



**- LAND AT BARROW BROOK -
(Area 3 & 4)**

**EXTENDED PHASE 1 HABITAT SURVEY
& ECOLOGICAL EVALUATION**

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- LAND AT BARROW BROOK -

**EXTENDED PHASE 1 HABITAT SURVEY
& ECOLOGICAL EVALUATION**

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PART 1 INTRODUCTION:

1.1 REASONS FOR SURVEY:

PENNINE *Ecological* have been commissioned by Avalon Chartered Town Planning to undertake an Extended Phase 1 Survey and Ecological Evaluation of land at Barrow Brook, Clitheroe, Lancashire.

The study includes the following elements:

- Desk based study.
- Extended Phase 1 Habitat Survey.
- Badger Survey.
- Bat roost search in site trees.
- Great Crested Newt assessment
- Water Vole Survey of the on-site pond.
- Evaluation of breeding bird potential.

The study also includes a full evaluation of the ecological significance of the survey findings, and recommendations for future survey where appropriate.

The surveys are required due to a proposal to develop former agricultural land at the Barrow Brook site.

1.2 SITE LOCATION:

The locations of the habitats surveyed are shown on Map 1 in the Appendix.

1.3 SURVEY METHODOLOGY:

1.3.1 Extended Phase 1 Habitat Survey:

An Extended Phase 1 Habitat Survey (*Nature Conservancy Council 1990*) of the survey area was undertaken on 17th January 2012. The site's habitats were fully mapped and higher vascular plant species were recorded and given abundance values according to the standard DAFOR scale, where:

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

Where appropriate these values can be prefixed by the letter L (locally) or V (very), to provide more subtle biogeographical data.

1.3.2 Badger Survey:

The badger survey was undertaken in January 2012 and focused on land directly affected by the proposed development only.

The badger survey used standard techniques for establishing the use of the site by badger, and includes searches for evidence of badgers including:

- Setts
- Pathways
- Footprints
- Latrines
- Foraging areas
- Scratching posts

1.3.3 Bat Roost Search:

Following the Phase 1 Survey, the trees on the site were examined for holes that could potentially be used as bat roosts. The surveys were undertaken at ground level using close-focusing binoculars.

1.3.4 Water Vole Survey:

The water vole survey was carried out on 17th January 2012, the survey is based on the standard methodology as outlined in the *Water Vole Conservation Handbook Second Edition*, Strachan, R. & Moorhouse, T. (2006).

Searches were made for the following signs;

- Sightings of individual animals
- Latrines
- Feeding stations
- Burrows
- Runs

1.3.5 Other Species:

In addition to the above, assessments in relation to the following species/groups were also undertaken as part of this study.

General assessment of the suitability of the site to support breeding birds.

Assessment of the likelihood of great crested newt (hereafter referred to as GCN) being present or affected by site development.

1.4 SURVEY CONSTRAINTS:

1.4.1 Extended Phase 1 Habitat Survey:

The survey was conducted in January, a sub-optimal time for Extended Phase 1 Habitat Survey. The survey timing generated constraints as many species may not be visible at that time. However there was sufficient vegetative evidence present to make a reasonable general assessment of the vegetation on site.

1.4.2 Badger Survey:

There were no constraints to the badger survey on the land affected by the proposal.

1.4.3 Bat Roost Search:

The survey was undertaken when the trees on site had lost their leaves, which is the optimum time to examine trees for potential roost sites. There were no constraints.

1.4.4 Water Vole Survey:

The water vole survey was undertaken outside of the optimum survey period which is late April – early October. However the prevailing conditions in the pond meant that this was not a constraint.

PART 2 SURVEY RESULTS:

2.1 DESK BASED STUDY:

A request was made to Lancashire Environment Record Network (LERN) - Research & Intelligence Team in January 2012, to obtain details of any biological records relating to the site. In particular requests were made for any records of protected species within a 500m radius of the centre of the site.

A search for Biological Heritage Sites within 500m of the site was also undertaken.

Species records supplied by LERN are not provided in the appendix as none relate directly to the study area.

Statutory designations (SSSIs etc) were researched on Natural England's 'Nature on the Map' website.

The results of this consultation revealed the following information;

- The site has no statutory or non-statutory wildlife or ecological designations.
- There are no Sites of Special Scientific Interest (SSSI) within 3km of the site.
- There are no Biological Heritage Sites within at least 500m of the study area.
- The protected species search revealed no records of any European protected species, i.e. a species listed in Annex IV to the Habitats Directive, within 500m of the site.
- There are no waterbodies capable of supporting GCN within 500m of the site.
- The search revealed records for water vole at the adjacent Barrow Lodge. The records date from 1977.
- No records of badger were returned within the search area.

No other information or data is known for the site.

2.2 EXTENDED PHASE 1 HABITAT SURVEY:

2.2.1 General Description:

The site of the proposed development is composed of several semi-improved/improved fields separated by post and wire fences and the fragmented remains of boundary hedgerows. The fields are uniform and linear suggesting a relatively recent (<200 years) enclosure of a larger open field.

The management of these fields appears to be based on stock grazing, however a grass crop of hay/silage might also be taken during summer.

The fields are composed of a mixture of improved and semi-improved neutral grassland all of which appears to be species-poor.

A series of relict hawthorn hedgerows are a feature of the site, however the hedgerows are defunct and are now little more than scattered lines of shrubs along the fence lines that form the current field boundaries. A single mature ash occurs on one of the boundaries.

A saturated ditch forms the boundary between the two northernmost fields. The ditch has no significant standing water and feeds the pond on the western boundary of the site, however the pond is dry and dominated by tall ruderal herb.

The grasslands appear in 'good heart' agriculturally and are thought to be mainly grazed by sheep.

The site has a single well-used public right of way used for informal recreation, mostly dog walking.

Photographs showing the general character of the site are provided at the end of this section of the report.

2.2.2 Extended Phase 1 Habitat Survey Target Notes:

The Target Notes are shown on the Extended Phase 1 Habitat Survey Map (Map 1) in the Appendix.

Note: All species nomenclature follows Stace, C. (1996) 'New Flora of the British Isles' - definitive English names.

Target Note No: 1

Three improved fields displaying no evidence of floristic diversity. Winter conditions prevented the separation of abundance between species in this habitat and the following species are estimated to be at least frequent within the sward, perennial rye-grass, Yorkshire-fog, red fescue and meadow-grass sp.

Tufted hair-grass was identified as occasional.

The fields contain lines of scattered mature hawthorn indicating the line of former hedgerows.

Target Note No: 2

A large uniformly rectangular field of semi-improved poor grassland. The field is sheep-grazed and in common with the field described in Target Note 1, scattered mature hawthorn occur on the boundaries. Semi-mature hawthorn also occur locally.

Species:

Abundance:

Yorkshire-fog	D
Red fescue	D
Ribwort plantain	A
Common sorrel	F
Crested dog's-tail	F
Dandelion sp.	F
Perennial rye-grass	F
Meadow buttercup	LF

Target Note 2 continued:

Species:	Abundance:
Common bent	LF
Soft-rush	VLF
Moss sp.	VLF

See Site Photographs Fig. 1

Target Note No: 3

A small dry pond on the western boundary of the site. The pond doesn't appear to be an old marl pit and lacks the 'naturalness' associated with many of those ponds.

The bed of the pond is now dominated by common nettle, with abundant dock and moss sp., frequent great willowherb and locally frequent common couch. Small occasional stands of iris sp. occur on the margins.

Potential evidence of historical infilling is present.

See Site Photographs Fig. 2

Target Note No: 4

A saturated ditch that feeds the pond described above. Although saturated the ditch has no standing water and is dominated by soft-rush and cock's-foot.

See Site Photographs Fig. 2

Species:	Abundance:
Soft-rush	D
Cock's-foot	D
Dock sp.	LF
Lesser celandine	LF
Tufted hair-grass	LF
Great willowherb	LF
St-John's-wort sp.	LF
Meadowsweet	LF
Hard rush	LF
Common sorrel	O
Meadow vetchling	O

Target Note No: 5

A large semi-improved poor grassland dominated by short grasses and displaying low species diversity.

Species:	Abundance:
Yorkshire-fog	LD
Red fescue	A
Crested dog's-tail	A
Ribwort plantain	A
Common sorrel	F
Dandelion sp.	F
Common bent	LF
Meadow buttercup	LF
Cock's-foot	LF
Common mouse-ear	O

Target Note No: 6

A fragmented hedge situated on the outside of the northern boundary fence. The hedge is dominated by hawthorn and has very occasional holly. Oak is rare.

Target Note No: 7

A semi-improved poor grassland dominated by short grasses and displaying low species diversity. Rushes occur in sparse patches

Species:	Abundance:
Perennial rye-grass	D
Meadow-grass sp.	A
Red fescue	LA
Crested dog's-tail	F
Common bent	LF
Common sorrel	LF
Soft-rush	VLF
Lesser celandine	LF
Tufted hair-grass	O
Common mouse-ear	O
Dandelion sp.	O
Creeping buttercup	LF

Target Note No: 8

A semi-improved poor grassland similar to that described above. The grassland is dominated by short fine grasses and displays low species diversity.

Species:

Abundance:

Common bent	D
Red fescue	D
Yorkshire-fog	LF
Creeping thistle	LF
Spear thistle	O
Creeping buttercup	O
Common sorrel	O
Tufted hair-grass	O

Site Photographs:



Fig. 1: Typical view of the site showing short grazed swards and scattered hawthorn.



Fig. 2: Typical view of the dry pond colonised by tall herb. The ditch described in Target Note 4 is in the background.

2.3 BADGER SURVEY:

2.3.1 Survey Details and Results:

The badger survey employed standard techniques to establish if badgers are present on site or use the site for foraging/commuting. (See Section 1.3 Survey Methodology)

The following searches were undertaken.

- Searches for setts on site.
- Searches for foraging signs and pathways.
- Boundary searches for runs, pathways and latrines.

The survey results are outlined below.

Sett Search:

The survey found no setts on site and no visible sign of setts on the adjacent land.

Therefore it can be concluded that there are no badger setts on site or near vicinity where land was accessible.

Search for Foraging Signs and Pathways:

The site was searched by walking several transects across each of the fields for badger pathways or signs of foraging. No sign of badger activity was found therefore it can be concluded that the species is not using this area for foraging or commuting.

Boundary Search:

All of the boundaries of the site were walked and examined for potential runs, pathways and latrines. The search found no evidence to suggest badger activity along any of the site boundaries.

The absence of any obvious means of ingress indicates that badgers are not entering the site. The absence of latrines indicates a lack of territorial activity in the near vicinity of the site.

2.3.2 Survey Conclusions:

The survey found no evidence of historic, recent or current use of the site by badgers for foraging, commuting or occupation and the species is considered to be absent.

2.4 BATS

2.4.1 Bat Roost and Foraging Area Evaluation:

The trees and shrubs on the site were individually searched for holes and fissures that could potentially be used as bat roosts. The search was undertaken from ground level using close-focusing binoculars.

In addition bat foraging potential on the site was evaluated.

The location of potential bat roosts and foraging areas is shown on Map 2 in the appendix.

Bat Roosts:

The roost search revealed several mature hawthorn and a single tree on site with bat roost potential, these are described below.

T1: Several mature hawthorn off-set from the boundary fence.

T2: Several mature hawthorn on the line of a boundary fence.

T3: A pair of mature hawthorn on the boundary fence.

T4: A recumbent mature hawthorn.

T5: A mature hawthorn adjacent to a wet ditch.

T6: A mature hawthorn adjacent to a dry ditch.

T7: A mature hawthorn adjacent to a dry ditch.

T8: Two mature hawthorn and a single mature ash.

Foraging Areas:

Potential foraging areas on site occur along the northern and eastern hedged boundary features of the site. The actual value to bats is not known, however given that the grassland adjacent to these features is grazed short and is significantly improved, the value for bats is not considered to be major.

Bats might also commute across the site between roosts and foraging areas off site.

2.5 WATER VOLE:

2.5.1 Water Vole Survey:

The survey revealed that the on-site pond was dry and that the associated ditch held no standing water. No evidence of current or historical occupation was observed at the site and the conditions in the pond and ditch are considered to be highly sub-optimal for water voles.

2.6 BIRDS:

2.6.1 Bird Evaluation:

Bird surveys were not undertaken at the site as the survey was undertaken in winter. Instead a general evaluation of the site for nesting bird potential was made based on the conditions observed on site

The following points should be considered in respect of the sites potential to support ground nesting birds. These are as follows;

- The fields are established improved/semi-improved grasslands.
- The fields are open and largely surrounded by stock fences with hedgerows on the northern and eastern boundaries. Scattered mature hawthorn and a single ash also occur. These features offer perches and cover to potential predators.
- The grasslands appear to be permanent pasture, however their management might also include an annual grass crop, although this cannot be confirmed by field evidence.
- The site is directly adjacent to areas of housing and domestic cats will hunt in these areas.
- The public footpath crossing the site is well used by pedestrians and dogs and such regular disturbance limits the value of the grasslands locally for ground-nesting birds.
- The general prevailing conditions as listed above are not considered wholly conducive to the breeding success of ground-nesting birds. However occasional nesting by birds such as lapwing or skylark could occur locally in the central areas of the site where conditions are open and possibly less disturbed.

In regards to non-ground nesting birds, the hedgerows, shrubs and mature ash on site will be used by typical common passerines such as blackbird, robin, dunnock, wren, chaffinch, titmice, magpie and woodpigeon for example.

Records were made of bird species present through the visit, these include blackbird, woodpigeon and magpie.

2.7 GREAT CRESTED NEWT:

2.7.1 Great Crested Newt Assessment:

The on-site pond was visited to assess GCN potential and desk studies were undertaken to identify potential ponds off-site within 500m

The field survey shows that the on site pond was dry (see site photographs Fig. 2) and the tall herb communities present indicate that the pond doesn't normally hold water.

Desk-based studies and field surveys indicate that there are no potential great crested newt (GCN) ponds within 500m of the site.

The only waterbodies present locally form part of a complex of formal fishing lakes and stock ponds at Pendle View Fishery. These features are considered to be unsuitable habitat for breeding GCN.

PART 3 ECOLOGICAL EVALUATION:

3.1 EVALUATION OF SURVEY FINDINGS:

The following section evaluates the site in relation to statutory/non-statutory sites, protected species and species/habitats listed on the UK Biodiversity Action Plan Priority List, Section 41 Species/Habitats of Principal Importance in England (NERC) Act 2006, and the Lancashire Biodiversity Action Plan.

3.1.1 Statutory Sites:

There are no statutory wildlife sites within 3 km of the site.*

(*Source – Nature on the Map)

3.1.2 Biological Heritage Sites:

The area affected by the proposed works fails to meet any of the guidelines for selection associated with the Lancashire Biological Heritage Site scheme.

The desk based study show that there are no BHSs within 500m of the site.

3.1.3 Protected Species:

There are a number of hawthorn shrubs and a single tree on the site that have bat roost potential.

The edge of the boundary hedgerows have potential foraging value to bats, however the importance of the site for foraging bats is not known. Bats may also commute across the site.

Desk-based studies and field surveys indicate that there are no potential great crested newt (GCN) ponds within 500m of the site. The on-site pond is dry and the only waterbodies present locally form part of a complex of formal fishing lakes at Pendle View Fishery. These features are considered to be unsuitable habitat for breeding GCN.

There are no badger setts on site and there is no evidence of badger foraging on site, or runs entering the site through boundaries.

There is no suitable water vole habitat on site and the species is considered to be absent.

The prevailing conditions on site are not considered to be wholly conducive to the breeding success of ground nesting birds, however small numbers of these birds might occasionally breed.

Common birds will use the hedgerows, shrubs and trees as nest sites.

3.1.4 Biodiversity Action Plan (BAP) Habitats and Species:

Hedgerows are a UK BAP Priority Habitat, and there is a single fragmented hedgerow on the southern boundary that conforms to the UK BAP on the site.

The hedgerow is not 'Important' as defined by the Hedgerow Regulations 1997.

The hedgerows on the northern and eastern boundary are situated outside of the boundary fence.

There are no other UK BAP Priority Habitats/Species present on site.

3.1.5 Section 41 (S41) Habitats and Species of Principal Importance in England Natural Environment and Rural Communities (NERC) Act 2006:

The hedgerow is a Section 41 Habitat.

3.1.6 Lancashire Biodiversity Action Plan Habitats & Species:

There are no Lancashire BAP Habitats on the site.

3.2 SUMMARY EVALUATION:

3.2.1 Vegetation – Habitats and Species:

The survey found no habitats of obvious high biodiversity value. The habitats present are common and include areas of improved and semi-improved poor grassland with generally low diversity, a short length of fragmented hedgerow, dry pond and wet ditch and numerous scattered hawthorn. A single mature ash is also present.

The length of hedgerow is a UKBAP/S41 habitat but is not 'Important' as defined by the Hedgerow Regulations 1997.

3.2.2 Badgers:

There is no evidence of badger occupation/use on the site, or where visible, off site. The species is considered to be absent in the immediate locality.

3.2.3 Bats:

There are a number of mature hawthorn and a single mature ash on the site that have bat roost potential. The site also provides limited bat foraging and bats may also commute across the site.

3.2.4 Water Vole:

There is no suitable water vole habitat on site and the species is considered to be absent.

3.2.5 Birds:

The site is considered to have only minor value to ground-nesting birds.

Common birds will use the hedgerow, shrubs and tree as nest sites.

3.2.6 Great Crested Newt:

There are no suitable GCN ponds within 500m of the site and the species is considered to be absent.

PART 4 RECOMMENDATIONS:

4.1 HABITATS:

The findings of the Extended Phase 1 Survey are considered to be representative of the flora/habitats present on site and no further survey is recommended.

4.2 FAUNA:

4.2.1 Badger:

There was a total absence of any evidence of activity that could be associated with badger on the site. Therefore no further survey in respect of badger is recommended.

4.2.2 Bats:

Several of the shrubs/tree have bat roost potential and the site provides low potential foraging areas for bats. It is recommended that bat surveys are undertaken to confirm bat roost status in the trees, and to evaluate the sites status for foraging bats.

The roost surveys must be undertaken by a licensed bat ecologist. Bats and their roosts are fully protected by law and any tree/shrub identified as having a potential bat roost must not be felled or pruned without taking advice from a licensed bat ecologist.

4.2.3 Birds:

Surveys in spring/summer are considered unlikely to reveal any population greater of site-local significance, therefore additional surveys are not recommended.

However if any of the trees/shrubs are to be felled then this must be done outside of the bird breeding season during September-February. Removal in the period March-August must not be undertaken unless the acting ecologist has inspected the site and deemed the trees/shrubs to be clear of nesting birds.

PART 5 REFERENCES:

5.1 REFERENCES:

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Web Sites:

Bing Maps.

Google Earth.

Lancashire Biodiversity Partnership website.

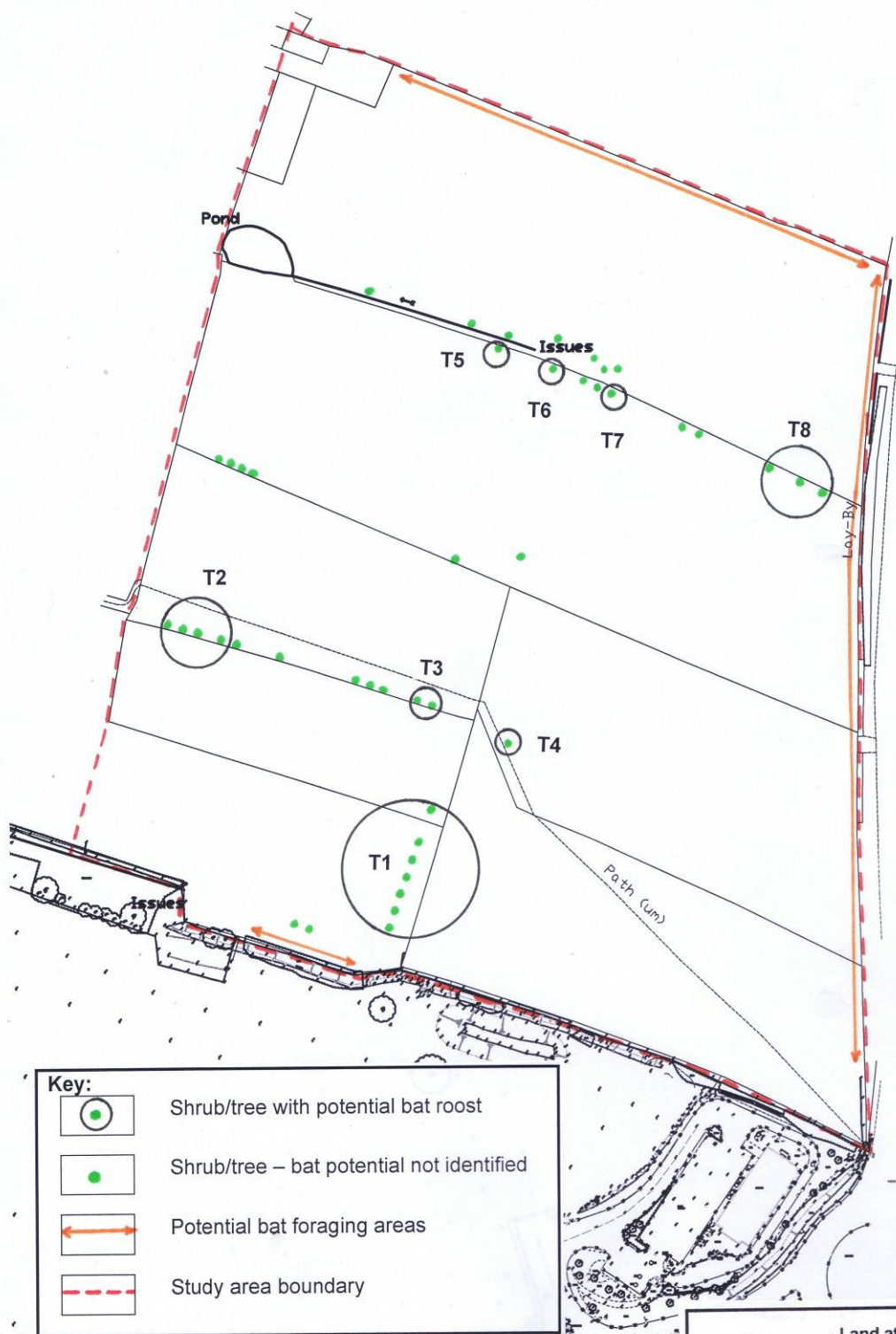
MARIO.

Natural England – Nature on the Map.

UKBAP website.

APPENDIX:

Map 1: Extended Phase 1 Habitat Survey
Map 2: Potential Bat Roosts and Foraging Areas



Key:

-  Shrub/tree with potential bat roost
-  Shrub/tree – bat potential not identified
-  Potential bat foraging areas
-  Study area boundary

Job title:
- Land at Barrow Brook -
Extended Phase 1 Survey & Ecological Evaluation
Job Ref: N/A

Map 2: Potential Bat Roosts and Foraging Areas

DRAWN: Ian Ryding SCALE: Not to scale DATE: 17th January 2012



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