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Tel: 015395 61894
Mobile: 07812 081320
Email: info@envtech.co.uk
Web: www.envtech.co.uk
Envirotech NW Ltd

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

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 Chartered Institute of Ecology and Environmental Management. (www.cieem.org.uk) and the Royal Institution of Chartered Surveyors (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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1. INTRODUCTION

1.1 *Background*

- 1.1.1 In June 2015 Envirotech NW Ltd were commissioned by Rocket Architects to carry out an Ecological Appraisal of land at Highfield Farm, Forton, Lancashire, central grid reference SD 49070 51728. 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 demolition of dilapidated outbuildings and erection of a new agricultural building.

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 (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) on terrestrial habitat and aquatic species such as floating pennywort (*Hydrocotyle ranunculoides*), water Hyacinth (*Eichhornia crassipes*) and New Zealand pygmyweed (*Crassula helmsii*).
- 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 18th June 2015 by Chris Arthur BSc (Hons), MSc, Grad CIEEM and subsequently on the 24th July 2015 by Chris Arthur and Jack Sykes BSc (Hons), MCIEEM.
- 2.3.2 During the visits, weather conditions were suitable for the survey types undertaken being warm and dry in mid summer.
- 2.3.3 Full access to the site was possible. The habitats present could be adequately assessed at the time of year the surveys were undertaken.

3. PHASE 1 SURVEY RESULTS

3.1 *Habitat Results*

- 3.1.1 The site comprises a collected of dilapidated outbuildings, which are to be demolished, within a field of poor semi-improved grassland. Also within the boundary of site ownership, but unaffected by the proposal, is a residential dwelling and its associated garden, two ponds, a parcel of woodland, scattered broadleaf and coniferous trees, and several hedgerows.
- 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	Buildings	Several small outbuildings constructed of timber and metal corrugate are to be demolished under the proposal. These are single storey with flat metal corrugate roofs and are in a state of disrepair.
BTN2	Buildings	To the West is a residential dwelling. This is not subject to the proposals.
BTN3	Poor semi-improved grassland	<p>The buildings to be demolished are located in a field of poor semi-improved grassland. Species diversity is low and comprises common agricultural species; Yorkshire fog (<i>Holcus lanatus</i>), meadow foxtail (<i>Alopecurus pratensis</i>), Timothy grass (<i>Phleum pratense</i>), perennial rye grass (<i>Lolium perenne</i>), creeping buttercup (<i>Ranunculus repens</i>), white clover (<i>Trifolium repens</i>), red clover (<i>T. pratense</i>), creeping thistle (<i>Cirsium arvense</i>), greater plantain (<i>Plantago major</i>), chickweed (<i>Stellaria media</i>), sorrel (<i>Rumex acetosella</i>), dandelion (<i>Taraxacum officinale</i>), common mouse-ear (<i>Cerastium fontanum</i>) and heath milkwort (<i>Polygala serpyllifolia</i>).</p> <p>There are other fields within the area of site ownership, all of which are of similar character and species composition.</p>
BTN4	Broadleaf woodland - semi-natural	To the South of the development area is a small parcel of broadleaf woodland composed of silver birch (<i>Betula pendula</i>), oak (<i>Quercus</i> sp.), horse chestnut (<i>Aesculus hippocastanum</i>), sycamore (<i>Acer pseudoplatanus</i>), crack willow (<i>Salix fragilis</i>), hawthorn (<i>Crataegus monogyna</i>) and blackthorn (<i>Prunus spinosa</i>), with abundant ox-eye daisy (<i>Leucanthemum vulgare</i>).
BTN5	Standing water	Within the woodland is a large and heavily shaded pond.
BTN6	Introduced shrub	The adjacent dwelling has an associated garden comprises a small amenity lawn and extensive ornamental planting of introduced shrubs.
BTN7	Standing water	A very small pond is also present within the garden, which features vertical stone banks.
BTN8	Intact hedge	Hedges bound the site and compartment the larger area of ownership. These will not be impacted by the proposal.

BTN9	Other tall herb/fern - ruderal	Immediately to the West of the outbuildings is a small area of tall ruderal vegetation composed of hogweed (<i>Heracleum sphondylium</i>), smooth hawk's beard (<i>Crepis capillaris</i>), red campion (<i>Silene dioica</i>), poppy (<i>Papaver rhoeas</i>), rape (<i>Brassica napas</i>) and grassland species of BTN3.
BTN10	Scattered/parkland broadleaf trees	Several small apple (<i>Malus domestica</i>) trees stand within the parcel of tall ruderal vegetation.
BTN11	Scattered/parkland coniferous trees	A large spruce (<i>Picea</i> sp.) tree stands on the periphery of the garden.
FTN1	Bats/birds	The buildings to be demolished are assessed as offering negligible opportunities for roosting bats, though they are used by nesting wrens (<i>Troglodytes troglodytes</i>) and possibly other passerines.
FTN2	Amphibians	The potential of the ponds on site to support great crested newts is considered to be very low. This is addressed in a separate report found in Appendix 1.
FTN3	Birds	A barn owl box has been installed on a tree to the West of the development area, but this does not appear to be used.

Table 1 - Details of Botanical and Faunal Target Notes



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



Several dilapidated outbuildings are to be demolished (BTN1). These are all constructed of timber and metal corrugate, with flat metal roofs.

They outbuildings are very poorly sealed.



There are no enclosed voids and the materials present make the buildings of negligible potential to be used by bats.

Wrens were, however, found to be nesting within (FTN1).



The buildings are located within a large field of poor semi-improved grassland (BTN3).



To the South of the development area is a parcel of broadleaf woodland (BTN4) which surrounds a large pond (BTN5).

The pond is highly unlikely to be used by great crested newts (FTN2). Full details of this assessment can be found in the Appendix.



A small area of tall ruderal vegetation is to the West of the outbuildings (BTN9). This also contains several small apple trees (BTN10).



On the edge of the residential garden is a large spruce tree (BTN11), on top of which sits an unused barn owl box (FTN3).

Table 2 - *Photographs*

4. SPECIES SURVEY METHODOLOGY

4.1 *Amphibian*

- 4.1.1 Great crested newts (*Triturus cristatus*) 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 potential of the site to be used by great crested newts has been considered in a separate report which is reproduced in Appendix 2.

4.2 *Badger*

- 4.2.1 Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act (1992). This legislation arises from animal welfare issues (rather than on the basis of nature conservation grounds) and 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 hedgerows on the peripheries but the main site comprises an area which is open, exposed and structurally poor, it has a very low potential for use by bats.
- 4.3.5 Trees and structures on and within the survey area boundary were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees and an internal and external assessment of buildings within the site, and an assessment of their potential to be used by bats by licensed surveyors.
- 4.3.6 Due to the presence of small outbuildings within the site, a single bat activity survey was deemed necessary. The survey was based upon standard guidelines Hundt (2012), NCC (1987) and Mitchell-Jones (2004) and was undertaken in suitable weather conditions by suitably qualified and experienced personnel.

4.4 Birds

- 4.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act of 1981 when building a nest, rearing young or sitting on eggs. Some bird species, such as barn owl (*Tyto alba*), are protected when near an active nest site. Several birds are listed as 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'. All birds displaying breeding behavior were recorded.

4.5 *Brown Hare*

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

4.6 *Invertebrates*

- 4.6.1 A general assessment was made of the study area's suitability for supporting invertebrates during the 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 *Reptiles*

- 4.7.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act of 1981. It is an offence to intentionally kill, injure, sell or advertise to sell any of the six native species.
- 4.7.2 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.
- 4.7.3 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.

4.8 Survey limitations

- 4.8.1 Due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site. Bats were active at the time of the survey.
- 4.8.2 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.
- 4.8.3 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. There are however records of protected or notable species within 2km. These are discussed in the relevant sections below.
- 5.1.2 The nearest non-statutory designated site is the Lancaster Canal Biological Heritage Site (BHS), c.500m to the West (Figure 2).
- 5.1.3 There are no statutory designated sites within 2km. The nearest such site is the Lune Estuary Site of Special Scientific Interest (SSSI), c.3800m to the West (Figure 3). This also forms part of the Morecambe Bay Special Protection Area (SPA), Special Conservation Area (SAC) and RAMSAR site.
- 5.1.4 The distance of the development area from these statutory and non-statutory protected sites is such that there should be no direct or indirect impacts upon them.

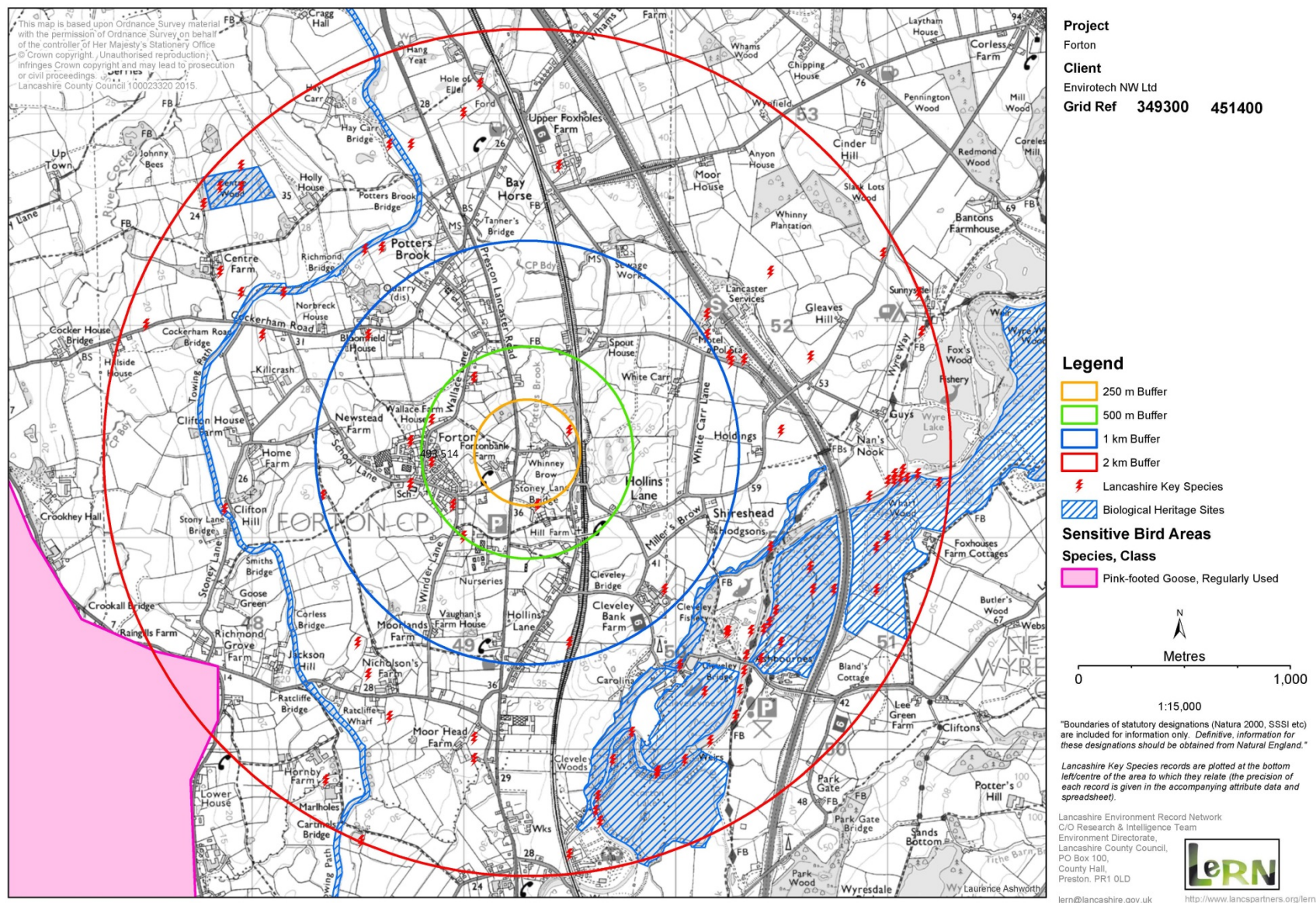


Figure 2 - Notable species and non-statutory designated sites 2km buffer



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, the species are all indicative of regular grazing and disturbance, this habitat does not constitute a BAP habitat.
- 5.2.3 There are several hedgerows within the boundary of the site ownership, but these will be unaffected by the proposed demolition of outbuildings and replacement with a new structure.
- 5.2.4 Trees within the site boundary comprise small apples trees adjacent to the outbuildings. If these trees 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.
- 5.2.5 Also within the site are silver birch, oak, blackthorn, ash, horse chestnut, sycamore and willow species in the parcel of woodland to the South. These trees should be retained and protected during development work in line with industry standards.
- 5.2.6 There is no evidence of Japanese knotweed, giant hogweed or Himalayan balsam on the site. No other invasive or notable weed species listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) was identified within the site or adjacent land.

5.3 Badger

- 5.3.1 Six records of badgers occur within 2km of the site (Figure 4).
- 5.3.2 Badger setts do not occur on site or within 30m of its boundaries, and there were no indications of badger feeding found on site.
- 5.3.3 The proposed development will not impact on any existing badger runs or setts. The porosity of the surrounding fields to the passage of badgers will not be affected.
- 5.3.4 Precautionary mitigation is considered appropriate during construction.

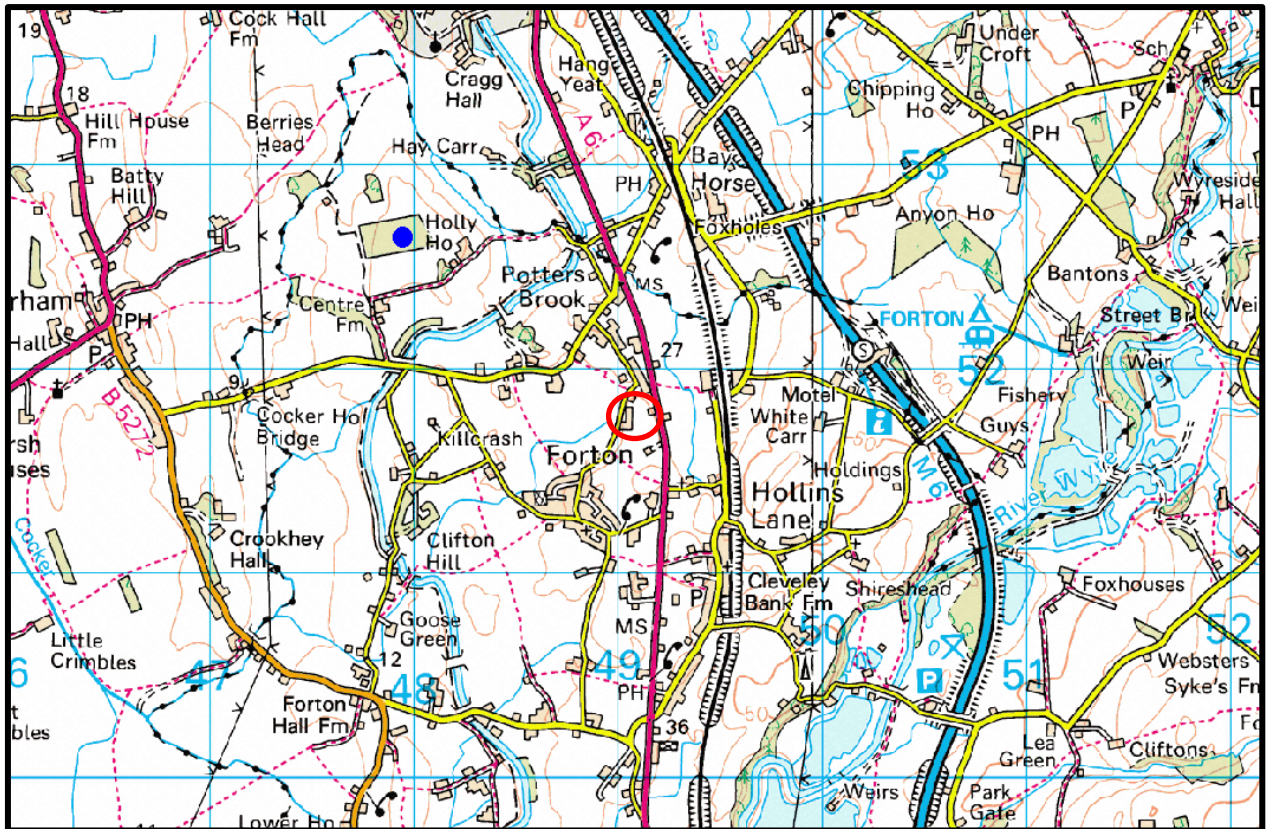


Figure 4 - Badger records shown in blue, site circled in red

5.4 Bats

- 5.4.1 There are 122 records of seven species of bat within 2km of the site (Figure 5). Species known to occur locally are common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), noctule (*Nyctalus noctula*), whiskered (*Myotis mystacinus*), Brandt's (*M. brandtii*), Daubenton's (*M. daubentonii*), brown long-eared (*Plecotus auritus*) bats.
- 5.4.2 The foraging habitat at the site is of low-moderate quality for bat species. The poor semi-improved grassland offers negligible foraging opportunities, but the pond and small area of woodland are of much greater potential. The hedge lines leading off-site provide connectivity with the wider landscape.
- 5.4.3 The foraging opportunities locally are similarly sparse as the landscape is dominated by open agricultural pasture, though hedgerows forming field boundaries do provide fragments of higher quality habitat and linkage through the area (Figure 6).
- 5.4.4 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.

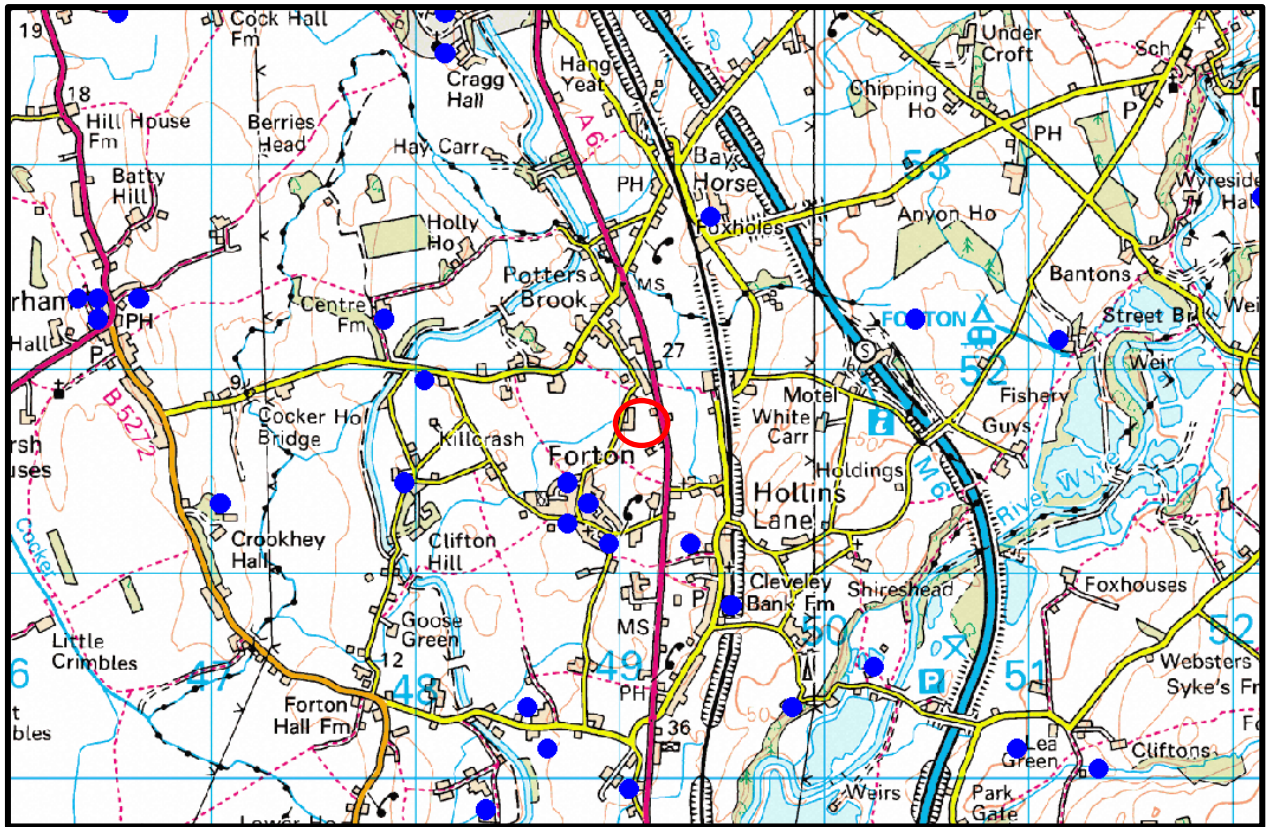


Figure 5 - Bat records shown in blue, site circled in red

- 5.4.5 Trees around the site perimeter were also assessed in accordance with BCT (2012) and assigned a risk category. All of the trees close to the development area were category 3 (negligible risk). No indications of roosting or highly suitable roost sites were located within the trees.
- 5.4.6 Several of the trees in the parcel of woodland around the pond contain features potentially suitable for roosting bats and are assessed as being category 1 (high risk) or category 2 (medium risk). These trees are sufficiently far from the location of the development area that there will be no adverse effects from the proposal. 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 8.
- 5.4.7 The dilapidated buildings to be cleared are all low level and constructed of timber and metal corrugate. The roofs are flat, metal corrugate sheets. All of the buildings are interconnected and very poorly sealed, with permanently open doorways on several elevations. These buildings are considered to offer negligible potential to be used by bats, due to their size and the materials employed in their construction. No evidence of use by bats, such as droppings or urine staining, could be found anywhere on the building, and no high quality potential roost sites were identified on the building.
- 5.4.8 The dusk activity survey recorded no bats emerging from these buildings, and whilst bats were present in the locale, they expressed no interest in the buildings.
- 5.4.9 Common and soprano pipistrelle bats were recorded entering the site over the buildings from the North, and commuting to the East along the hedgerow forming the Northern boundary. Common pipistrelles were also seen foraging in the field to the

East for the second half of the survey. A single *Myotis* spp. bat was recorded passing along this boundary, believed to be either a whiskered or Brandt's bat (Figure 7).

5.4.10 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.

5.4.11 Precautionary mitigation would be appropriate in respect of ensuring the foraging habitat on site is not degraded for use by bats during development. No specific mitigation for the loss of the buildings is considered necessary.



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

Figure 8 - Tree risk categories

5.5 Birds

5.5.1 There are 650 records of birds within 2km of the site (Figure 9).

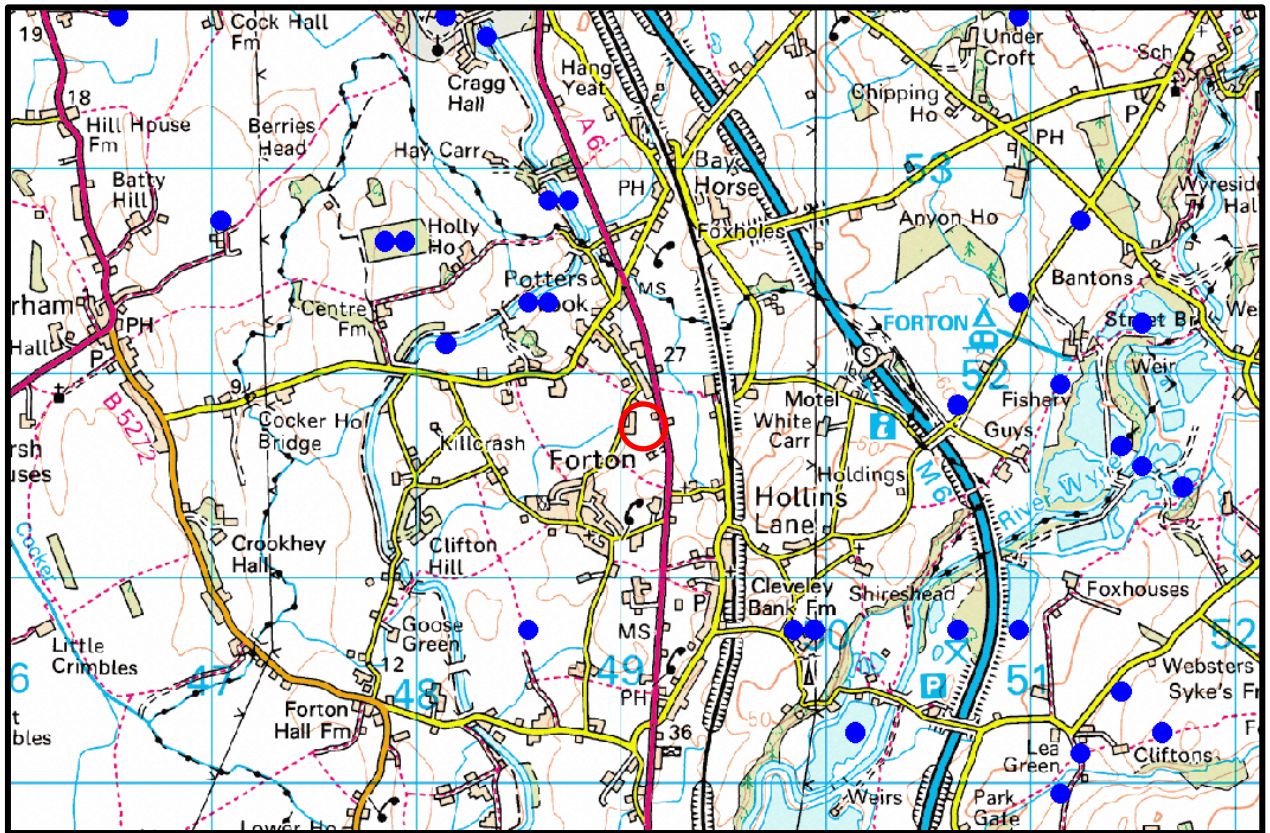


Figure 9 - Bird records shown in blue, site circled in red

- 5.5.2 The intact hedgerows and parcel of woodland 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 grazed and as such is usually short. Trampling risks are also very high within this area of the site.
- 5.5.3 A barn owl box is installed on the top of a tree on the periphery of the residential garden. This did not appear to be used at the time of the survey.
- 5.5.4 Several wrens were noted within the dilapidated buildings and this is highly likely to be used for nesting.
- 5.5.5 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.
- 5.5.6 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.
- 5.5.7 Precautionary mitigation would be appropriate in respect of construction activities and compensation for lost nesting and foraging opportunities will be required.

5.6 Brown Hare

5.6.1 Brown hares are a UK BAP priority species. There are five records of brown hares within 2km of the site (Figure 10).

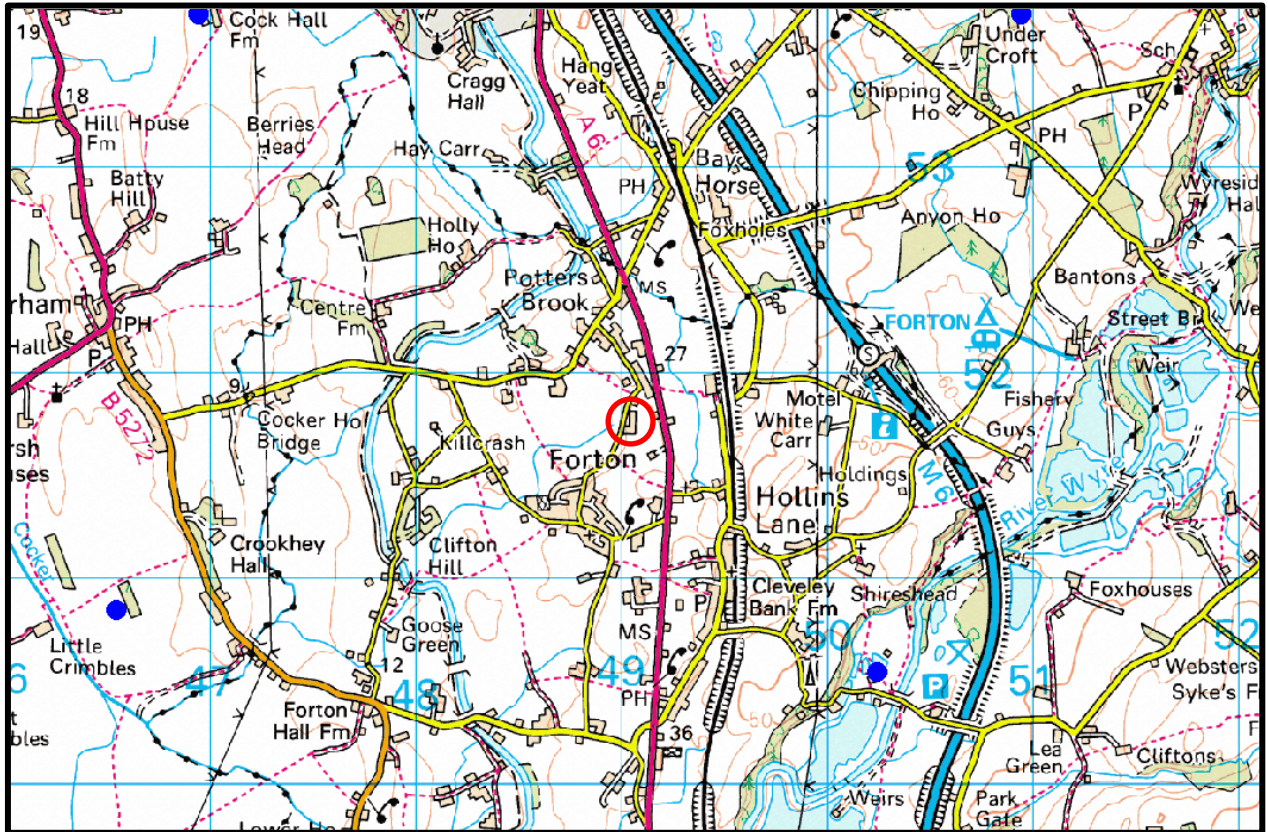


Figure 10 - Brown hare records shown in blue, site circled in red

5.6.2 No indication of brown hares was recorded on the site.

5.6.3 The site boundary has some potential for brown hares to create forms but use of the site is likely to be limited due to its open and exposed nature and regular human presence.

5.6.4 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.

5.7 Invertebrates

5.7.1 Numerous invertebrates have been recorded within 2km of the site.

5.7.2 No deadwood or vegetation on site was recorded which would provide an important resource for invertebrates in the local area.

5.7.3 Given the poor quality habitats contained within the site in comparison to the wider area, it is not considered that this site is of any local significance for invertebrates.

5.7.4 Impacts on the species are considered likely to be negligible.

5.8 Reptiles

- 5.8.1 There are no records for reptiles within 2km of the site.
- 5.8.2 Discarded materials that would potentially provide refugia was searched during the site surveys. No indications of the presence of reptiles could be found.
- 5.8.3 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.
- 5.8.4 Reptiles may occur along the boundary of the site and this provides linkage across the local landscape. It is however outside the site boundary and is unaffected by the proposal.
- 5.8.5 No specific mitigation for these species is considered necessary.

5.9 Other

- 5.9.1 The boundary hedgerows are species poor and provide little potential for use by hedgehog (*Erinaceus europaeus*). Fragmentation of habitat locally and existing land use do not provide optimal conditions for the free passage of this species across the site and slugs and snails are likely to occur only at very low numbers.
- 5.9.2 The site may be crossed by species such as fox (*Vulpes vulpes*) and rabbit (*Oryctolagus cuniculus*) are known to occur locally.
- 5.9.3 The boundary hedgerows may provide suitable habitat for small mammals such as field vole (*Microtus agrestis*) but these areas are small and the sites value to small mammals is limited.

5.10 Statutory and Non-Statutory Sites

Direct Impacts:

- 5.10.1 There are no statutory or non-statutory sites which are connected to the site such that site development would directly affect the dispersal of species between them or directly impact upon their integrity.
- 5.10.2 The habitats on site do not represent or are linked to those found in any of the statutory or non-statutory sites locally.

Indirect Impacts:

- 5.10.3 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. Trees should as far as possible be retained in the scheme.
- 6.1.2 Hedgerows around the site should be retained or improved where possible. Any lengths of intact hedgerow to be removed to facilitate development should be transplanted and or replanted in order that there is no net negative impact on this BAP habitat due to development. The roots of hedgerow plants/trees should be adequately protected during development from compaction/ground disturbance.

6.2 *Badger*

- 6.2.1 Badger setts 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.
 - Boundary fences/walls should incorporate gaps at their base to facilitate the passage of badgers across the site.

6.3 *Bats*

- 6.3.1 Work at night should be restricted light spill onto the boundaries and woodland should be minimised.
- 6.3.2 Any category 1 or 2 trees to be felled should be re-inspected for bats to confirm they remain absent.
- 6.3.3 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.

6.4 *Birds*

- 6.4.1 Nesting by birds within the dilapidated buildings is considered likely to occur. Birds may also nest within hedges and woodland on the periphery of the site.
- 6.4.2 The buildings should be demolished 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.
- 6.4.3 If the spruce tree is to be felled, the barn owl nest box should be checked to ensure it is not in use.
- 6.4.4 Artificial bird nesting sites for wren could be incorporated into the new buildings in suitable locations.
- 6.4.5 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.

6.5 *Brown Hares*

- 6.5.1 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.
- 6.5.2 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.

6.6 *Invertebrates*

- 6.6.1 Considering the nature of the proposals, no specific mitigation is considered necessary.

6.7 *Reptiles*

- 6.7.1 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.
- 6.7.2 Woodland on the edge of the development site should be retained such that it is in proximity to open areas of ground which will also be suitable for basking.
- 6.7.3 The points in respect of not leaving open trenches without means of escape detailed for badgers are also applicable to these species.

7. CONCLUSION

- 7.1.1 Ecological surveys, site appraisals and impact assessments were carried out with respect to land at Highfield Farm, Forton, Lancashire. It is proposed existing outbuildings will be demolished and a new agricultural building will be erected in their place.
- 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 trees close to but outside the development area are generally of low quality.
- 7.1.4 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.
- 7.1.5 I certify this report has been compiled in accordance with the code of professional conduct for the Chartered 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 - GREAT CRESTED NEWT ASSESSMENT



envirotech

Ecological Consultants
Environmental and Rural Chartered Surveyors

Our Ref: 2841

Sam Edge
Rocket Architects
16 Kelsey Street
Lancaster
LA1 5DL

Wednesday, 05 August 2015

Dear Sir/Madam;

RE: GREAT CRESTED NEWTS - HIGHFIELD FARM, FORTON, LANCASHIRE

Further to your recent request in respect of the proposed demolition and replacement of agricultural outbuildings at the above site, we understand an assessment of the possible impact on Great Crested Newts is required, I would therefore report as follows.

Site assessment was undertaken on the 18th June 2015. The purpose of this assessment was to assess the ponds on site (or those within 250m radius where possible) and surrounding habitat and correlate these with records for amphibian species in the local area. This allowed a determination to be made if there was a significant risk to Great Crested Newts and if additional surveys were warranted. Natural England licensing guidelines indicate that if such an assessment results in a low risk being identified, no additional surveys are required.

Records:

There are 20 records of Great Crested Newts within 2km of the site although these are all >500m from the site (Figure 1).



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Tel: 015395 61894
Mobile: 07812 081320
Email: info@envtech.co.uk
Web: www.envtech.co.uk
Envirotech NW Ltd

The Stables, Back Lane, Hale, Milnthorpe, Cumbria. LA7 7BL
Directors: A. Gardner BSc (Hons), MSc, CEnv, MCIEEM, MRICS, Dip NDEA
H. Gardner BSc (Hons), MSc, CEnv, MRICS
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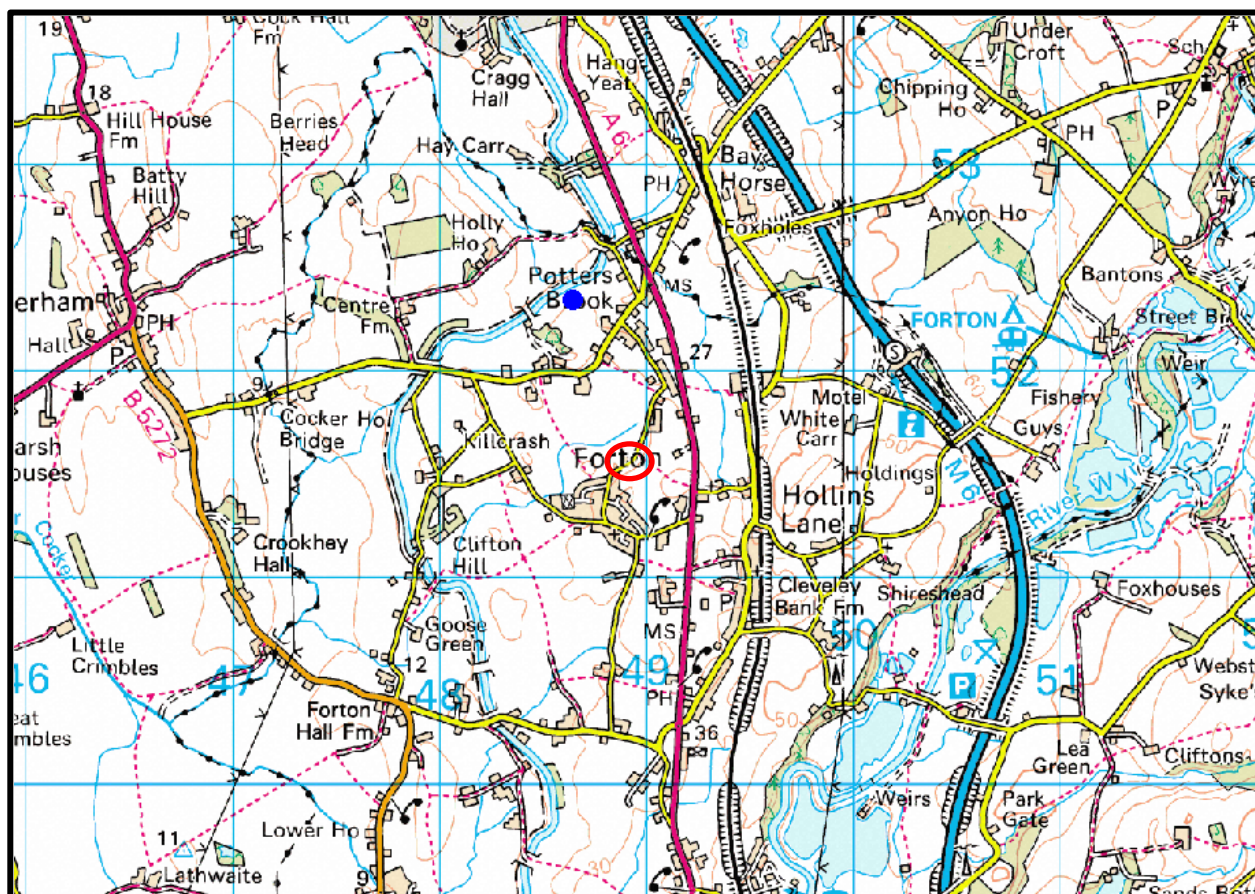


Figure 1 Great Crested Newt records shown in blue, site circled in red

Ponds:

There are two ponds within 250m of the centre of the proposed development (Figure 2). These are 25m and 30m from the nearest point of the development site respectively.



Figure 2 Site centre shown in red, 250m (approx) radius marked in white

In accordance with Natural England guidelines, these ponds were subject to closer investigation in order to gauge their potential for use by Great Crested Newts.



POND 1



POND 2

Habitat:

The habitat immediately adjacent to pond 1 is comprised of ornamental planting with the residential gardens. The pond is very small and its banks are vertical and made from stone. It is considered unlikely that Great Crested Newts could either enter or exit the pond. The wider landscape is heavily disturbed and low value. It is unlikely any amphibians using the ponds could access the development area.

The habitat immediately adjacent to Pond 2 is comprised of scrub and tall ruderal vegetation. This habitat would be potentially suitable for use by amphibians for foraging and/or refuge. A mature hedgerow leads from this area to the East, away from the development site and would also offer potential habitat for amphibians.

The development site is isolated from this pond by an expanse of short, homogenous poor semi-improved grassland. It is highly unlikely to be crossed by amphibians, particularly considering the suitable habitat around the pond.

Pond 1 is known to support nesting ducks and moorhens which would exert a strong predatory pressure on amphibians. In addition, herons are known to be present locally.

The development area comprises existing agricultural outbuildings which are subject to regular disturbance. The ground is heavily compacted, it would not provide terrestrial refuges for amphibians. It has a very low value to amphibians.

Both of the ponds were subject to a HSI assessment (Figure 3);

Pond ref	Pond 1	Pond 2
SI1 - Location	1	1
SI2 - Pond area	0.05	0.4
SI3 - Pond drying	0.9	0.1
SI4 - Water quality	0.33	0.33
SI4 - Shade	1	0.2
SI6 - Fowl	1	0.67
SI7 - Fish	1	1
SI8 - Ponds	0.55	0.55
SI9 - Terr'l habitat	0.33	0.67
SI10 - Macrophytes	0.3	0.3
HSI	0.49	0.43

Figure 3 HSI assessment of ponds

HSI Pond suitability

<0.5 = poor
 0.5 – 0.59 = below average
 0.6 – 0.69 = average
 0.7 – 0.79 = good
 > 0.8 = excellent

Ponds 1 and 2 score below 0.5 which makes them of poor suitability for Great Crested Newts. Both ponds appear to have low water quality.

Given the poor pond suitability, landscape fragmentation and lack of records in the vicinity, we consider the risk of use of the ponds by GCN is very low. We also consider use of the site by GCN is unlikely to occur due to the poor terrestrial habitat on and adjacent to the development area, and the risk posed by development is unlikely to be higher than existing land use.

Assessment:

The rapid risk assessment tool issued by Natural England has been used for this site (Figure 4). This assumes Great Crested Newts are present in the ponds near the site. We do not however consider any of the ponds within 250m are suitable for use by this species. The risk assessment also assumes that the land to be developed will be lost or damaged. With this particular development, once complete, there will be no decrease in the quality of residual habitat available for Great Crested Newts and other amphibians.

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	0.001 - 0.01 ha lost or damaged	0.05
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0.05
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

Figure 4 Risk Assessment

This indicates that if Great Crested Newts were present in ponds, and we consider it highly unlikely they will be, the likelihood of committing an offence is unlikely.

Recommendations:

Although the risk assessment states an offence is unlikely, with the following recommendations and the fact that habitat quality will be greatly improved post-development, the risk to amphibians can be further reduced. .

Recommendations are as follows:

1. Store any materials used for construction on compacted ground/hard standing only
2. Raise stored materials off the ground, e.g on pallets
3. Backfill any excavation before nightfall or provide ramps to allow newts to exit easily
4. Any piles of loose material (e.g. soil) which are to be left on site should be compacted i.e. tracked over by machinery, immediately to reduce the risk of amphibians using the material as a shelter
5. Construction traffic should not enter or leave the site during the hours of darkness
6. The creation of a garden and shrub borders in place of hard standing/ yards and bare ground will provide an increase in structural diversity and will be likely to benefit any local Great Crested Newts populations using this area
7. Should Great Crested Newts be found during work within the construction area all work should cease and the ecological consultant for this project should be consulted prior to work recommencing

Summary:

The ponds surveyed provide poor habitat for Great Crested Newts. Intensively farmed pasture fields between the ponds and the development site result in poor structural diversity locally and present an inhospitable environment that is unlikely to be crossed by this species.

The risk to Great Crested Newts at the site is considered to be very low. Should Great Crested Newts occur within the ponds locally, the risk of any offence being committed is very low.

Taking the above mitigation into account and the habitat improvement work which will result as a consequence of the development, we consider the risk to Great Crested Newts is negligible. Work on the site under the above methods statement would not be licensable.

Should you wish to discuss this assessment please do not hesitate to contact me in the first instance.

Yours Sincerely



Andrew Gardner BSc (Hons), MSc, MIEEM, MRICS, CEnv, Dip NDEA
Director Envirotech NW Ltd