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Environmental and Rural Chartered Surveyors

## Ecological Appraisal

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## PROFESSIONAL RESPONSIBILITY

This report has been commissioned and the actions of the surveyor have been made in accordance with the Code of Professional Conduct for the Institute of Ecology and Environmental Management. ([www.ieem.org.uk](http://www.ieem.org.uk)) and the Royal Institution of Chartered Surveyors ([www.rics.org.uk](http://www.rics.org.uk))

## 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

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Author	Chris Arthur	Date	21/08/2014
Checked by	Lizi Langston	Date	28/08/2014
Report Version	1		
Field data entered	<input checked="" type="checkbox"/>		
Report Reference	2270		

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# 1. INTRODUCTION

## 1.1 *Background*

- 1.1.1 In August 2014 Envirotech NW Ltd were commissioned by Rural Solutions to carry out an Ecological Appraisal of land off Old Hives, Chipping, Lancashire, central grid reference SD 61851 43520. A site investigation was undertaken and a report compiled which includes recommendations for any future actions and or mitigation required.
- 1.1.2 The survey was requested in connection with the proposed construction of three residential dwellings, a detached car port and associated access drive.

## 1.2 *Objectives*

1.2.1 The main objectives of the study were:

- The completion of a Phase 1 Habitat 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.

# 2. METHODOLOGY AND SOURCES OF INFORMATION

## 2.1 *Data Search*

- 2.1.1 The Biological Records centre for Lancashire "LERN" 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 national, regional or local importance within a 2km radius of the site boundary.
- 2.1.2 Google Earth and Google Street View were consulted to establish the presence of any features of ecological importance within the local area.

## 2.2 *Vegetation and Habitats*

- 2.2.1 A vegetation and habitat map was produced for the site and the immediate surrounding area. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2003).
- 2.2.2 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 (1991).

2.2.3 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, Himalayan balsam and Giant hogweed on terrestrial habitat and aquatic species such as Floating pennywort, Water hyacinth and New Zealand pygmyweed.

2.2.4 The survey was also informed by questioning the landowner/site agent to ascertain the recent history of the site.

### **2.3 Timing and Constraints**

2.3.1 The site and surrounding land was visited on the 11<sup>th</sup> August 2014 by Chris Arthur BSc (Hons), MSc, Grad CIEEM and Jack Sykes BSc (Hons), MCIEEM and by Chris Arthur on the 20<sup>th</sup> August 2014. During the visits, weather conditions were suitable for the survey types undertaken.

## **3. PHASE 1 SURVEY RESULTS**

### **3.1 Habitat Results**

3.1.1 The site comprises poor semi-improved grassland with semi-mature trees and fences on its boundaries. It abuts open fields to the North and East, residential dwellings to the West and a small road, Old Hives, to the South. There is a small area of urban mosaic in the locality to the East, but the wider landscape is dominated by agricultural fields.

3.1.2 See Figure 1 for the Phase 1 Habitat Plan and Table 1 for the descriptive Botanical and Faunal Target Notes, hereafter referred to as BTN and FTN.

Target Note	Description	Comment
BTN1	Poor semi-improved grassland	<p>The grassland on site is species poor, though more diverse than improved pasture. It is rank around the edges and in scattered parcels throughout, suggesting that no current management is in place. These areas also contain species more typical of ruderal, scrubby vegetation.</p> <p>Graminoids comprise Perennial rye grass (<i>Lolium perenne</i>), Yorkshire fog (<i>Holcus lanatus</i>), False oat grass (<i>Arrhenatherum elatius</i>), Cock's foot (<i>Dactylis glomerata</i>), Bent (<i>Agrostis sp.</i>), Timothy-grass (<i>Phleum pratense</i>) and Tufted hair-grass (<i>Deschampsia cespitosa</i>).</p> <p>Other species present within the sward are Ribwort plantain (<i>Plantago lanceolata</i>), Creeping buttercup (<i>Ranunculus repens</i>), Silverweed (<i>Potentilla anserina</i>), Dandelion (<i>Taraxacum sp.</i>), Broad-leaved dock (<i>Rumex obtusifolius</i>), Creeping thistle (<i>Cirsium arvense</i>), Yarrow (<i>Achillea millefolium</i>), Sorrel (<i>Rumex acetosella</i>), Field speedweel (<i>Veronica persica</i>), Horsetail (<i>Equisetum sp.</i>) and Ladies mantle (<i>Alchemilla mollis</i>).</p> <p>In the ranker, peripheral areas, Hogweed (<i>Heracleum sphondylium</i>), Ground elder (<i>Aegopodium podagraria</i>), Bramble (<i>Rubus fruticosus agg</i>) and Meadowseet (<i>Filipendula ulmaria</i>) are found.</p>
BTN2	Scattered parkland/broad-leaved trees	<p>There are a small number of broad-leaved trees on the North and East site boundaries that span the age classes young to semi-mature. These comprise Sycamore (<i>Acer pseudoplatanus</i>), Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>), Goat willow (<i>Salix caprea</i>) and Lime (<i>Tilia x europaea</i>).</p> <p>The potential of these trees to be used by bats is discussed in the results section below.</p>
BTN3	Running water	<p>There is a small water-course along the Southern boundary of the site. This is culverted to the West and was very shallow at the time of the survey. It is heavily vegetated with Meadowsweet (<i>Filipendula ulmaria</i>).</p>

BTN4	Buildings	Residential dwellings are adjacent to the site to the West.
BTN5	Other habitat	Surrounding the dwellings are their associated gardens, comprising amenity grassland and ornamental planting.
BTN6	Hard-standing	A minor road, Old Hive, abuts the site to the South.
BTN7	Poor semi-improved grassland	The wider landscape is predominantly agricultural land which looks to be comparable to the core of the site.
BTN8	Other habitat	To the North of the site is Clark House Farm Pasture Biological Heritage Site - A non-statutory designated site containing species-rich grassland communities.
FTN1	Water voles	The water-course to the South of the site was assessed as being of negligible potential for Water voles. This is discussed further in this report.
FTN2	Bats	During the activity surveys, Common pipistrelle bats were observed commuting from the direction of the adjacent dwellings and foraging around the stream to the South, along with Daubenton's bats.

*Table 1 - Details of Botanical and Faunal Target Notes*





**Key**

- - - Site Boundary
- Botanical Target Note
- Faunal Target Note
- SI Poor semi-improved grassland
- - - Other habitat
- Hardstanding
- Buildings
- Running water
- Broadleaved Parkland/cattered trees
- - - Fence



Figure 1  
Results\* of Extended  
Phase 1 Habitat Survey

SCALE: NTS

REV 01

\*Habitats outside the site boundary are indicative only and have been mapped from within the site boundary or from publicly accessible land



The core of the site is poor semi-improved grassland of low species diversity (BTN1).

The assemblage strongly indicates agricultural improvement in the past with occasional ruderal species such as nettle indicating localised nutrient enrichment.



There are a small number of young to semi-mature trees along the Eastern and Northern site boundaries (BTN2).





There is a small water-course along the Southern boundary of the site (BTN3 & FTN2).

This is shallow, heavily vegetated, and culverted in the Western site area.



There is a mill pond c.150m to the North of the site. This was observed to support high numbers of waterfowl and fish.

It is isolated from the site by Chipping Brook.

Table 2 - *Photographs*

## 4. SPECIES SURVEY METHODOLOGY

### 4.1 *Amphibian*

- 4.1.1 Great crested newts are listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. It is protected under Schedule 2 of the Conservation (Natural Habitats) Regulations (2010) and Schedule 5 of the Wildlife & Countryside Act (1981).
- 4.1.2 The Great crested newt baseline survey involved a pond screening assessment to determine the presence and suitability of ponds located within the study area using a Habitat Suitability Index.
- 4.1.3 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. 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. The pond assessment was undertaken in order to determine which water-bodies, based on their potential to support Great crested newts, should be subject to presence/absence surveys.
- 4.1.4 A large mill pond occurs to the North of the site. This could be viewed from the road, allowing a HSI score to be compiled.

### 4.2 *Badger*

- 4.2.1 Badgers 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 essentially protects Badgers from killing, injuring or disturbance. The main issue on proposed development sites tends to be the potential disturbance of badgers in their setts 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. 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.
- 4.2.2 The survey for Badgers comprised an assessment of all suitable habitat within and outside the study area boundary (where this was possible) for indications of use by badgers.
- 4.2.3 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
- Surveys were also undertaken at night, during the bat surveys, by scanning the study area with a torch.

### **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 Natural Habitats) Regulations (2010), as European 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 (Hundt (2012)) 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 behavior in combination with the geographical location, topography and habitats present within the survey area and surrounds. This resulted in the production of a map showing habitat quality both on and adjacent to the site.

4.3.4 The survey area has semi-mature trees within it and linear routes such as Chipping Brook to the North. The main site however comprises an area which is open, exposed and structurally poor, it has a very low potential for use by bats.

4.3.5 As a result of the potential suitability of the habitat outside the site and along its boundaries for foraging bats but the low potential for impacts upon bat species due to the proposal being on open and exposed grassland, two bat activity surveys were deemed necessary. The surveys were based upon standard guidelines Hundt (2012), NCC (1987) and Mitchell-Jones (2004) and were undertaken in suitable weather conditions by suitably qualified and experienced personnel.

4.3.6 The survey methods comprised a transect route which was walked in order to cover all on-site habitats from sunset until light levels dropped to the extent that bat flight

heights could not be determined and walking over the site in the dark was judged to be unsafe.

- 4.3.7 In addition to the activity survey, trees 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 an assessment of their potential to be used by bats by a licensed surveyor.

#### **4.4 *Birds***

- 4.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act (1981) when building a nest, rearing young or sitting on eggs. Some bird species, such as Barn Owl, are protected when near an active nest site. Several birds are listed as UK and or County BAP species.
- 4.4.2 The poor quality habitat suggested a low potential for breeding bird species of interest.
- 4.4.3 Bird species and behavior was noted during the other field surveys. All areas are covered equally, in order to avoid the subjective survey of better quality 'bird habitat'. Any birds displaying breeding behavior were recorded.

#### **4.5 *Brown Hare***

- 4.5.1 The Brown Hare is a UK BAP species.
- 4.5.2 The survey method involved walking field boundaries and surveying each individual hedgerow and field 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 phase 1 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 priority or BAP species would be likely to be affected by the proposal.

## **4.7 Otter**

4.7.1 Otters are given protection by Annexes II & IV of the Habitats Directive and by Schedule 5 of the Wildlife and Countryside Act (1981) as amended and Schedule 2 of the Conservation (Natural Habitats etc.) Regulations (2010).

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.

## **4.8 Reptiles**

4.8.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act (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 Reptile surveys comprising visual encounter surveys were undertaken. 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 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 There is a stream on the South boundary of the site. This watercourse was surveyed and assessed for evidence of the presence of Water Vole.

4.9.3 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**

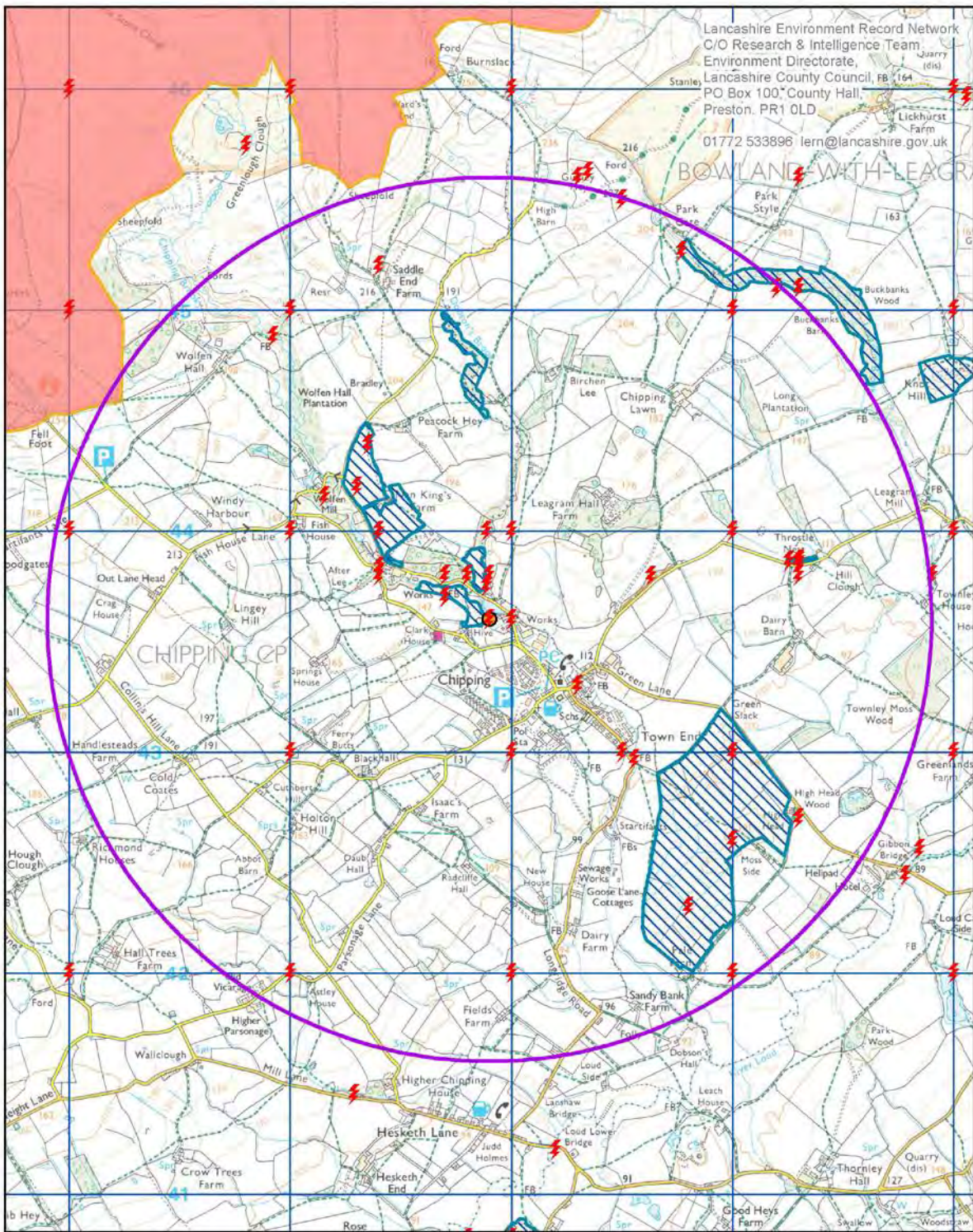
- 4.10.1 Due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site. Bats and water voles were active at the time of the survey.
- 4.10.2 The duration, extent and scope of the surveys were considered sufficient to plan appropriate mitigation and recommend additional precautionary survey work required prior to the commencement of work.
- 4.10.3 No significant survey limitations were encountered.

## **5. RESULTS**

### **5.1 Data Search**

- 5.1.1 Envirotech and LERN hold no records of protected or notable species for the site, though there are records for within 2km (Figure 2). These are discussed in the relevant sections below.
- 5.1.2 There are several non-statutory designated sites within 2km of the site (Figure 2). The nearest of these is Clark House Farm Pasture Biological Heritage Site (BHS), which abuts the site to the North.
- 5.1.3 This is designated for its species rich grassland communities. The grassland present on the development site is species poor and indicative of agricultural improvement; it is not representative of those found within Clark House Farm Pasture BHS.
- 5.1.4 The nearest statutory protected site is Bowland Fells Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI), c.1950m to the North-west (Figure 3).





**Legend**

-  The Grove 2km Buffer
-  Lancs\_Key\_Species\_20131106
-  The Grove
-  SPA
-  SSSI
-  SSSI Site Unit
-  BHS\_2012

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Figure 2 - Non-statutory designated sites and notable species records 2km buffer



Figure 3 - Statutory designated sites 2km buffer

## 5.2 Vegetation

- 5.2.1 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.
- 5.2.2 The poor semi-improved grassland has a very low species diversity and ecological value. Whilst the assemblage of species within it is higher than improved pasture and the site appears not to have been actively managed in the 2014 season, the species are all indicative of past regular grazing and disturbance, this habitat does not constitute a BAP habitat. The occurrence of small strands of ruderal vegetation indicate localised nutrient enrichment.
- 5.2.3 Trees within the site boundary comprise Ash, Sycamore and Lime, along with young Ash, Sycamore and Goat willow. These trees do not form woodland but semi-mature trees should be retained in any proposed scheme and or where they are removed new tree planting should be undertaken. Cut wood from felled trees should be stacked on the site boundaries where it can decay naturally and provide habitat for invertebrates.

5.2.4 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.

### 5.3 Amphibian

5.3.1 There are 35 records for amphibians within 2km of the site (Figure 4), including a single record for *Triturus sp.*, assumed to be Great crested newt (*Triturus cristatus*). This dates from 2006 and is c.1800m to the South-east of the site.

5.3.2 The core development area has a low value to amphibians being open and exposed and of uniform sward length. There are no boundary hedgerows or other areas that are likely to be utilised as refuges and/or hibernacula.

5.3.3 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 for hibernation.

5.3.4 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.

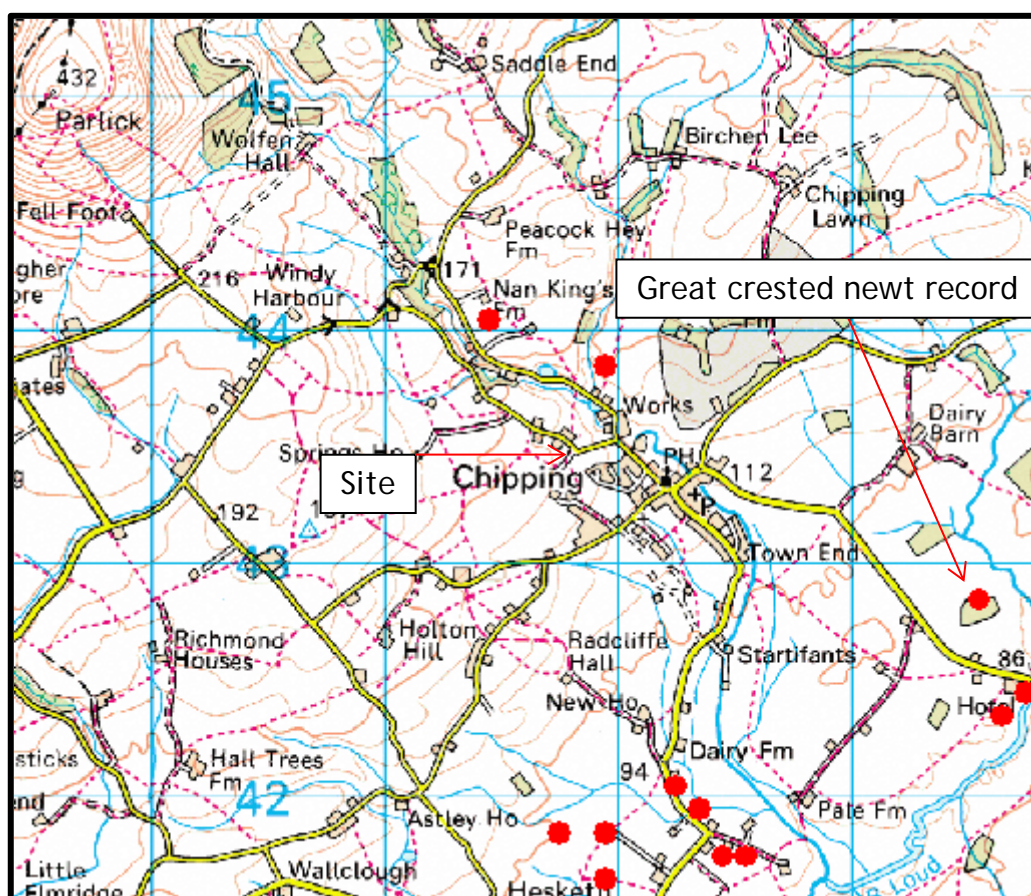


Figure 4 - Amphibian records 2km buffer

5.3.1 There is no standing water on site, though there is a mill pond c.150m to the North of the site (Figure 5). Whilst full access to this pond could not be gained, it could be viewed from the road and an HSI score was compiled.



Figure 5 - Water-bodies

5.3.2 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 EPS Licensing process was used to determine the suitability of the mill pond for Great Crested Newts. The HSI was developed as a tool to aid fieldworkers to give ponds and their surrounding habitat a numerical score in terms of their suitability for great crested newts. See Table 3.

Pond ref	Pond 1
SI1 - Location	0.5
SI2 - Pond area	
SI3 - Pond drying	0.9
SI4 - Water quality	0.33
SI4 - Shade	0.8
SI6 - Fowl	0.01
SI7 - Fish	0.01
SI8 - Ponds	0.4
SI9 - Terr'l habitat	0.67
SI10 - Macrophytes	0.3
HSI	0.21

Table 3 - Results of Habitat Suitability Index

5.3.3 The pond area was measured at approximately 3000m<sup>2</sup> and so this criteria has been omitted from the assessment. Oldham et al state:

‘For ponds larger than 2000m<sup>2</sup> omit this factor from the HSI calculation (as there are no data for such large ponds)’

5.3.4 Within the Natural England Method Statement application form for Great Crested Newt Licences, guidance states the following approach (Natural England, 2008):

‘If a pond has a very low HSI score (say <0.5) then there would typically be a minimal chance of great crested newt presence. Hence, with due care and in limited circumstances, the HSI might be used in the absence of newt survey to help conclude that an offence is highly unlikely and therefore work could proceed in that area without a licence. This application of the HSI should only be used where the predicted impacts - were newts to be present - would be low (eg, development at least 100m from pond, permanent habitat loss <0.5ha or temporary habitat loss <5ha). The developer and consultant should realise that there would still be a risk of committing an offence, but it would typically be so low as to be negligible. Obviously, note that if HSI >0.5, this is not confirmation of newt presence; a newt survey would be required to confirm this’.

5.3.5 The pond is situated approximately 150m from the nearest point of the proposed site boundary. The HSI score of 0.21 is classified as being average for Great crested newts. The pond is known to support large numbers of waterfowl and fish, which would exert a strong predatory pressure on amphibians. We judge that this would reduce the suitability of this pond to support Great crested newts.

5.3.6 Chipping Brook also forms a significant barrier to the dispersal of amphibians between the mill pond and the site.

5.3.7 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.

## **5.4 Badger**

5.4.1 No records of badgers occur within 2km of the site, and no setts or indication of badger feeding was found on site.

5.4.2 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.

5.4.3 Precautionary mitigation is considered appropriate during construction. The landscaping scheme should also include species such as Apple or other fruit trees which would provide a food source in winter.

5.4.4 The design of garden fences/ walls should be considerate to the passage of badgers.

## 5.5 Bats

5.5.1 There are 4 records of bats within 2km of the site (Figure 6). These pertain to Daubenton's bat, *Myotis sp.* and *Pipistrellus sp.*

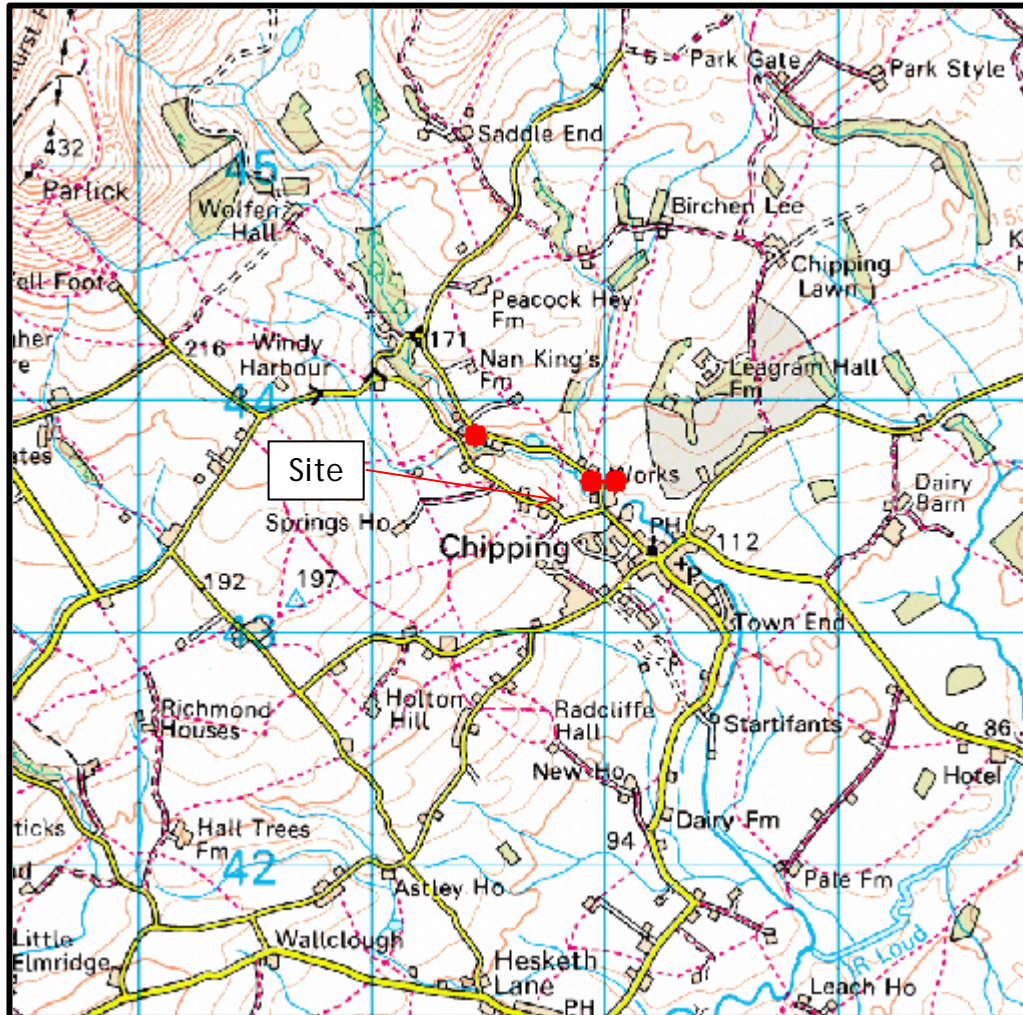


Figure 6 - Bat records 2km buffer

5.5.2 The foraging habitat at the site is poor for bat species being open and exposed. The poor semi-improved grassland offers negligible foraging opportunities for bats.

5.5.3 The semi-mature trees and the small stream on the site offer the best foraging habitat for bats on the site as the remainder of it comprises open and exposed pasture. Whilst these areas of the site are the most structurally diverse, they are not considered exceptional in the local area and are relatively isolated from other foraging areas with poor connectivity. More extensive areas of medium and high quality habitat occur locally, including the gardens, woodland along Chipping Brook and existing residential dwellings adjacent (Figure 7).

5.5.4 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.

- 5.5.5 Trees around the site perimeter were also assessed in accordance with BCT (2012) and assigned a risk category. All of the trees on site were category 3 (negligible) risk (Figure 8). 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 BCT (2012) and the requirement for mitigation for each tree category are shown on Figure 9.
- 5.5.6 To confirm the site is not used by significant numbers of bats, a walked transect of the site for a period of 1.45hrs was undertaken by two surveyors on the 11<sup>th</sup> August 2014 and again on the 20<sup>th</sup> August 2014 by one surveyor. The surveyors used EM3 time expansion bat detectors fitted with a GPS data logger. On the first survey there was light wind, 100% cloud cover and temperatures were 17 degrees Celsius. On the second survey there was no wind, 20% cloud cover and temperature were 14 degrees Celsius.
- 5.5.7 These transects recorded low numbers of Common pipistrelle and Daubenton's bats foraging along the stream and road to the South of the site, Common pipistrelle bats commuting over the North-west corner of the site from the residential houses adjacent, and a single Soprano pipistrelle bat commuting along the Eastern boundary of the site in a Northerly direction. There was no activity within the core of the site.
- 5.5.8 The results of the activity survey (Figure 9) confirm our assessment of the potential for the habitat at the site to support bats. We consider bat species are highly unlikely to rely on the site for feeding but may occur in the local area. Roosting by bats will not occur on the site.
- 5.5.9 Precautionary mitigation would be appropriate in respect of ensuring the foraging habitat on site is at least improved for use by bats during development.



- Key**
- Site Boundary
  - High Value
  - Medium Value
  - Low Value



Figure 7  
Results\* of Extended  
Bat Habitat Survey

SCALE: NTS

REV 01

\*Habitats outside the site boundary are indicative only and have been mapped from within the site boundary or from publicly accessible land





- Key**
- - - Site Boundary
  - Transect Route
  - Common Pipistrelle
  - Soprano Pipistrelle
  - Daubenton's Bat



Figure 8  
Results\* of  
Bat Activity Survey

SCALE: NTS | REV 01

\*Habitats outside the site boundary are indicative only and have been mapped from within the site boundary or from publicly accessible land

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
<b>Known or confirmed roost</b>	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.
<b>Category 1*</b> 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.
<b>Category 1</b> Trees with definite bat potential, supporting fewer suitable features than 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 is 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
<b>Category 2</b> 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.
<b>Category 3</b> 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 9 - Tree risk categories

## 5.6 Birds

5.6.1 There are 336 records of birds within 2km of the site (Figure 10).

5.6.2 The trees on the periphery of the site offer potential habitat for feeding and nesting birds. The poor semi-improved grassland has a low potential for use by nesting birds as the grassland is uniform and exposed. Trampling risks are also likely to be very high within this area of the site.

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

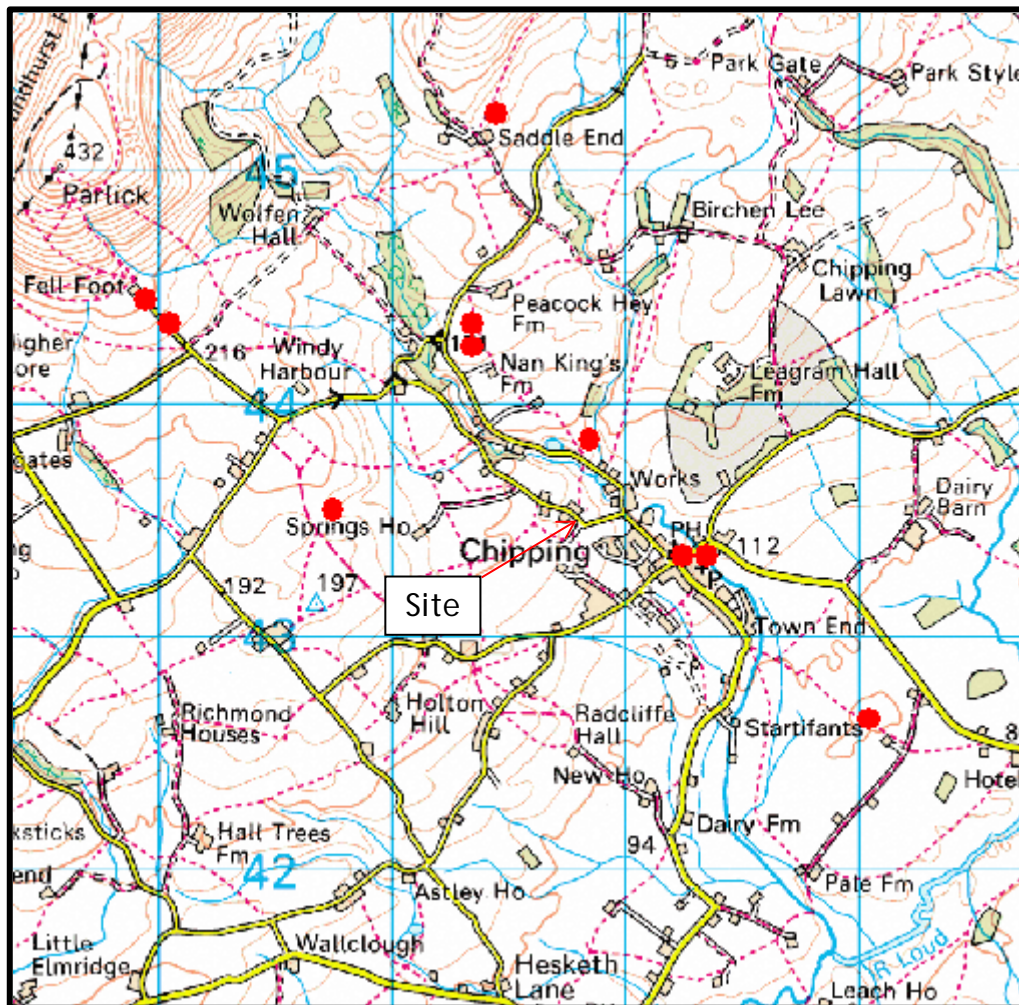


Figure 10 - Bird records 2km buffer

5.6.1 Potential nest sites were located within the core development area but the surveys were undertaken at a time of year when nesting had been completed. A risk assessment of the site in respect of its future potential for and value to nesting birds could however be adequately made.

5.6.2 The habitat on site is not considered to be of anything more than of local significance, habitats present are well represented in the local area. The impact on nesting birds is therefore considered likely to be minor.

5.6.3 Precautionary mitigation would be appropriate in respect of construction activities and compensation for lost nesting and foraging opportunities will be required.

## 5.7 **Brown Hare**

5.7.1 Brown Hare are a UK BAP priority species. There are four records of Brown Hares within 2km of the site (Figure 11).

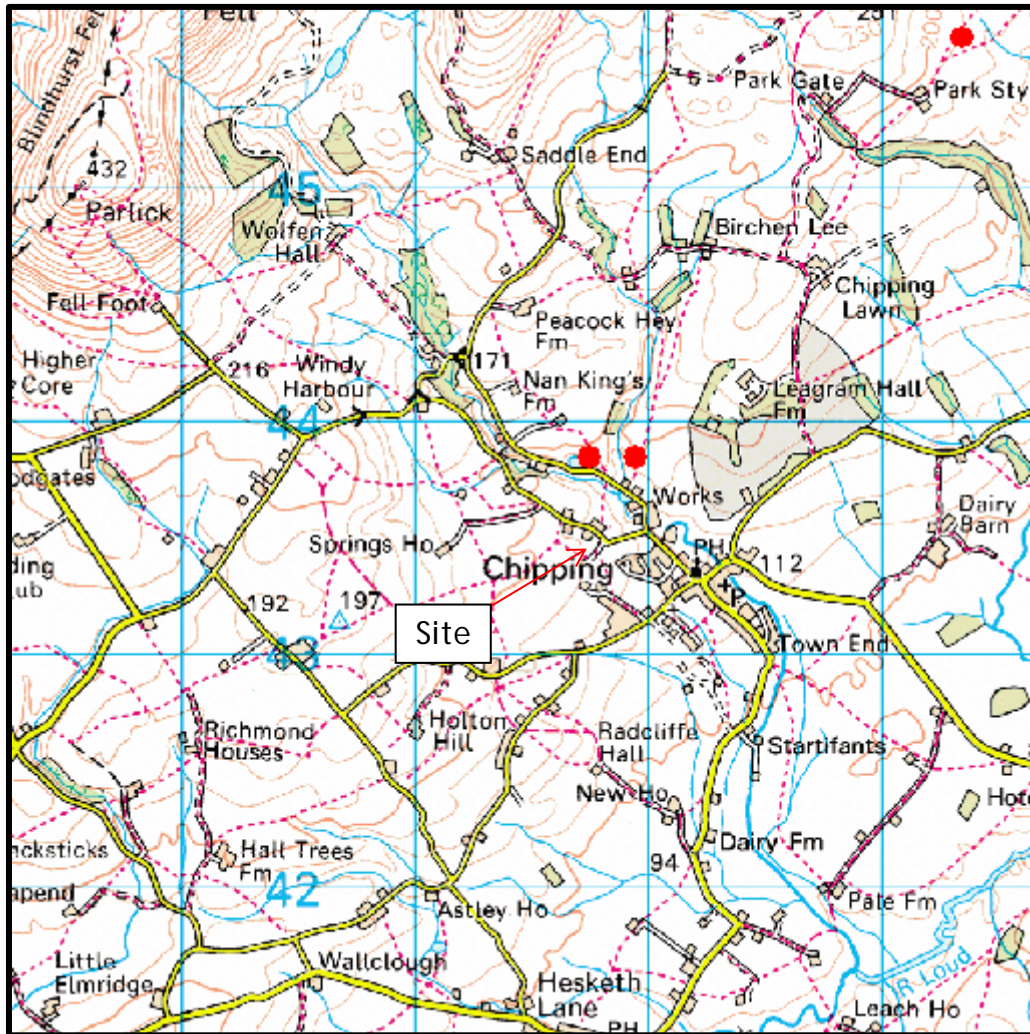


Figure 11 - *Brown hare records 2km buffer*

5.7.2 No indication of Brown Hares was recorded on the site.

5.7.3 The value of the site for this species is likely to be limited due to its open and exposed nature and regular human presence.

5.7.4 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.

## 5.8 **Invertebrates**

5.8.1 1407 invertebrates have been recorded within 2km of the site.

- 5.8.2 No deadwood or vegetation on site was recorded which would provide an important resource for invertebrates in the local area.
- 5.8.3 Trees on the site boundaries contain comparatively little rotten wood in their canopies.
- 5.8.4 The significance of the site to invertebrates is likely to be limited in the local context although the habitat on site will support invertebrate species. Mitigation can be incorporated into the design and landscaping scheme with the careful selection of plant species and substrates for the garden areas.

## **5.9 Otter**

- 5.9.1 There are no records for Otters within 2km of the site.
- 5.9.2 No indication of the presence or past use of the site by Otter was found. The small watercourse to the South is considered unable to support fish. There are no water-bodies in proximity to the site which would be attractive to Amphibians. This species is considered as being absent from the site.
- 5.9.3 If Otters were present along Chipping Brook, the steep gradient leading down to it from the site is considered likely to deter Otters from commuting between the two.
- 5.9.4 Whilst the site may provide foraging and refuge opportunities, and Chipping Brook 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.

## **5.10 Reptiles**

- 5.10.1 There are no records for reptiles within 2km of the site.
- 5.10.2 The majority of the site has a very low value to reptiles being devoid of significant ground cover. There are no areas of the core development area which would be particularly favourable to reptiles.
- 5.10.3 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.

## **5.11 Water vole**

- 5.11.1 There are no records for Water voles within 2km of the site.
- 5.11.2 There is a small watercourse running along the Southern boundary of the site. This is culverted to the West and emerges within the site, before running Eastwards.
- 5.11.3 At the time of the survey this contained very little water and had no discernable current, despite frequently rainfall in the preceding days.

The results of the survey are shown in Table 4.

Stream	Presence	Suitability
S1	No signs observed	Low potential - Very low water depth and culverted immediately to the West.
<b>Table 4 - Presence of Water Vole and Habitat Suitability of stream</b>		

5.11.4 No signs of Water voles, such as droppings, feeding piles or footprints were present along the watercourse.

5.11.5 We consider this species is likely to be absent from the site. Precautionary mitigation would be appropriate.

## **5.12 Other**

5.12.1 The site may be crossed by species such as Fox (*Vulpes vulpes*) and Rabbit (*Oryctolagus cuniculus*) are known to occur locally.

## **5.13 Statutory and Non-Statutory Sites**

### Direct Impacts:

5.13.1 There are no statutory or non-statutory designated 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.

5.13.2 The habitats on site do not represent or are linked to those found in Clark House Farm Pasture BHS which abuts the site to the North.

### Indirect Impacts:

5.13.3 There are no statutory or non-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. MITIGATION/RECOMMENDATIONS**

### **6.1 Compensatory planting and habitat enhancement**

6.1.1 The roots of trees on the site and its boundaries should be adequately protected during work in accordance with industry standards. Semi-mature trees should as far as possible be retained in the scheme.

6.1.2 The landscaping scheme should utilise plants which are native and wildlife friendly. In particular night flowering species would be beneficial to bats.

- 6.1.3 A buffer zone of 5m from the Northern site boundary should be established to ensure that there are no adverse effects on Clark House Farm Pasture BHS, and best practice guidance with regard to dust and pollution control should be adhered to.
- 6.1.4 Wildflower seed could be used to plant verges to enhance the ecological value of the site and continuity between the site and the wider area.
- 6.1.5 Bat roosting features should be incorporated into the buildings or tree mounted bat boxes could be used.

## **6.2 Amphibians**

- 6.2.1 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.
- 6.2.2 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.
  - 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.

## **6.3 Badger**

- 6.3.1 Badger are not known to, but may 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.

## **6.4 Bats**

- 6.4.1 Work at night should be restricted, new planting within the site should enhance structural diversity and light spill onto the railway line should be minimised.
- 6.4.2 New roosting provision for crevice dwelling bats could be incorporated into the buildings on site or bat boxes could be erected in retained trees.
- 6.4.3 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.

## **6.5 Birds**

- 6.5.1 Nesting by birds within the development area is considered unlikely to occur. Birds may nest within trees on the periphery of the site.
- 6.5.2 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.
- 6.5.3 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.
- 6.5.4 Artificial bird nesting sites for Swallow could be incorporated into the new buildings under the eaves in suitable locations.
- 6.5.5 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.

## **6.6 Brown Hares**

- 6.6.1 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.
- 6.6.2 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.

## **6.7 Invertebrates**



- 6.7.1 Landscaping should include native or wildlife friendly species including night flowering plants.
- 6.7.2 Contaminants should not be allowed to enter the watercourse to the South 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.
- 6.7.3 Any new retaining walls along this watercourse should be constructed during periods of low water so that contaminants from cements used during construction are less likely to be washed downstream.

## **6.8 Otter**

- 6.8.1 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.
- 6.8.2 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.

## **6.9 Reptiles**

- 6.9.1 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.
- 6.9.2 The points in respect of not leaving open trenches without means of escape detailed for Badgers are also applicable to these species.

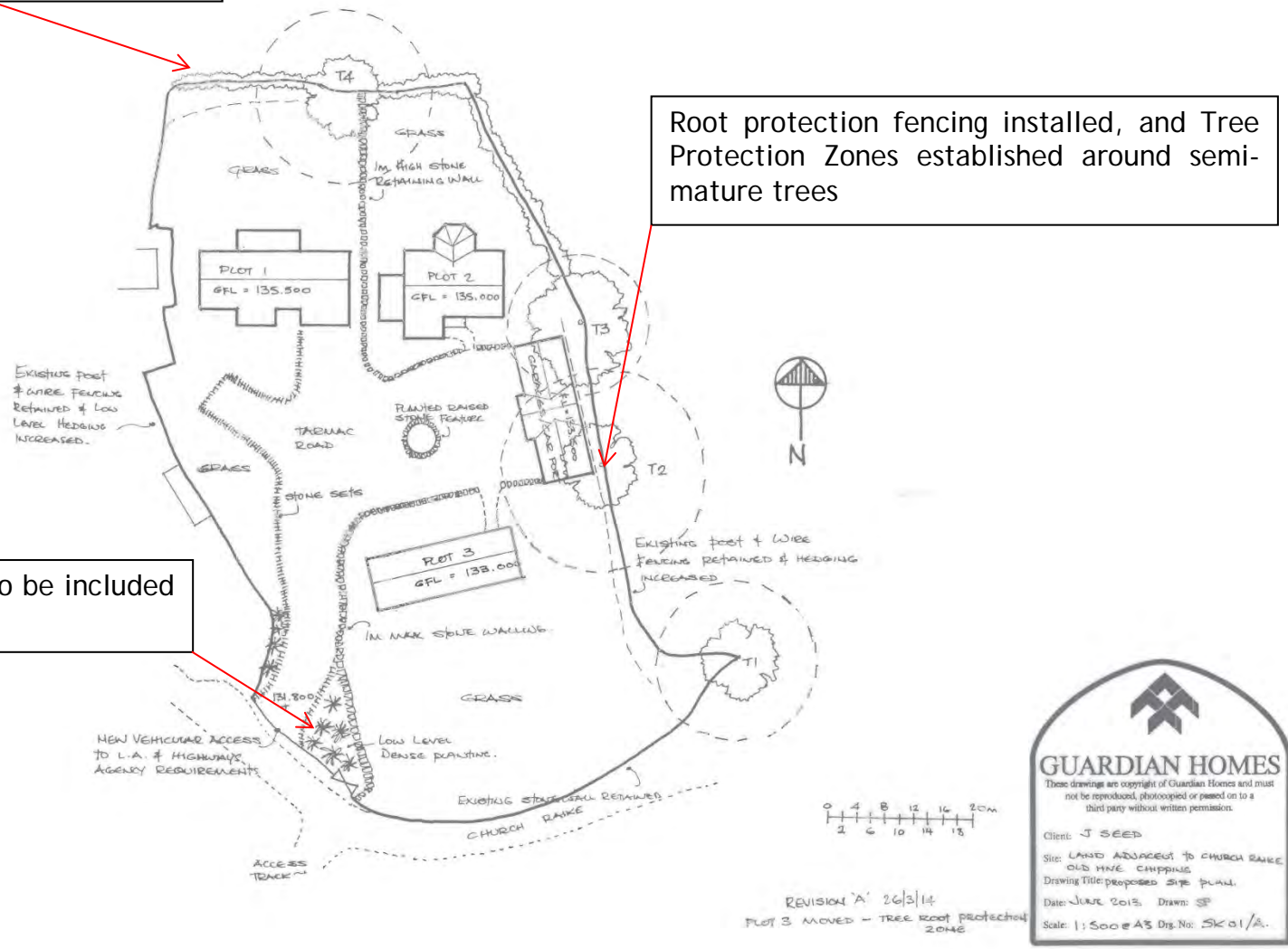
## **6.10 Water vole**

- 6.10.1 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.

New vegetation planting along site boundary to buffer BHS

Root protection fencing installed, and Tree Protection Zones established around semi-mature trees

Wildlife friendly plant species to be included in landscaping scheme



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Client: J SEED  
Site: LAND ADJACENT TO CHURCH RAKE  
OLD HIRE CAMPING  
Drawing Title: PROPOSED SITE PLAN  
Date: JUNE 2013. Drawn: SP  
Scale: 1:500 @ A3 Dwg. No: SK 01/A.

Figure 12 - Proposed site plan

## 7. CONCLUSION

- 7.1.1 Ecological surveys, site appraisals and impact assessments were carried out with respect to land comprising an open field off Old Hive, Chipping, Lancashire. It is proposed new houses will be constructed on the site.
- 7.1.2 Bats are known to occur in the local area, there was however 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.
- 7.1.3 The vegetation to be cleared has a low ecological significance in the local area; the semi-mature trees on the site boundary are to be retained and protected during works. The adjacent BHS will not be affected by the proposal.
- 7.1.4 The protection of trees on the site boundary and landscaping will promote structural diversity in both the canopy and at ground level and will encourage a wider variety of wildlife to use the site than already occurs.
- 7.1.5 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.
- 7.1.6 I certify this report has been compiled in accordance with the code of professional conduct for the Institute of Ecology and Environmental Management and The Royal Institute of Chartered Surveyors and reflects my objective opinion of the facts found in relation to the instruction received and information available based upon the methodology, assumptions and constraints detailed within this report.

## 8. APPENDIX

# Lancashire County Heritage Sites

## Biological Heritage Site

Lumpy Pasture



**Site Boundary**

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Scale 1:2,470

Site approved

Map 1 of 1

Boundary revised

Date of Map 14/07/14



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# Lancashire County Heritage Sites

## Biological Heritage Site

Clark House Farm Pasture



**Site Boundary**

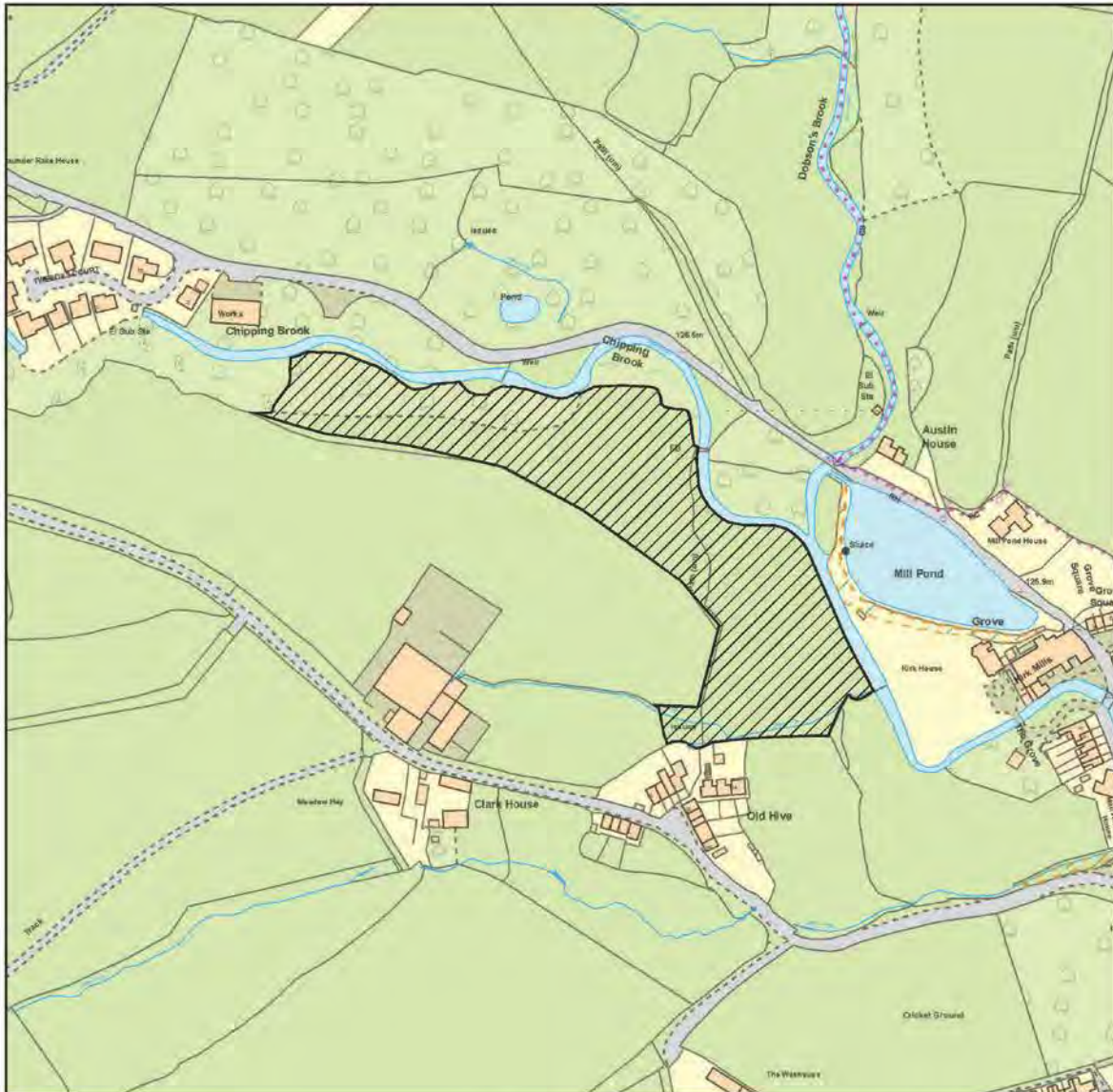
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# Lancashire County Heritage Sites

## Biological Heritage Site

Buckbanks Wood

 **Site Boundary**

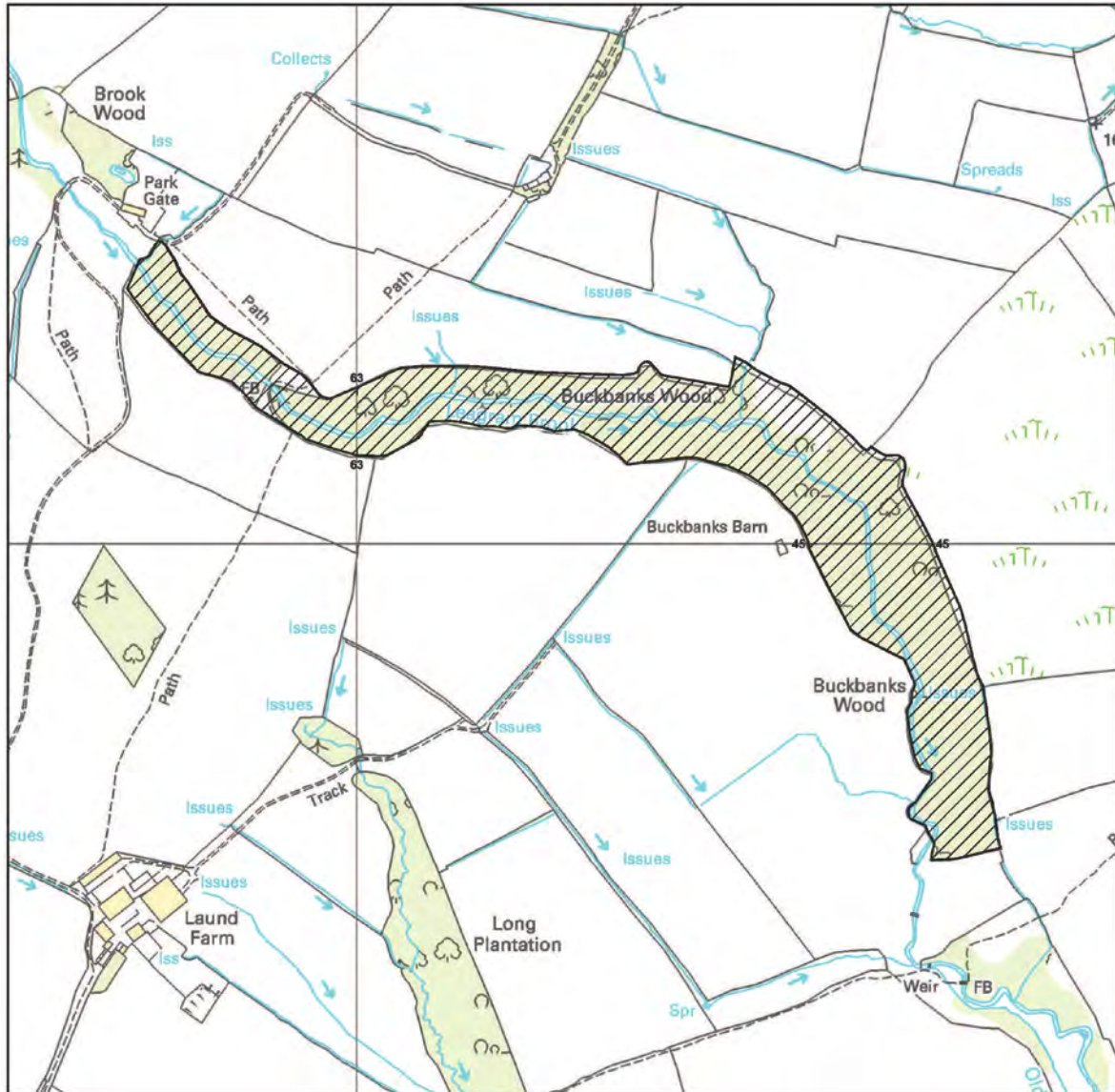
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Map 1 of 1

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# Lancashire County Heritage Sites

## Biological Heritage Site

Nan King's Grasslands



**Site Boundary**

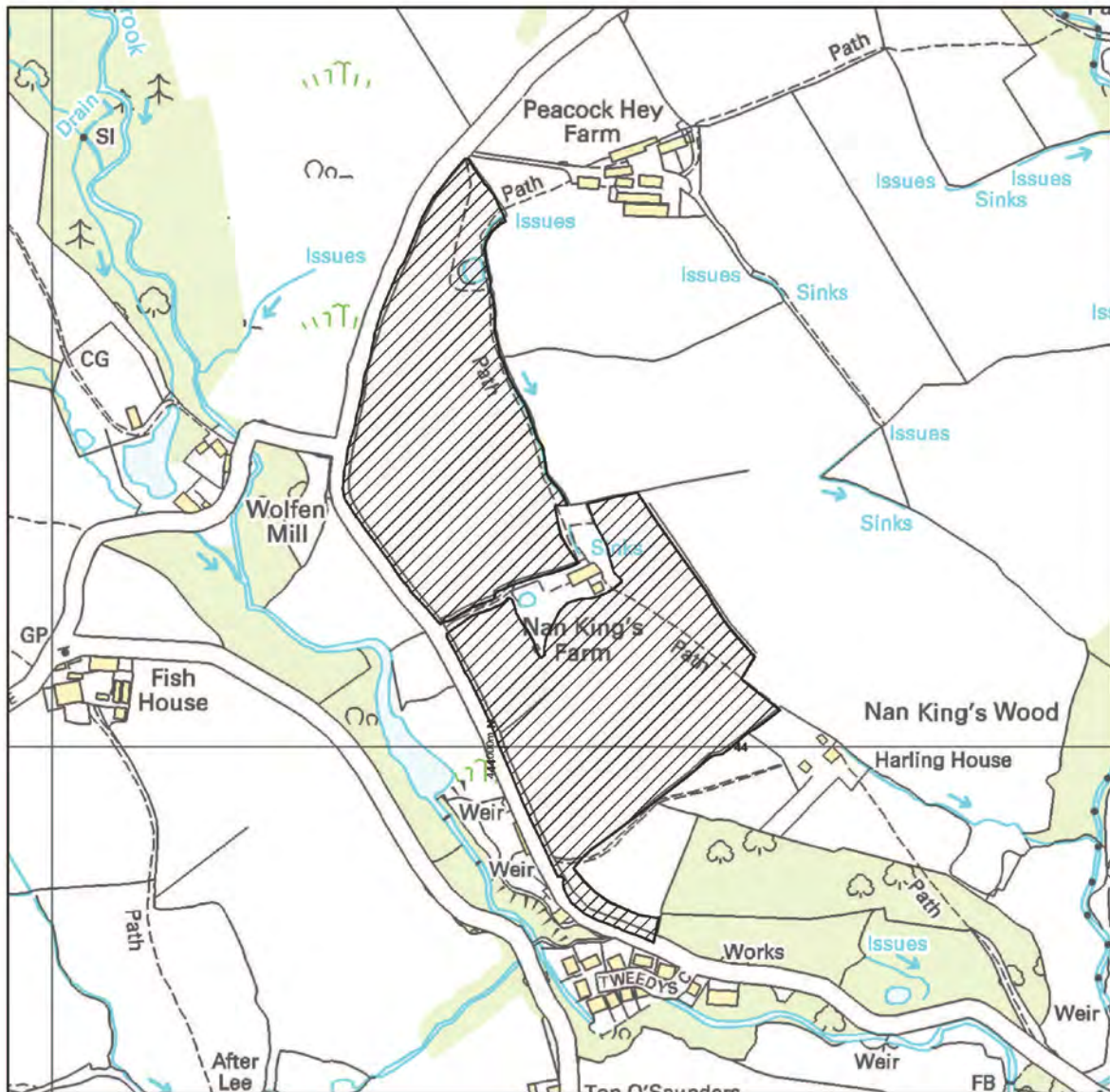
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Map 1 of 1

Boundary revised

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# Lancashire County Heritage Sites

## Biological Heritage Site

Dobson's Brook Wood



**Site Boundary**

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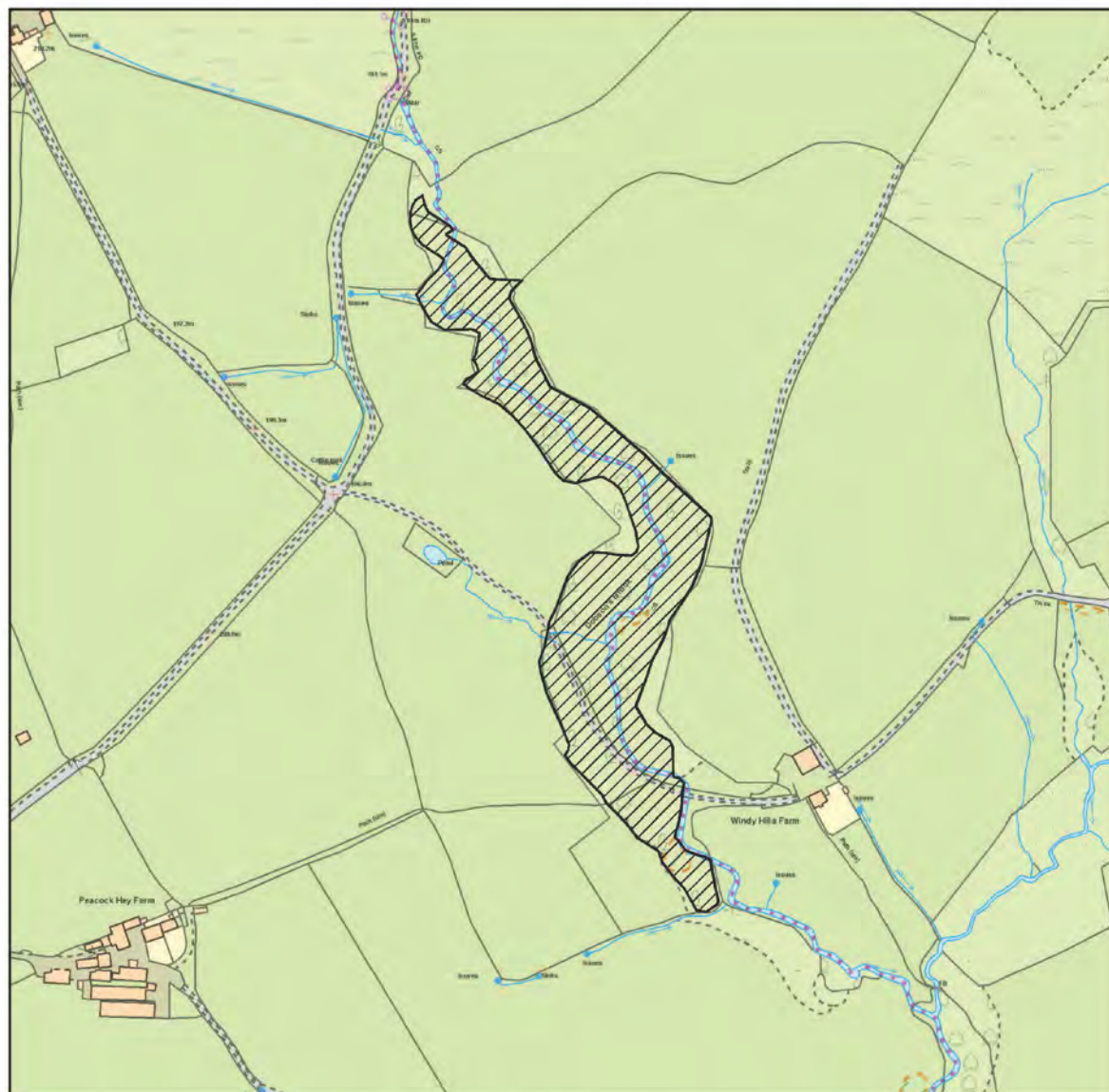
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Boundary revised

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# Lancashire County Heritage Sites

## Biological Heritage Site

Little Bowland Road-Throstle Nest



**Site Boundary**

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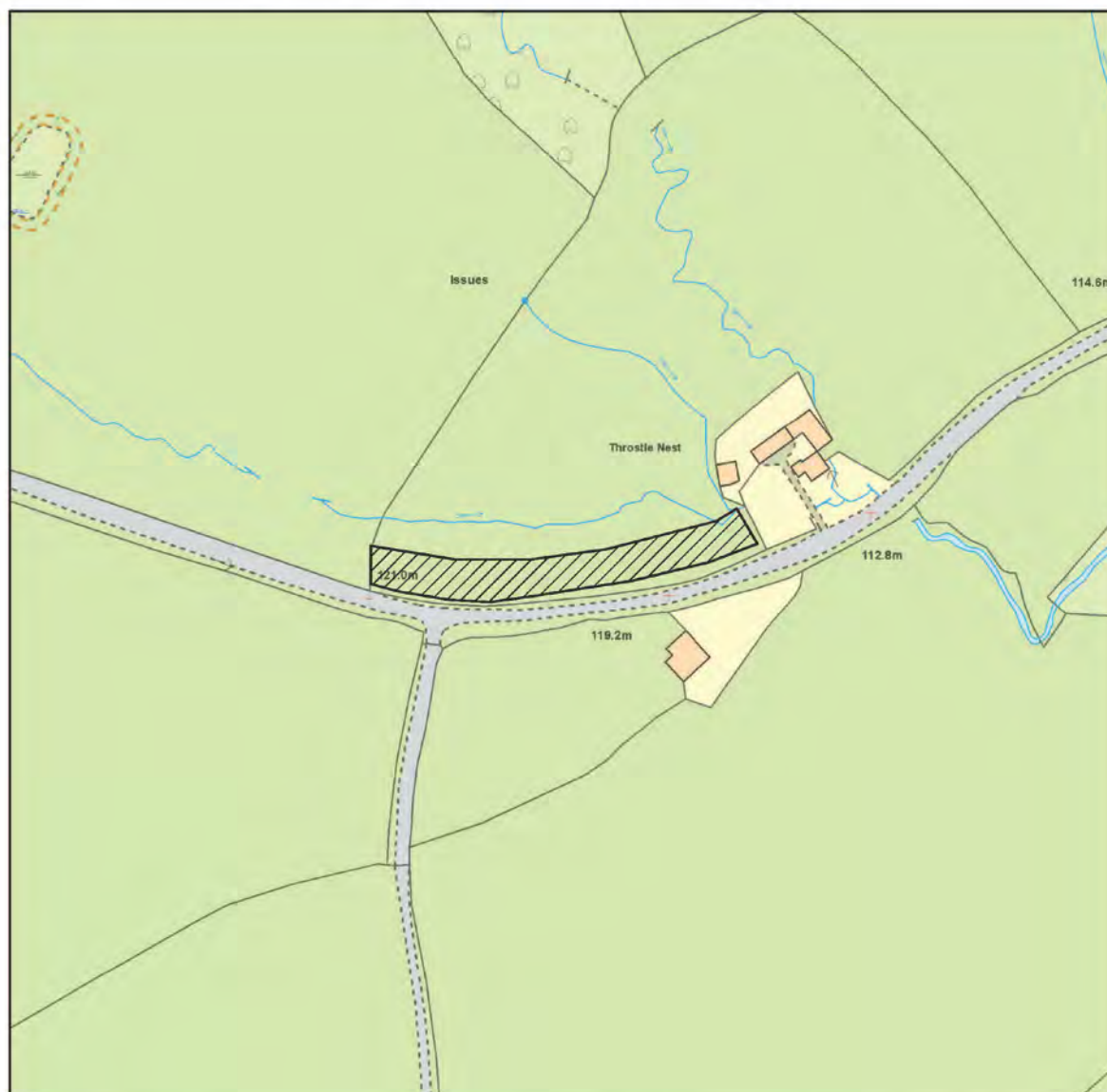
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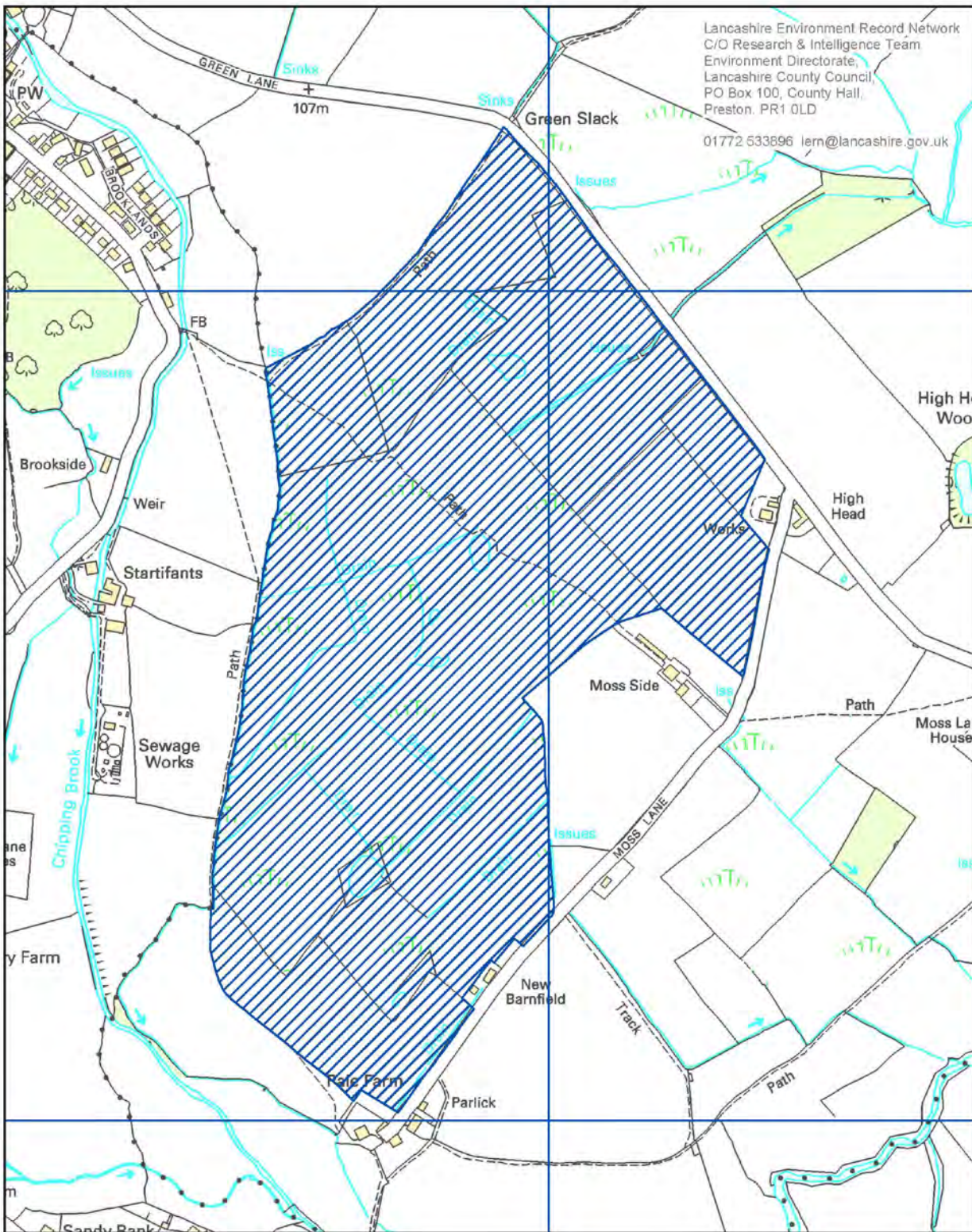
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### Legend

 Chipping Moss BHS64SW11



1:6,000



Date: 14/07/2014