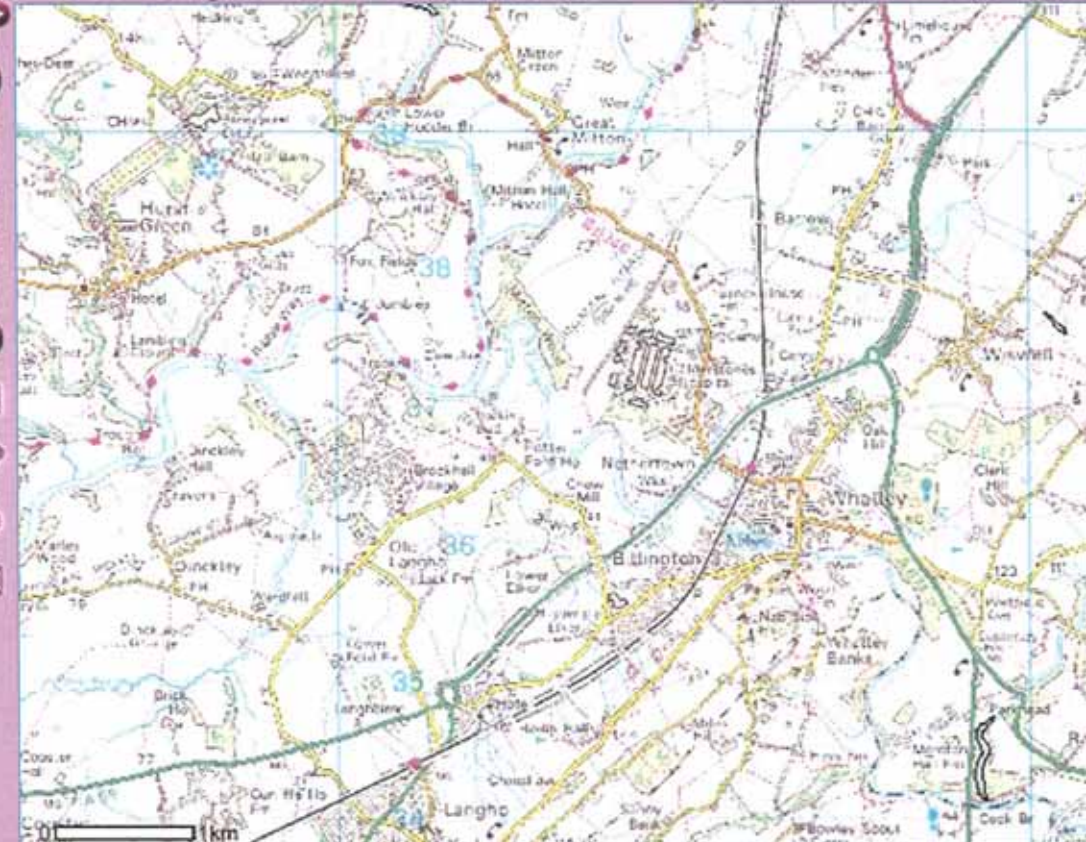
Geological Sites Map

Targeting and Planning Map

Agri-environment Delivery
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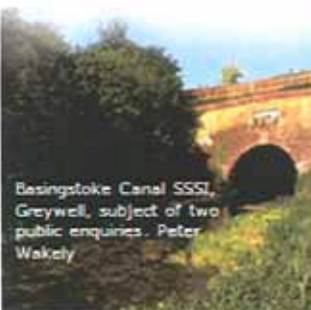


Overview map



Key

- ★ Natural England
Offices
- Special Areas of
Conservation
- SAC Water
Framework Unit
Condition
 - Favourable
Condition
 - Unfavourable
Condition
- Special
Protection Areas
- SPA Water
Framework Unit
Condition
 - Favourable
Condition
 - Unfavourable
Condition
- Ramsar Sites



Basingstoke Canal SSSI,
Greywell, subject of two
public enquiries. Peter
Wakely

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Key

- ☐ Wet Woodland
- ☒ Lowland Beech and Yew Woodland
- ☒ Lowland Mixed Deciduous Woodland
- ☐ Up and Calcareous Grassland
- ☒ Blanket Bog
- ☒ Up and Heathland
- ☐ Up and Hay Meadow
- ☐ Undetermined Grassland
- ☐ Up and Oakwoods
- ☐ Up and Mixed Ashwood
- ☐ Sites of Special Scientific Interest



Slapton Ley NNR, habitat
of strapwort, north
shore. Peter Wakely



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- International Sites
- Biodiversity Action Plan
- Priority Habitats
- Geological Sites Map
- Targeting and Planning Map
- Agri-environment Delivery on SSSIs



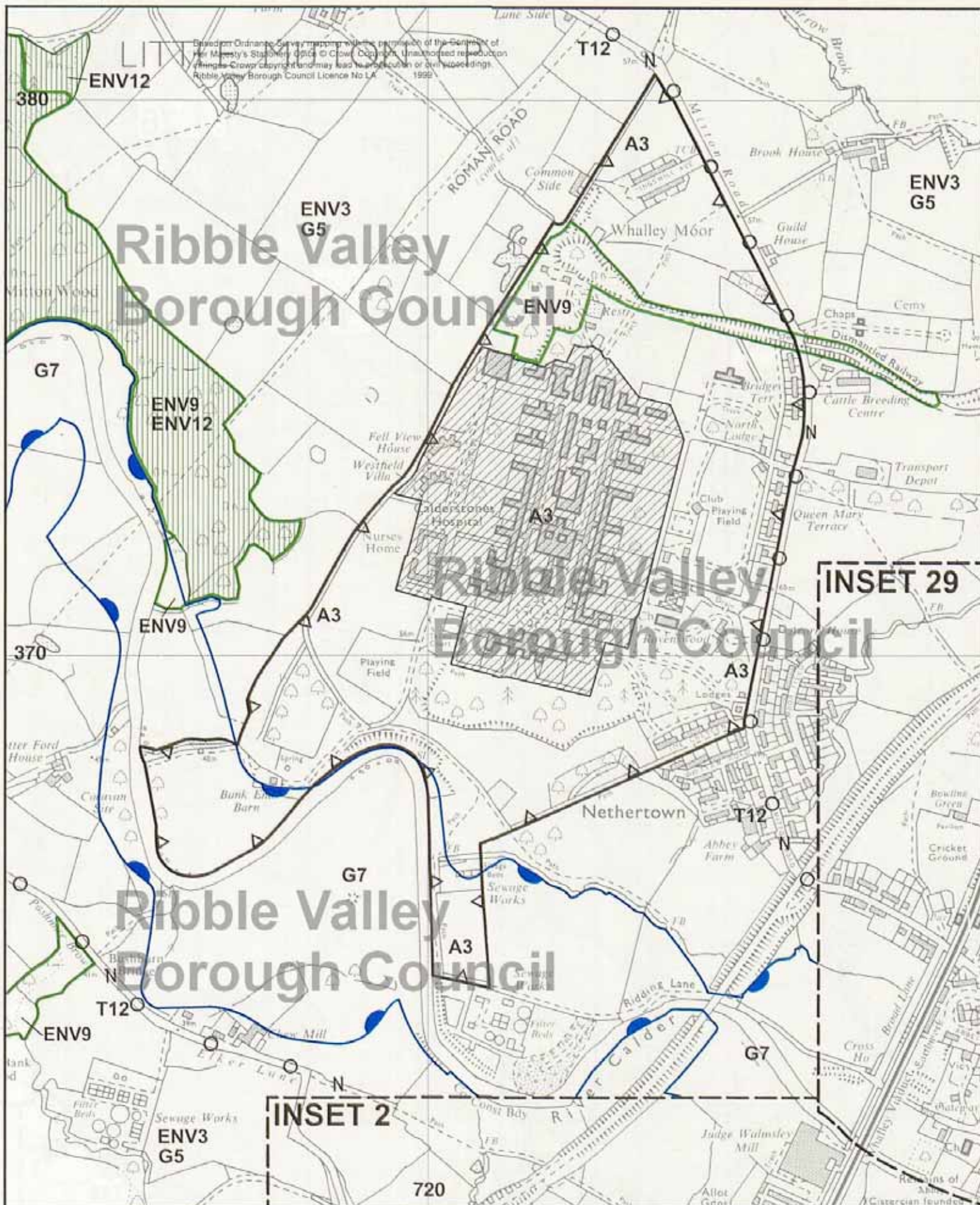
Overview map



Key

- ★ Natural England Offices
- National Nature Reserves
- Local Nature Reserves
- Country Parks
 - Green Flag Country Park
 - Non Green Flag Country Park
- Millennium Greens
- Downstep Greens
- Sites of Special Scientific Interest
- Natural England Regions





Inset 34. Calderstones 1:10,000

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APPENDIX 2:
Pendle Drive Habitat Survey Form and Target Note Report

EXTENDED PHASE 1 HABITAT SURVEY FORM



1.0 GENERAL DETAILS

Site Name	Pendle Drive, Whalley		
Job Number	2955	Doc. Ref	2955.001
Site Location	Land off Pendle Drive, Whalley, Clitheroe		
Date(s)	13 th June 2011		
Surveyor(s)	Catherine Highfield		
Weather	Overcast, but dry		
Seasonal Constraints	The survey was undertaken within the optimum survey period for Phase 1 habitat surveys. Therefore, there are no seasonal constraints.		
Methods	JNCC Phase 1 Habitat Survey 2007		
Drawing Ref:	G2955.002 Phase 1 Habitat Survey		
Target Notes:	Within this document		

	Written	Checked	Authorised
Initial	VJG	EJS	EJS

2.0 PRE-EXISTING DATA FOR SITE

2.1 Desktop study of free online resources was undertaken in July 2011

Source	Protected/important species records, protected sites and UKBAP priority habitats within 1km of the site	Metres from site/grid reference	Direction from site
Natural England's Nature on the map - Protected sites information	None within 1km of the site	N/A	N/A
Natural England's Nature on the Map - UK Biodiversity Action Plan priority habitats information	Wet woodland – Mitton wood	750m	West
Lancashire Environment Record Network (LERN) – Protected species	European protection - Soprano pipistrelle	250m	Southwest
	Birds of Conservation Concern - Linnet, lapwing, snipe, swallow, sand martin	SD73J	South
	Sand martin	875m	Southwest
	UKBAP priority species – Common toad	820m	West



	Lancashire BAP Provisional long list – <i>Ilybius guttiger</i> (water beetle)	325m, 700m	West
	Common frog	325m, 700m	West
	Horsetail hybrid (Equisetum x font-queri)	850m	North
Lancashire Environment Record Network (LERN) – Local Biological Heritage Sites (BHS)	Calderstones Hospital Woodland/Railway Line BHS	Adjacent	North
	Barrow Brook Field BHS	670m	Northwest
	Hard Hill Common	450m	North
	Mitton Wood	750m	West

3.0 HABITAT SURVEY RESULTS:

Habitat Type	Target Note(s)	Description
Semi-natural broad-leaved woodland	TN1 TN11	The south of the site is dominated by an area of semi-natural broad-leaved woodland. The woodland had some mature English oak (<i>Quercus robur</i>), hazel (<i>Corylus avellana</i>) and silver birch (<i>Betula pendula</i>) trees, suggesting that the woodland has semi-natural origins. However, there is some planting of native and non-native tree species with in the woodland, particularly adjacent to Pendle drive in the south of the site. Frequently occurring tree and shrub species include ash (<i>Fraxinus excelsior</i>), English oak, sycamore (<i>Acer pseudoplatanus</i>), hawthorn (<i>Crataegus monogyna</i>) and rhododendron (<i>Rhododendron ponticum</i>). Nettle (<i>Urtica dioica</i>), bramble (<i>Rubus fruticosus</i> agg.) and ash saplings are the dominant groundflora species.
Modified Neutral grassland ¹	TN3 TN5 TN8 TN10	Modified neutral grassland is the dominant habitat in the northern half of the site, some of which has developed over hardstanding. There is a good mix species present, false oat-grass (<i>Arrhenatherum elatius</i>), meadow foxtail (<i>Alopecurus pratensis</i>), Yorkshire fog (<i>Holcus lanatus</i>), cock's-foot (<i>Dactylis glomerata</i>), field horsetail (<i>Equisetum arvense</i>), ribwort plantain (<i>Plantago lanceolata</i>) and meadow vetchling (<i>Lathyrus pratensis</i>) are the more

¹ Modified neutral grassland is not derived from agricultural grassland and the terms semi-improved and improved do not apply. Some modified neutral grassland may be species-rich but many swards are dense, coarse and species-poor. Modified neutral grassland naturally regenerates on disturbed ground and is unmanaged. It most commonly occurs in urban areas and on post-industrial land.

Habitat Type	Target Note(s)	Description
		frequently occurring species.
Species-poor hedges	TN6	The eastern boundary of the site is boarded by an unmanaged double hedgerow. The northern section is mostly continuous, to the south the double hedgerow becomes defunct. Hawthorn (<i>Crataegus monogyna</i>) is the dominant species with occasional ash. The understory is a mix of tall ruderal and neutral grassland species, including false oat-grass, nettle and cleavers (<i>Galium aparine</i>). There is also a short section of beech hedge (<i>Fagus sylvatica</i>) forming the southwest boundary of the site with the adjacent property.
Tall ruderal herbs	TN2	There are four areas of tall ruderal herbs within the site. There is a nettle (<i>Urtica dioica</i>) dominated strip present between the double hedgerow in the east of the site. There are two areas adjacent to the edge of the area of hard standing in the centre of the site, there is also a strip of tall ruderal herbs on the western boundary of the site. Nettle, rosebay willowherb (<i>Chamerion angustifolium</i>), creeping thistle (<i>Cirsium arvense</i>) are most abundant.
Dense scrub	TN7	One area of dense scrub is present on site. It extends westward into the northern half of site from the hedges on the eastern boundary. Bramble (<i>Rubus fruticosus</i>) is the dominant species.
Scattered broad-leaved trees and scrub		Scattered scrub and tree saplings occur frequently within the modified neutral grassland, particularly in the south of this area. Willow (<i>Salix</i> sp.), alder (<i>Alnus glutinosa</i>) and silver birch occur frequently. There is also an area of scattered willow and hawthorn scrub amongst the modified neutral grassland and adjacent hardstanding in the east of the site. Scattered willow, hazel (<i>Corylus avellana</i>) and ash trees are also present amongst the dense bramble scrub in the east of the site.
Scattered coniferous trees	TN4	There is a line of Leyland Cypress (<i>Cupressocyparis leylandii</i>) trees perpendicular to the site boundary in the northwest of the site. There are also two scattered Leyland cypress trees just north of the path in the west of the site.
Introduced shrub	TN1	Introduced shrub borders much of the tarmac path that runs along the western boundary in the south of the site. A conifer hedge is on the western side of the path and a strip of snowberry (<i>Symphoricarpos albus</i>) dominated planting is on the east.
Amenity grassland		A strip of amenity grassland is present adjacent to Pendle Drive to the south of the site, two sections of this fall with in the site boundary.
Ephemeral/short perennial vegetation	TN9	As the site is no longer in use, the area of hardstanding in the centre of the site is becoming vegetated by ephemeral/short perennial vegetation and will eventually become modified neutral grassland. Species present in this area include dandelion (<i>Taraxacum officinale</i> agg.), creeping cinquefoil (<i>Potentilla reptans</i>), red fescue (<i>Festuca rubra</i>), white clover (<i>Trifolium repens</i>) and

4.0 ADDITIONAL NOTES:

Overall the site has a reasonable mix of habitats that are suitable to support a range of species, particularly birds and small mammals. The semi-natural broad-leaved woodland, dense scrub, scattered scrub and trees provide habitats of the highest ecological value on site.

The site is at the northern reach of the residential area of Whalley, Clitheroe. The wider landscape to the north and west is a mix of pastoral farmland with hedgerows and occasional areas of woodland. The river Ribble and two of its tributaries is present over 1km also to the west of the site. The site is linked to the wider landscape through a network of woodland strips and hedgerows.

Site proposals

A residential development is proposed on site. The current site proposals show that the majority of the semi-natural woodland in the south of the site is to be retained. Also to be retained is the double hedgerow along the eastern boundary.

5.0 SUMMARY:

Protected sites and habitats

There are no protected sites within the proposed development site.

The double hedgerow forming the eastern boundary of the site fulfils the criteria to be classified as a UK Biodiversity Action Plan priority habitat. Also, broad-leaved semi-natural woodland

There are four Local Biological Heritage Sites within 1km of the site. The closest of which is Calderstones Hospital Woodland/Railway Line BHS which is adjacent to the northern boundary of the site, it comprises a section of dismantled railway and an area of semi-natural broad-leaved woodland. Hard Hill Common BHS is approximately 450m north of the site, it comprise an area of rush pasture. Barrow Brook Field BHS is approximately 670m northwest of the site and comprise a species-rich damp neutral grassland. Mitton Wood is approximately 750m to the west of the site, it comprises an area semi-natural woodland near the confluence of the River Calder with the River Ribble. It is also listed in the Lancashire Inventory of Ancient Woodland (provisional).

Hard Hill Common and Mitton Wood are also UKBAP priority habitats. Hard Hill Common comprises priority habitat purple moor-grass/rush pasture and Mitton wood comprises priority habitat wet woodland.

Protected species

No field signs of protected species were noted during the site visit. However, the habitats on site do have potential to support protected species. The mosaic of unmanaged grassland, woodland, scrub and hedgerow on site offers potential habitat for reptiles. However, there are no historic records for reptiles within 1km of the site. This mix of habitats including the adjacent pastoral fields also provide good potential habitat for badger. There is a record of a badger sett approximately 300m west of the site.

There is a record for soprano pipistrelle 250m southwest of the site. The site offers potential foraging and commuting habitat for bats and some of the mature trees within the woodland

habitat may offer potential summer roosting habitat for bats.

There are records for Birds of Conservation Concern linnet, lapwing, snipe, swallow and sand martin within the local area. The site offers limited foraging potential and nesting habitat for lapwing and snipe. The areas of unmanaged grassland offer potential foraging habitat for swallow and sand martin. The ephemeral /short perennial vegetation and rough grassland on site offers potential foraging habitat for linnet and the hedgerow and woodland habitat also offers potential nesting habitat for linnet.

The woodland, dense scrub, scattered trees and scattered scrub on site offer potential nesting habitat for many species of bird. As any UK nesting bird and their nest are protected removal or pruning of trees and scrub will have to be completed outside the nesting bird season (March – August inclusive). If this is not possible an inspection of the trees/scrub prior to removal by an ecologist will be required.

There are historical records for UKBAP Priority species common toad and Lancashire BAP provisional long list species *Ilybius guttiger* (water beetle), common frog and horsetail hybrid (*Equisetum x font-queri*) within 1km of the site. There is no breeding habitat (standing water) for common toad, common frog and *Ilybius guttiger* within the site or within 250m of the site. The site does offer potential foraging habitat for common frog and toad. The record for horsetail hybrid is 850m north of the site and it was not recorded on site during the phase 1 habitat survey.

There are no waterbodies on site or within 250m and there are no historic records of great crested newt within 1km of the site.

There are no watercourses within or adjacent to the site and there are no historical records of otter and water vole within 1km of the site.

Invasive species

Schedule 9 and non-native invasive species Himalayan balsam occurs occasionally amongst the groundflora of the woodland habitat in the south of the site. It is also present within the double hedgerow in the northeast of the site.

Schedule 9 and non-native invasive species rhododendron occurs occasionally amongst the understory of the woodland habitat in the south of the site.

6.0 TARGET NOTES REPORT:

Species frequency

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

TN1		
Broad-leaved woodland with mature trees		
<i>Fraxinus excelsior</i>	Ash	A
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Rhododendron ponticum</i>	Rhododendron	F
<i>Galium aparine</i>	Cleavers	F
<i>Stachys sylvatica</i>	Hedge Woundwort	O
<i>Rumex crispus</i>	Curled Dock	O
<i>Dryopteris sp</i>	Buckler-fern species	O
<i>Impatiens glandulifera</i>	Himalayan Balsam	O
<i>Carex pendula</i>	Pendulous Sedge	O
<i>Rubus fruticosus agg.</i>	Bramble	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Alliaria petiolata</i>	Garlic Mustard	O

<i>Poa trivialis</i>	Rough Meadow-grass	O
<i>Corylus avellana</i>	Hazel	O
<i>Quercus robur</i>	English Oak	O
<i>Alnus glutinosa</i>	Alder	O
<i>Sambucus nigra</i>	Elder	O
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Geum urbanum</i>	Wood Avens	O
<i>Fagus sylvatica</i>	Beech	O
<i>Ilex aquifolium</i>	Holly	R
<i>Taxus baccata</i>	Yew	R
<i>Cotoneaster sp.</i>	Cotoneaster species	R
<i>Juncus effusus</i>	Soft Rush	R
<i>Malus domestica</i>	Apple	R
<i>Fagus sylvatica var purpurea</i>	Purple Beech	R
<i>Acer campestre</i>	Field Maple	R
<i>Populus sp.</i>	Poplar species	R
<i>Prunus sp.</i>	Cherry species	R
<i>Laburnum anagyroides</i>	Laburnum	R
TN2		
An area of tall ruderal herb along the back of residential properties. Shaded in part by mature trees in gardens including mature oak trees. Tall ruderal herb merges into grassland to the north.		
<i>Urtica dioica</i>	Nettle	A
<i>Phalaris arundinacea</i>	Reed Canary-grass	A
<i>Rubus fruticosus agg.</i>	Bramble	A
<i>Epilobium sp.</i>	Willowherb species	F
<i>Cirsium arvense</i>	Creeping Thistle	F
<i>Arrhenatherum elatius</i>	False Oat-grass	O
<i>Galium aparine</i>	Cleavers	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Fraxinus excelsior</i>	Ash	R
TN3		
Tall ruderal herb dominated areas in the west and north east of the site.		
<i>Epilobium hirsutum</i>	Great Willowherb	D
<i>Urtica dioica</i>	Nettle	A
<i>Rubus fruticosus agg.</i>	Bramble	F
<i>Cirsium arvense</i>	Creeping Thistle	F
<i>Calystegia sp.</i>	Bindweed species	F
<i>Galium aparine</i>	Cleavers	F
TN4		
Area of tarmac pavement that is no longer used and has become partly vegetated by moss species and ephemeral/short perennial vegetation.		
<i>Moss sp.</i>	Moss species	F
<i>Geranium robertianum</i>	Herb-Robert	O
<i>Cerastium fontanum</i>	Common Mouse-ear	O
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	O
<i>Geranium dissectum</i>	Cut-leaved Cranesbill	R
TN5		
Less species diverse area of modified neutral grassland in the north of the site.		

<i>Arrhenatherum elatius</i>	False Oat-grass	D
<i>Dactylis glomerata</i>	Cock's-foot	A
<i>Epilobium hirsutum</i>	Great Willowherb	F
<i>Urtica dioica</i>	Nettle	F
<i>Equisetum arvense</i>	Field Horsetail	F
<i>Alopecurus pratensis</i>	Meadow Foxtail	F
<i>Galium aparine</i>	Cleavers	F
<i>Poa trivialis</i>	Rough Meadow-grass	F
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Phalaris arundinacea</i>	Reed Canary-grass	O
<i>Rubus fruticosus</i> agg.	Bramble	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Potentilla reptans</i>	Creeping Cinquefoil	O
<i>Anthriscus sylvestris</i>	Cow Parsley	O
<i>Lathyrus pratensis</i>	Meadow Vetchling	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Armoracia rusticana</i>	Horse-radish	R
<i>Arctium minus</i>	Lesser Burdock	R
<i>Veronica chamaedrys</i>	Germander Speedwell	R

TN6		
Species-poor double hedgerow along the eastern boundary of the site. It becomes defunct to the south.		
<i>Arrhenatherum elatius</i>	False Oat-grass	D
<i>Crataegus monogyna</i>	Hawthorn	D
<i>Urtica dioica</i>	Nettle	A
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Poa trivialis</i>	Rough Meadow-grass	F
<i>Galium aparine</i>	Cleavers	F
<i>Fraxinus excelsior</i>	Ash	F
<i>Rosa</i> sp.	Rose species	O
<i>Chamerion angustifolium</i>	Rosebay Willowherb	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Dryopteris</i> sp	Buckler-fern species	O
<i>Geranium robertianum</i>	Herb-Robert	O

TN7		
Dense bramble and rose scrub adjacent to the hedge, also nettle/rosebay willowherb tall ruderal herb with scattered trees.		
<i>Rubus fruticosus</i> agg.	Bramble	D
<i>Salix</i> species	Willow species	F
<i>Rosa</i> sp.	Rose species	F
<i>Symphoricarpos albus</i>	Snowberry	F
<i>Urtica dioica</i>	Nettle	F
<i>Chamerion angustifolium</i>	Rosebay Willowherb	F
<i>Iris pseudacorus</i>	Yellow Flag Iris	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Alnus glutinosa</i>	Alder	O
<i>Sambucus nigra</i>	Elder	O
<i>Galium aparine</i>	Cleavers	O
<i>Phalaris arundinacea</i>	Reed Canary-grass	O

TN8		
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Modified neutral grassland

<i>Arrhenatherum elatius</i>	False Oat-grass	D
<i>Plantago lanceolata</i>	Ribwort Plantain	F
<i>Phalaris arundinacea</i>	Reed Canary-grass	F
<i>Lathyrus pratensis</i>	Meadow Vetchling	O
<i>Juncus inflexus</i>	Hard Rush	O
<i>Potentilla anserina</i>	Silverweed	O
<i>Juncus effusus</i>	Soft Rush	O
<i>Ranunculus acris</i>	Meadow Buttercup	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Holcus lanatus</i>	Yorkshire-fog	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Salix species</i>	Willow species	O
<i>Poa trivialis</i>	Rough Meadow-grass	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Vicia cracca</i>	Tufted Vetch	O
<i>Carex hirta</i>	Hairy Sedge	O

TN9

Hardstanding with some areas of ephemeral/short perennial vegetation grading to modified neutral grassland. Considerable scattered willow with some taller willow scrub.

<i>Potentilla erecta</i>	Tormentil	F
<i>Agrostis stolonifera</i>	Creeping Bent	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Alchemilla vulgaris</i> agg.	Lady's-mantle	O
<i>Senecio jacobaea</i>	Ragwort	O
<i>Holcus lanatus</i>	Yorkshire-fog	O
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	O
<i>Bellis perennis</i>	Daisy	O
<i>Cerastium fontanum</i>	Common Mouse-ear	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Potentilla anserina</i>	Silverweed	O
<i>Myosotis</i> sp.	Forget-me-not species	O
<i>Taraxacum officinale</i> agg.	Dandelion	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Trifolium pratense</i>	Red Clover	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Arrhenatherum elatius</i>	False Oat-grass	O
<i>Betula pendula</i>	Silver Birch	O
<i>Trifolium dubium</i>	Lesser Trefoil	O
<i>Juncus inflexus</i>	Hard Rush	O
<i>Alnus glutinosa</i>	Alder	R
<i>Cirsium vulgare</i>	Spear Thistle	R
<i>Chamerion angustifolium</i>	Rosebay Willowherb	R
<i>Heracleum sphondylium</i>	Hogweed	R

TN10

Area of tall modified neutral grassland grading to tall ruderal herb.

<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Poa trivialis</i>	Rough Meadow-grass	F
<i>Galium aparine</i>	Cleavers	F
<i>Potentilla anserina</i>	Silverweed	F

<i>Lathyrus pratensis</i>	Meadow Vetchling	F
<i>Plantago lanceolata</i>	Ribwort Plantain	F
<i>Juncus conglomeratus</i>	Compact Rush	O
<i>Juncus effusus</i>	Soft Rush	O
<i>Epilobium sp.</i>	Willowherb species	O
<i>Vicia cracca</i>	Tufted Vetch	O
<i>Iris pseudacorus</i>	Yellow Flag Iris	O
<i>Phalaris arundinacea</i>	Reed Canary-grass	O
<i>Alopecurus pratensis</i>	Meadow Foxtail	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Senecio jacobaea</i>	Ragwort	R
<i>Rosa sp.</i>	Rose species	R
TN11		
Broad-leaved woodland with some mature trees		
<i>Fraxinus excelsior</i>	Ash	A
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Rhododendron ponticum</i>	Rhododendron	F
<i>Galium aparine</i>	Cleavers	F
<i>Stachys sylvatica</i>	Hedge Woundwort	O
<i>Rumex crispus</i>	Curled Dock	O
<i>Dryopteris sp.</i>	Buckler-fern species	O
<i>Impatiens glandulifera</i>	Himalayan Balsam	O
<i>Carex pendula</i>	Pendulous Sedge	O
<i>Rubus fruticosus agg.</i>	Bramble	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Alliaria petiolata</i>	Garlic Mustard	O
<i>Poa trivialis</i>	Rough Meadow-grass	O
<i>Corylus avellana</i>	Hazel	O
<i>Quercus robur</i>	English Oak	O
<i>Alnus glutinosa</i>	Alder	O
<i>Sambucus nigra</i>	Elder	O
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Geum urbanum</i>	Wood Avens	O
<i>Fagus sylvatica</i>	Beech	O
<i>Ilex aquifolium</i>	Holly	R
<i>Taxus baccata</i>	Yew	R
<i>Cotoneaster sp.</i>	Cotoneaster species	R
<i>Juncus effusus</i>	Soft Rush	R
<i>Malus domestica</i>	Apple	R
<i>Fagus sylvatica var purpurea</i>	Purple Beech	R
<i>Acer campestre</i>	Field Maple	R
<i>Populus sp.</i>	Poplar species	R
<i>Prunus sp.</i>	Cherry species	R
<i>Laburnum anagyroides</i>	Laburnum	R

APPENDIX 3

Pendle Drive Site Layout

APPENDIX 4

Examples of Habitat Enhancement Measures for Bats and Birds

BAT ACCESS

Recommended 6 slits per gable end, top two right within apex.

Excerpt from JNCC (2004) *Bat workers manual*. Eds Mitchell-Jones, A. J. & McLeish, A. P. Joint Nature Conservation Committee

Access holes should be kept small or birds may move in. For most bat species a slit 15mm x 20-25mm long is adequate and the ideal position appears to be between soffit and wall. The bats can then land on the vertical wall and run up through the gap; most birds cannot manage this. Building regulations specify that roost must have adequate ventilation around the soffit, so access for bats can easily be incorporated into this. Other suitable access points for bats are at gable ends, around lead flashing or through gaps between slates or tiles.

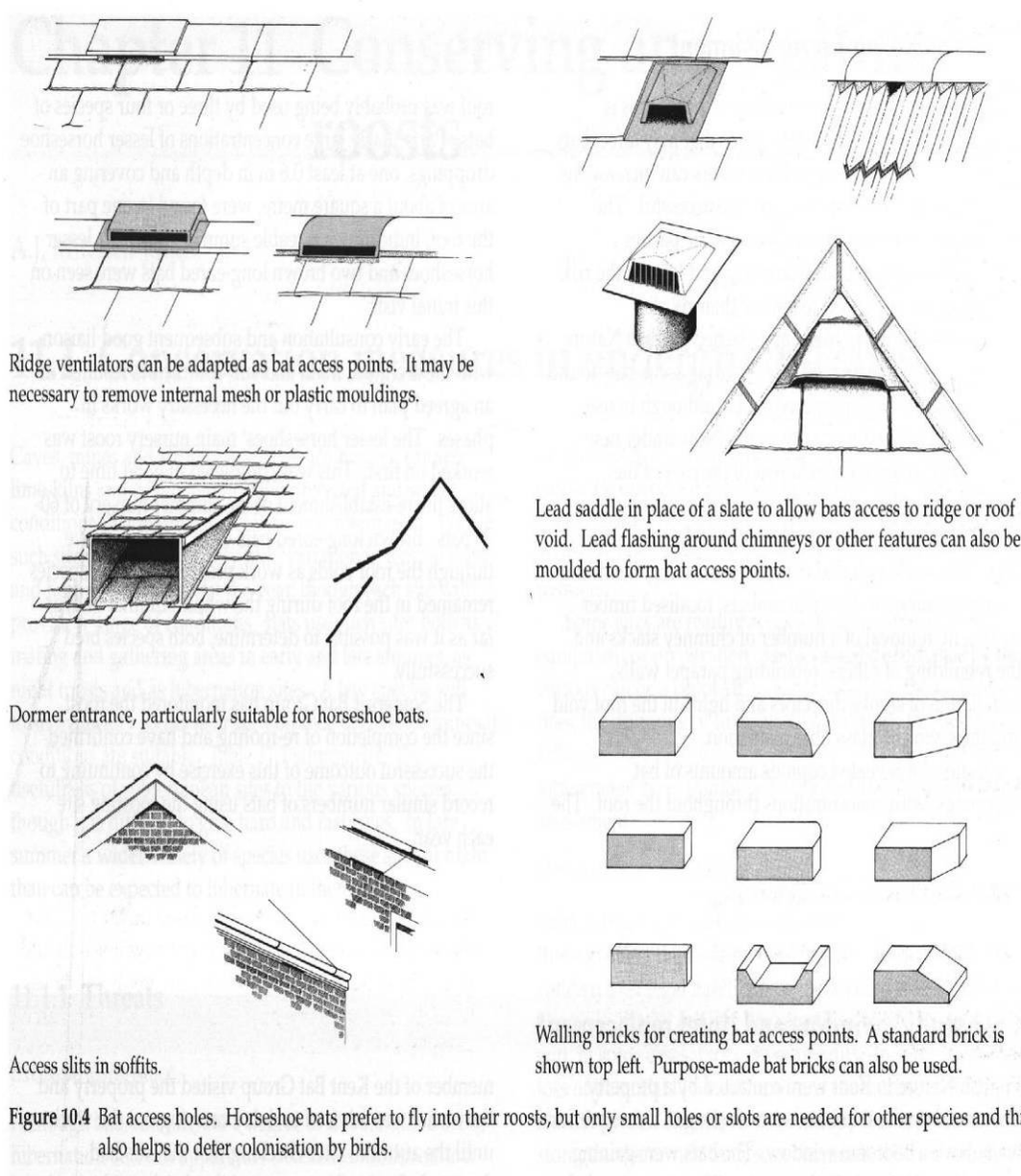


Figure 10.4 Bat access holes. Horseshoe bats prefer to fly into their roosts, but only small holes or slots are needed for other species and this also helps to deter colonisation by birds.

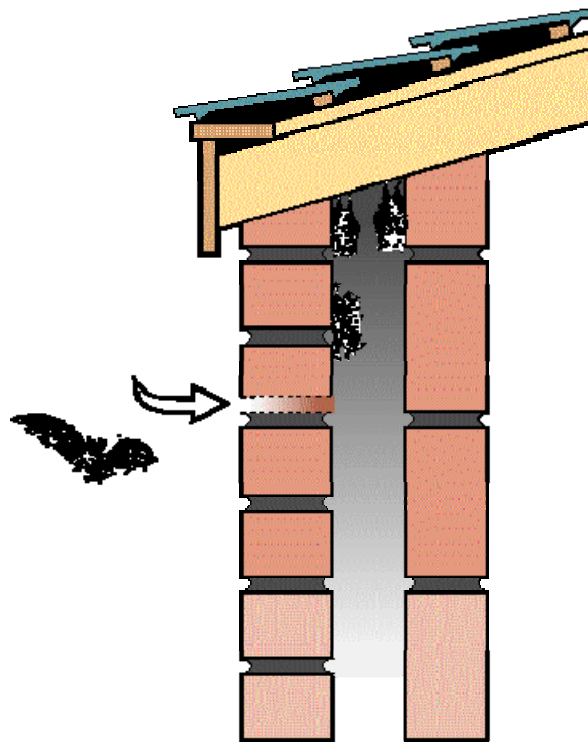
BAT ACCESS BRICK SUPPLIERS:

Marshalls Clay Products

Quarry Lane, Howley Park, Woodkirk, Dewsbury, West Yorkshire WF12 7JJ Tel (01132) 203535 Fax (01132) 203555



Marshall's Bat Access Brick (also available in stone)



A Bat Brick should ideally be placed as high as possible, at the gable apex or close to the soffit.

'Over recent years Marshalls Clay Products has become almost as well known for the success of its award winning environmental work as it is for the quality of its brick products. Our land restoration and nature conservation schemes, first developed by Yorkshire Brick Company, have become an integral part of our activities over the years and have been recognised as some of the most successful of their kind anywhere. As part of this ongoing philosophy, Marshalls Clay Products have been producing a special Bat Access Brick, specially designed to help the country's badly depleted bat population by providing access to wall cavities or roof spaces where most bat colonies tend to be. (see diagram)

In recent years bats have been declining at an alarming rate, (estimates suggest as much as 60%) loss of habitat being a key factor in this decline. Nearly all colonies tend to be on the outside of houses, in wall cavities, under slates, flashing or tiles, etc.

Contrary to popular opinion bats do not make nests and do absolutely no damage to buildings or roof timbers, indeed many people encourage bat colonies in their area because of the large number of insect pests, woodworm, etc. which they eat. Most colonies will use a house for only a few weeks in summer before dispersing by the autumn.'

BAT BOX SPECIFICATIONS

Suppliers :

Alana Ecology
The Old Primary School
Church Street
Bishop's Castle
Shropshire
SY9 5AE

Tel: +44 (0)1588 630173
Fax: +44 (0)1588 630176
Email: sales@alanaecology.com

BOXES/BRICKS TO INCORPORATE INTO BUILDINGS

N27

This box should be cemented into a wall. It contains a single internal wooden panel which simulates a crevice. The removable front panel allows for easy cleaning. *No painting is required, but if it is necessary, a natural breathable paint should be used*

Woodcrete (75% wood sawdust, concrete and clay mixture)
Width 18cm
Height 29cm
Depth 23.5cm

A02006 **N27**
£22.94 **£26.95 inc VAT**



No 750/6 Bat tube

This long box can be installed within brick masonry, beneath plasterwork or wood panelling, or incorporated into concrete structures such as factory buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits. This box is maintenance-free as the entrance slit is at the bottom, allowing for self cleaning. *No painting is required, but if painting is necessary a natural breathable paint should be used*

Woodcrete (75% wood sawdust, concrete and clay mixture)
Width 20cm
Height 47.5cm
Depth 12.5cm
Entrance width 15cm
Entrance depth 2cm

A02057 **No 750/6**
£46.77 **£54.95 inc VAT**



Norfolk Bat Brick

A handmade brick which can be used to replace an existing brick or incorporated into new structures. Ideal for sheltered sites such as under bridges, in tunnels, or even in mines and caves. The slits are the perfect size for Daubentons', Natterers, Long-eared, and Brandts' bats. The bat brick should not be painted.

These bat bricks are only available directly from the Norfolk Bat Group. Contact John Goldsmith 01508 550 784 for orders.

Norfolk Bat Brick
£8.09 **£9.51 inc VAT**

Delivery time may be several weeks



BAT BOXES TO SITE ON TREES OR BUILDINGS

2F Bat Box

A popular general purpose box attractive to the smaller British bats. A simple design with a narrow entrance slit on the front.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter 16cm
Height 33cm

A02002 2F Bat Box

(Up to 10) £16.13 £18.95 inc VAT
(11 +) £15.11 £17.75 inc VAT



2F-DFP Bat Box

A general purpose box attractive to the smaller British bats, with a roughened wooden panel inside the box which simulates a crevice. This box is favoured by Daubenton's bat and Nathusius' pipistrelle.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter 16cm
Height 33cm

A02003 2F-DFP Bat Box

(Up to 10) £21.23 £24.95 inc VAT
(11 +) £20.38 £23.95 inc VAT



2FN Bat Box

A larger box with both a wide access slit at the base and an access hole on the underside. Suitable for the larger British bat species. Particularly successful in attracting Noctule and Bechstein's bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter 16cm
Height 36cm

A02004 2FN Bat Box

(Up to 19) £21.23 £24.95 inc VAT
(20 +) £20.68 £24.30 inc VAT



1FF Bat Box

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Width 27cm
Height 43cm

A02000 1FF Bat Box

(Up to 3) £33.15 £38.95 inc VAT
(4 +) £32.50 £37.95 inc VAT



1FD Bat Box

A large general purpose bat box, with two roughened wood panels inside the box which simulate crevices.

Woodcrete (75% wood sawdust, concrete and clay mixture)

Diameter 16cm

Height 36cm

A02058 1FD Bat Box

£30.60 £35.95 inc VAT



1FS Bat Box

A larger capacity general purpose bat box.

Woodcrete (75% wood sawdust, concrete and clay mixture)

Diameter 28cm

Height 44cm

Weight 10kg

A02005 1FS Bat Box

£51.02 £59.95 inc VAT



1FW Hibernation Box

This monster box is designed to provide a protected environment, particularly through the cold winter months when bats hibernate. It has three internal wooden panels imitating crevices. *Supplied with special fixing brackets. It is important to fit this heavy box very securely if mounting above the ground, and to site it well away from public areas.*

Woodcrete (75% wood sawdust, concrete and clay mixture)

Diameter 38cm

Height 50cm

Weight 28kg

A02001 1FW Hibernation Box

£98.68 £115.95 inc VAT



Schwegler 1FQ Bat Box

The latest model from Schwegler is an attractive box designed specifically to be fitted on the external wall of a house, barn or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside as well as a roughened front panel to enable the bats to land securely. Access into the box is via a step-like recess.

Inside the box, rough pieces of wood are incorporated into the back of the box which are good insulators and are used by the bats as perches. The internal layout offers three different areas with varying degrees of brightness and temperature.

This durable box is easy to attach to most walls, requires no maintenance or cleaning and will last for decades. *Please note that this box is designed to be fitted to a wall. Due to the weight it is unsuitable for fences or sheds.*

Woodcrete (75% wood sawdust, concrete and clay mixture)

Height 565mm; Width 350mm Depth 85mm Weight 13kg



A02092 Schwegler 1FQ Bat Box

£55.28 £64.95 inc VAT

BIRD BOX SPECIFICATIONS

Suppliers

Alana Ecology
The Old Primary School
Church Street
Bishop's Castle
Shropshire
SY9 5AE

Tel: +44 (0)1588 630173
Fax: +44 (0)1588 630176
Email: sales@alanaecology.com

Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance

BOXES TO FIT UNDER EAVES

Sparrow Terrace, Stone Colour

House sparrows are gregarious and prefer to nest close to each other, so this woodcrete box provides room for three families under one roof. Made from long-lasting, breathable woodcrete. Stone colour.

No maintenance required.

Dimensions 245 x 430 x 200 mm.

Weight 13kg. Designed for fixing to walls (not suitable for fences or sheds due to the weight of the box).



A02085 Sparrow Terrace, Stone Colour (also available in brown)

Schwegler 9A House Martin Double Nest

These woodcrete nests are durable and ready for immediate use when birds return each summer. Easily fixed under the eaves on the outside walls of buildings, at least 2 metres from the ground. The backing board may be painted to match the building.



Model 9A is a double unit with two nests mounted side by side on a backing board, as shown. Model 9B is similar to the 9A above but with one single nest

A02018 Schwegler 9A House Martin Double Nest

A02019 Schwegler 9B Single House Martin Nest

Schwegler No 10 Swallow Box

This box should be located inside buildings such as barns, stables, sheds or outhouses, ensuring there is always access for the birds through a window or opening.



A02020 Schwegler No 10 Swallow Box

Droppings Board

To avoid problems with bird droppings from house martin or swallow nests, this board can be installed where necessary, for example over a window or door.

A02021 Droppings Board



Schwegler No 16 IMF Swift Box, Double Chamber

The design of this box mimics bell tower louvres. It has two removable panels for easy inspection of the two nest chambers. Designed for fixing on or within walls (not suitable for fences or sheds).

Dimensions 460mm h x 430mm w x 225mm d

A02088 Schwegler No 16 IMF Swift Box, Double Chamber

**Schwegler No 16 Swift Box, Single Chamber**

Similar to the box above but with a single chamber and single front panel.

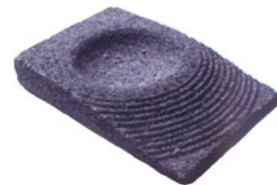
Dimensions 240mm h x 430mm w x 225mm d.

A02087 Schwegler No 16 Swift Box, Single Chamber

Nest Mould for No 16 Swift Boxes

This nest mould fits inside the nest chamber of the No16 or No16 IMF boxes above, to encourage nesting. Research shows that the birds are more likely to nest if a nest mould is used.

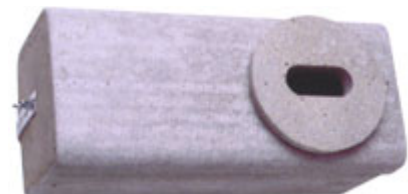
A02089 Nest Mould for No 16 Swift Boxes

**Schwegler No 17 Swift Box**

This box is constructed from plant-fibre based material. It should be sited 6-7m above the ground, near the roof of a building or on a steep rock face.

Interior dimensions 14 x 14 cm. Outer length 34cm

A02041 Schwegler No 17 Swift Box

**Schwegler No 18 Swift Box**

This nest box is suitable for fixing high under the eaves or under the guttering of a building.

Woodcrete on board backing.

Interior dimensions 14 x 34 x 15 cm.

Exterior dimensions 19 x 50 x 22 cm

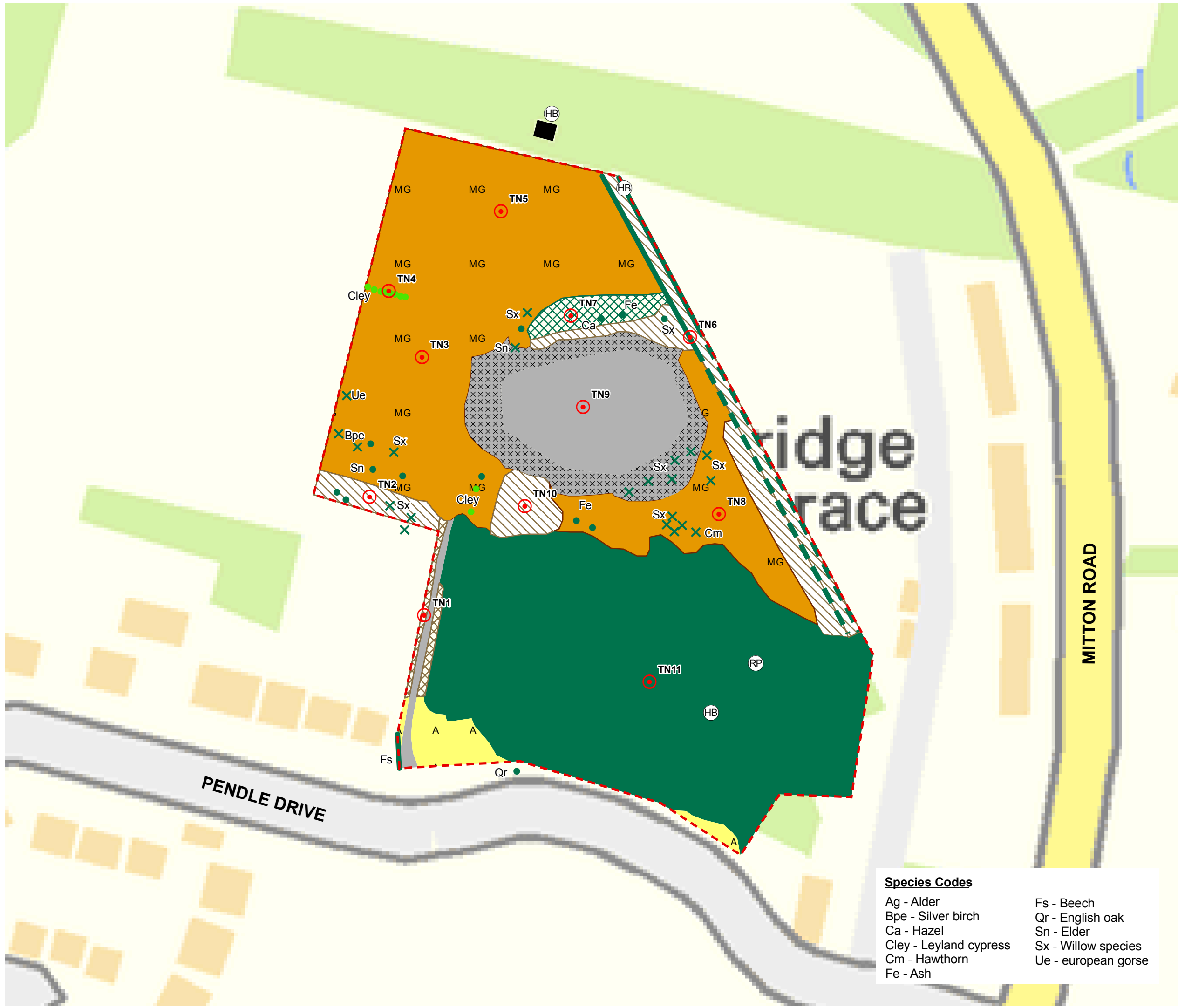
A02041A Schwegler No 18 Swift Box

**Schwegler 1B Bird Box, natural brown**

The most popular box for garden birds, the 1B appeals to a wide range of species. The box can be nailed to the trunk of a tree, or hung from a branch or the side of a building. Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance. Woodcrete, 23cm high x 16cm diameter. With standard 32mm diameter entrance hole



DRAWINGS



- Key**
- Site boundary
 - Target notes
 - Scattered broad-leaved tree
 - Scattered coniferous tree
 - Scattered scrub
 - Species-poor intact hedge
 - Species-poor defunct hedge
 - Semi-natural broad-leaved woodland
 - Dense/continuous scrub
 - Tall ruderal herbs
 - MG Modified neutral grassland
 - A Amenity grassland
 - Introduced shrub
 - Ephemeral/short perennial cultivated/disturbed land
 - Hardstanding
 - Building
 - HB Himalayan balsam
 - RP Rhododendron

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Rev	Description	Dwn	Appvd	Date
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Genesis Centre
Birchwood Science Park
Warrington WA3 7BH
Tel 01925 844004
Fax 01925 844002
email tep@tep.uk.com

Project:
Land at Pendle Drive

Title:
Phase 1 Habitat Survey

Map No.
G.2955.001

Scale:
1:1000 @ A3

Date:
26/07/11

Drawn:
DH

Checked:
VG

Approved:
EJS

- Species Codes**
- | | |
|------------------------|---------------------|
| Ag - Alder | Fs - Beech |
| Bpe - Silver birch | Qr - English oak |
| Ca - Hazel | Sn - Elder |
| Cley - Leyland cypress | Sx - Willow species |
| Cm - Hawthorn | Ue - european gorse |
| Fe - Ash | |