Preliminary Ecological Appraisal (PEA) Survey Report	
For:	Mr Michael Hammond, Red House Farm, Cross Hill, Brierley, Nr Barnsley S72 9LE
Site	Red House Farm, Cross Hill, Brierley, Barnsley S72 9EE
Date:	28 June 2018
Report Reference:	RHF.7.6.2018

Surveying Ecologist:

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Client:	Mr Michael Hammond, Red House Farm, Cross Hill, Brierley, Nr Barnsley S72 9LE
Site Name:	Red House Farm, Cross Hill, Brierley, Barnsley S72 9EE
Grid Reference:	SE 40707 11292
Report:	Preliminary Ecological Appraisal
Date of survey:	14 June 2018
Surveyed by:	Natasha Estrada BSc (Hons), MRes, MCIEEM

Issue:	Revision:	Stage:	Date:	Prepared by:	Approved by:
1	-	Draft for review	15 June 2018	Natasha Chinn, Estrada Ecology Ltd	Natasha Estrada MCIEEM, Estrada Ecology Ltd
2	n/a	FINAL	28 June 2018	Jane Gruber, Estrada Ecology Ltd	Natasha Estrada MCIEEM, Estrada Ecology Ltd

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Summary

The survey site, Red House Farm, Cross Hill, Brierley, Barnsley S72 9EE (central grid reference, SE 40707 11292) is located within the suburb of Brierley approximately 7km to the north east of the town of Barnsley, South Yorkshire.

The survey site comprises: a farm house with outbuildings; a red brick cowshed with an annex; a barn with extensions; and an additional lone-standing outbuilding. The land features areas of hard standing, semi-improved and amenity grassland, introduced shrubs, scattered trees and a small garden pond. An ecological appraisal has been requested to satisfy an application to convert the land for residential use.

Located to the west of the farm house is a small pond. As the pond is within five hundred metres of the proposed development, site samples were taken to ascertain the presence / absence of great crested newt (*Triturus cristatus*) environmental DNA.

Findings

The larger farmhouse annex, lone-standing outbuilding, and eastern barn extension recorded positive for aged field sign evidence, synonymous with brown long-eared bat (*Plecotus auritus*). Under current proposals (at August 2018), it is understood that only the extended barn is impacted, with the remaining buildings within the survey site unaffected, and to be retained in situ.

The pond recorded negative for the presence of great crested newt environmental DNA.

Summary

Following best practice guidance, due to the presence of bat field signs within the site, it is recommended that three activity surveys are undertaken on buildings affected by the proposals to ascertain the nature of use. It is understood that under current proposals (at August 2108), only the extended barn will be affected. Bat activity surveys are seasonally dependent, with permissible timings beings May to September.

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Whilst every effort has been taken to ensure the accuracy of this report and its contents in view of potential ecological constraints to development or the likely presence or absence of species it must only be viewed as a snap shot in time and therefore not be viewed as definitive. Due to external factors, such as seasonality, weather etc. having the potential to affect survey results no liability can be assumed for omissions or changes that may or may not occur after the date this report was produced.

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1 Introduction and Background to the Site

1.1 Estrada Ecology Ltd was commissioned by Andrew Bailey Architects Ltd. to conduct a preliminary ecological appraisal (PEA) of a Red House Farm, Cross Hill, Brierley, Barnsley, to inform the proposed redevelopment of the site for residential housing.

1.2 Under current proposals it is understood that only the extended barn on site is affected by the proposals. The remaining buildings are understood to be retained in situ, unaffected by the proposals.

1.3 Report objectives

- Present the findings of the ecological survey
- Assess the potential of existing on-site habitats to support protected or notable species
- Evaluate any likely ecological impacts on protected and notable species or habitats because of the proposed development
- Provide recommendations for any further species- specific survey and mitigation measures that may be required
- Provide habitat enhancement recommendations in line with the National Planning Policy Framework (NPPF, 2012).

1.4 Location of the site

1.4.1 The survey site central OS grid reference is SE 40707 11292.

1.5 Site description

1.5.1 The survey site comprises of an extended barn on the eastern elevation, next to a hard-standing drive. To the west of the barn lies the L-shaped cowshed and annex, and the farmhouse and annexes.

1.5.2 A lone-standing outbuilding is present on the western elevation of the site. Trees line the site on the north eastern and south western elevations, with species-poor semi improved grassland present between. On the far western elevation of the site lies a steep sided ornamental pond, previously used for ornamental fish, areas of hard standing which form a patio and amenity grassland comprising the farm house garden.

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Figure 1: The site in its wider setting (site indicated with red keyline).



Google Earth

2 Protected Species Legislation

2.1 Relevant legislation includes the Birds Directive (79/409/EEC) and the Wildlife and Countryside Act 1981 (as amended), which states that all birds, their nests and eggs are protected by law. Special considerations of Schedule 1 Birds and European Protected Species should be made.

2.2 The EC Council Directive on the Conservation of Natural Habitats of Wild Flora and Fauna, 1992 (The 'Habitats Directive') requires the UK to maintain and/or restore naturally occurring habitats, especially those which are deemed to be vulnerable and declining in Europe. It also requires the protection of many species of plants and animals which are similarly threatened and declining throughout their European range, therefore giving effect to both site and species protection objectives. Appendix One lists habitats, and Appendix Two lists species some of which UK has responsibility to maintain in favourable conservation status.

2.3 The Natural Environment and Rural Communities (NERC) Act came into force on 1 Oct 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England, as required by the Act. The S41 list is used to guide decision-makers such as public bodies, including

local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

2.4 The UK Biodiversity Action Plan sets out the priorities for the UK, regarding habitats and species of principle importance for conserving biodiversity in the UK. Local areas have then identified the habitats and species within their areas which are on the national list and also those which are of importance locally.

2.5 Each county has its own Local Biodiversity Action Plan (LBAP). The site falls within the Barnsley Biodiversity Action Plan area.

3 Survey Methodology

3.1 Desktop survey

3.1.1 A bat records search was requested from South Yorkshire Bat Group for a 1km radius from the site.

3.1.2 Barnsley Biological Records Centre was contacted for any records held for a 1km radius from grid.

3.1.3 Further inspection, using colour 1: 25,000 OS base maps (www.ordnancesurvey.co.uk), Magic Map (www.magic.defra.gov.uk) and aerial photographs from Google Earth (www.maps.google.co.uk), was also undertaken to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.

3.1.4 Furthermore, consultation with Magic Map was undertaken to ascertain if any European Protected Species Mitigation Licenses (EPSML) have been granted within a 2km radius from grid.

3.2 Field survey

3.2.1 The survey area was investigated on foot to ascertain habitats on site, and the potential of those habitats to support ecological diversity. The vegetation types present within the site were assessed by experienced ecologist, Natasha Estrada BSc (hons), MRes, MCIEEM assisted by junior ecologist Natasha Chinn BSc (hons) using methodology based on that described in the Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit (Nature Conservancy Council, 1990.). The results of the survey are presented in the Phase One Map in Appendix Six.

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3.3 Great crested newt eDNA

3.3.1 Samples of water were taken (following methodology outlined in DEFRA technical guidance note WC1067 *Analytical development for improved surveillance of the great crested newt)* from accessible water bodies within a 500metre radius from grid, as outlined in Figure 2. Samples were analysed for the presence of great crested newt eDNA by Sure Screen Scientifics and are presented in Appendix One.

Figure 2: Location of water samples taken for environmental DNA



Google Earth

3.3.2 Habitats and features with potential to support protected and / or conservation priority faunal species, together with any field signs of such species were recorded on the field map using target notes. A search was undertaken for the following key habitats and / or field signs for protected or conservation priority species highlighted in Table 1.

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Table 1: Key habitats and field signs or protected and priority species

Taxon	Indicative habitats	Field signs
Bats	Roosts – Trees, buildings, bridges caves etc. Foraging areas – e.g. parkland, water bodies and streams, wetlands, woodland edge, hedgerow Commuting routes – linear features (eg hedgerows).	In or on potential roost sites: Droppings stuck to walls; urine spotting in roof spaces; oil from fur staining round roost entrances; feeding remains (eg moth wings).
Great crested newt	Ponds within 500m of suitable habitat within the site boundary. Suitable (terrestrial) habitat includes rough grassland, scrub and woodland, log and rubble piles and other debris, animal burrows.	Eggs, Individuals of all life stages. Egg rolled plants.
Reptiles	Rough grassland, log and rubble piles, compost heaps.	Sloughed skins; eggs, individuals.
Birds	Trees, scrub, hedgerow, field margins, grassland.	Nests; droppings below nest sites (especially in buildings of trees); tree holes.
Badger	Found in most rural and many urban habitats.	Excavations and tracks: sett entrances, latrines, hairs, well-worn paths; prints; snuffle holes.
Water vole	Water bodies/water courses.	Burrow entrances; prints; latrine areas; faeces; feeding stations.
BAP Invertebrates	Each butterfly species has its own habitat requirements determined by the food plant of the caterpillar, the nectar source for the adult butterfly and the conditions needed for the caterpillar to survive and then pupate successfully.	Eggs, larva, Pupa, adult butterfly. Habitat type and presence of food plants.

3.5 Timing

3.5.1 The survey was conducted on 14 June 2018.

3.6 Weather conditions

3.6.1 The survey was carried out in suitable weather conditions, as outlined by Natural England guidelines; sunny with temperatures averaging 19^{o}C and no precipitation.

3.7 Personnel

3.7.1 The surveys were carried out by ecologist Natasha Estrada BSc (hons), MRes, MCIEEM of Estrada Ecology Ltd; an experienced ecologist with over fourteen years' experience within ecological consultancy, and the holder of Natural England bat and great crested newt survey licences, assisted by junior ecologist Natasha Chinn BSc(hons).

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4 Ecological Constraints

4.1 It should be noted that this ecological appraisal provides baseline ecological data at the time of survey only and does not include flora or fauna which may be present at different times of the year.

4.2 An absence of species records from within a search radius does not provide confirmation that a species is absent from within the search area.

4.3 All areas of the site were accessible for survey.

5 Survey Results

5.1 Desktop survey results

5.1.1 725 records were obtained from Barnsley Biological Records Centre for a 1km radius from grid. The relevant species are highlighted in Appendix Five. The majority of the records returned were for flowering plants and birds.

5.1.2 A total of thirty-four bat records were returned from South Yorkshire Bat Group for a 1km radius from grid as highlighted in Appendix Four.

5.1.3 Consultation with www.magic.defra.gov.uk recorded one EPS Licence roost closure, dated from 2012, covering destruction of a common pipistrelle (*Pipistrellus pipistrellus*) resting place, some 1.3km south of the survey site.

5.1.4 No amphibian or reptile records were returned for the search radius.

5.1.5 Four Eurasian badger (*Meles meles*) records were returned for the search radius all for field sign evidence dated 2017. The locations have been deliberately omitted from the report but not from analysis of impacts.

5.2 Habitat Description

5.2.1 Overview

5.2.1.1 The Phase 1 habitat mapping description is predominantly:

- J3.6: Buildings
- J4: Hard standing
- J1.2: Amenity grassland
- B6: Poor semi-improved grassland
- G1: Standing water

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- A3.1: Scattered trees
- C3.1 Tall ruderals
- J1.4 Introduced shrub

5.2.2 J1.2: Amenity grassland

5.2.2.1 Much of the site is covered in amenity grassland forming the lawn of Red House Farm. There are large areas to the west and the south of the cowshed. These are dominated by perennial rye grass, (*Lolium perenne*) with occasional broadleaved dock (*Rumex obtusifolius*), and frequent creeping buttercup (*Ranunculus repens*) offering no intrinsic ecological value.

Figure 3: Amenity grassland on site



5.2.3 C3.1: Tall ruderal

5.2.3.1 Immediately outside the western site boundary, bordering a small parcel of amenity grassland are sparsely distributed tall ruderals, dominated by: common nettle (*Urtica dioica*), and broad-leaved dock (*Rumex obtusifolius*).

5.2.4 J3.6: Buildings - The farmhouse and outbuildings

5.2.4.1 The farmhouse is constructed from red brick and stone which has been fully rendered. The rendering is entirely intact, and no suitable fissures were recorded on the exterior of the building. The pan tiled roof was intact, and no suitable voids were found around gable ends, uPVC windows, pipes, or light fittings. A small uPVC extension is found on the western elevation of the farmhouse.

5.2.4.2 The larger outbuilding of the farmhouse, is constructed from stone work, and has a pan tiled roof and wooden door and windows. Lifted pan tiles provide suitable access into the building. Crevices under the roof and in the gable ends provided potential roosting areas. This building was recorded to have confirmed presence of bats resulting from a low number of field signs (pipistrelle type droppings).

5.2.4.3 The smaller outbuilding is currently used as a garage and is constructed from red brick a metal roof. This building appears to have been built more recently and is well sealed. This building was recorded to have negligible roost suitability for bats.

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Figure 4: The farmhouse and garage



5.2.5 The extended barn

5.2.5.1 Located to the east of the farmhouse, the single-storey building is constructed from stone, with the exterior of the barn fully rendered. The property has a metal roof which overlays a timber roofing frame. The barn is comprised of an original building with extensions on the eastern and western elevation. Gaps are found between wooden doors and frames, and in wooden windows. An abundance of ivy was recorded on the exterior of the building.

5.2.5.2 The barn is in a poor state of structural repair, with large areas of rendering missing or cracked, exposing crevices in the stonework and gable ends. Evidence of water damaged panels underneath the roof were recorded. The roof coving was recorded as poor. Potential access points which bats could utilise were noted within the roof, gable ends, and within fissures in the stonework.

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5.2.5.3 The interior of the barn was easily accessible, however, the use of the western barn extension for storage limited the number of areas that could be accessed within it.

5.2.5.4 The eastern extension features a high peaked roof and was recorded to contain confirmed presence of bats, resulting from a low number of field signs (2 wing cases), synonymous with brown long eared bats.

5.2.5.5 The western extension had an abundance of cobwebs.

Figure 5: The extended barn





5.2.6 The cowshed and offshoot

5.2.6.1 The cowshed and the offshoot attached are found to the north of the main dwelling farm house. The buildings are both constructed from red brick, a flat tiled roof overlaying the cowshed, and metal roofing covering the offshoot. Fissures were recorded in the tiles and gable ends of the cowshed. These gaps lead between boarding and mortar. Water staining was found on the interior of the cowshed.

5.2.6.2 The cowshed was recorded to have high potential for bats, however, plans indicate that this building is to be retained.

Figure 6: The cowshed



5.2.7 The lone standing outbuilding

5.2.7.1 This outbuilding is located to the west of the farmhouse, and is constructed from red bricks, and metal roofing and wooden panels under the roofing. Gaps in the roof provide unrestricted access into the building and were recorded as containing droppings. The exterior of the building was found to have a thick covering of ivy, which had infiltrated its way into the interior of the building. Suitable gaps were also found under doors.

5.2.7.2 Confirmed use by bats was recorded in this building, resulting from a low number of field signs (3 wing cases, and droppings synonymous with brown long eared bat). One wing case was fresh, suggesting recent use.

Figure 7: The stand alone building



Figure 8: The location of field sign evidence during the survey



KEY	
●	Pipistrelle bat droppings
●	Brown long-eared bat droppings
●	Brown long-eared bat feeding remains

5.2.8 J4: Hard standing

5.2.8.1 Hardstanding in the form of the driveway is present on the eastern elevation and offers no intrinsic ecological value.

Figure 9: Hardstanding found on the driveway



5.2.9 G1: Standing Water

5.2.9.1 A small circular pond is located to the west of the farmhouse approximately 35 inches deep. The pond is steep sided, lined and until recently housed ornamental fish. The pond sits on a wider area of hardstnding compriisng the patio of red house farm with pots containing ornamental plantings.

Figure 10: Standing water within 500metres of the proposed development



5.2.10 B6: Semi-improved grassland

5.2.10.1 To the north of the site lies an area of short sward species poor semi-improved grassland. Grass species comprise perennial rye grass and common bent (*Agrostis capillaris*) with dominant creeping buttercup present throughout. Herbs comprising of ribwort plantain (*Plantago lanceolate*) and white clover (*Trifolium repens*) occur infrequently.

Figure 11: Grassland to the north west outside the development boundary



5.2.11 A3.1 Scattered trees

5.2.11.1 Scattered trees form the western and eastern site boundaries comprising mature and semi mature specimens of syacmore (*Acer pseudoplatanus*), field maple (*Acer campestre*), elder (*Sambucus nigra*), ash (*Fraxinus excelsior*) along with *Cypressus × leylandii* and a single pine. Under current proposals these are to be retained throughout the redevelopment of the site.

5.2.11.2 Fruiting cultivars of pear (*Pyrus sp.*), apple (*Malus sp.*) and bird cherry (*Prunus padus*) occur infrequently. The age and abundance are not deemed to constitute traditional orchard. Under current proposals, these trees are proposed for removal to facilitate redevelopment of the site.

Figure 12: Scattered trees



5.2.12 J1.4 Introduced shrub

5.2.12.1 Areas of introduced shrub, comprising ornamental beds and plantings are isolated to the site boundaries. Rhodendron (*Rhododendron sp*), laurel (*Laurus nobilis*), *Ligustrum sp, Ribes sp* and dwarf conifers were recorded as present.

5.3 Designated sites

5.3.1 Habitats of European significance

5.3.1.1 No Annex 1 habitats as defined in the EC Habitats Directive occur in the study area, or within a 1km radius, according to records obtained via www.magic.defra.gov.uk website.

5.3.2 Designated sites

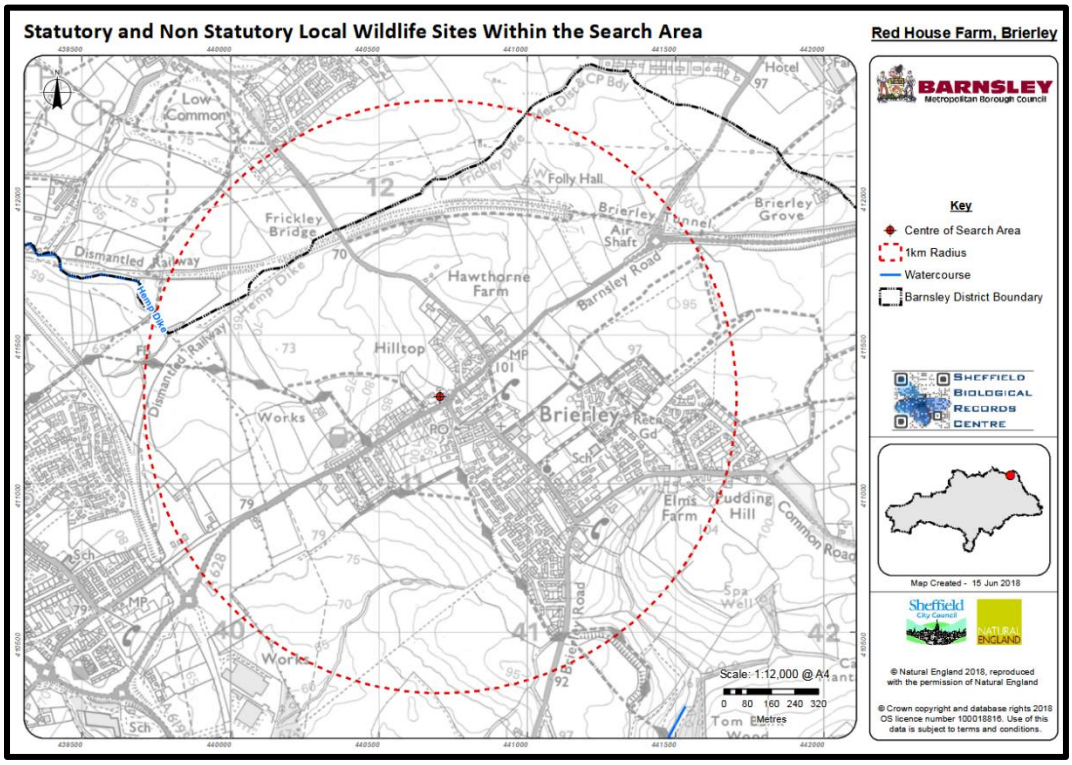
5.3.2.1 No Local Wildlife Sites (LWS) were recorded within the search area as outlined within Figure 9.

5.3.2.2 A Site of Special Scientific Interest (SSSI) Impact Risk Zone starts approximately 1.3 km north of the site resulting from the SSSI, Nostell Brickyard Quarry, which is located approximately 5.6 km north of the site.

5.3.2.3 White Rose Forest, and an Objective 2 area, which spans 600790.1 Ha are located 0.63 km north of the survey site. The site is located within South Yorkshire Forest, and an Objective 1 area spanning 155993.7 Ha.

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Figure 13: Designated sites within the search area



Barnsley Biological Records Centre

5.4 Protected species:

5.4.1 Badger

5.4.1.1 Four records were returned for the search radius for Eurasian badger, (*Meles meles*) all records are for field sign evidence and date from 2017.

5.4.5.2 No field sign evidence of badger, such as: latrines; snuffle holes; pathways; discarded hairs on boundary features or setts were observed during the site survey, although land outside the development boundary to the north does provide suitable foraging habitat and connectivity within the surrounding landscape.

5.5.2 Bats

5.5.2.1 During the survey, field sign evidence synonymous with brown long-eared bat and pipistrelle bat, was recorded within the larger farmhouse annex, lone-standing outbuilding, and eastern extension of the barn (as outlined within Figure 8), when assessed by a licenced bat ecologist (2015-12213-CLS-CLS) using guidelines from Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition) 2016

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5.5.2.2 The wider Red House Farm site does provide suitable foraging habitat for bats as well as connectivity to other foraging habitat and potential roosts within the wider landscapes. Under current proposals these are unaffected as scattered trees on land to the north are to be retained. No impacts are predicted in respect of habitat loss on bats.

Figure 14: Field sign evidence synonymous with brown long-eared bat recorded within the barn extension



Table 2: Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgment (Bat Conservation Trust: Bat Surveys for Professional Ecologist, Good Practice Guidelines, 2016, 3rd Edition.

Suitability	Description of roosting habitats	Signs indicating possible use by bats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats. A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by a small number of bats such as a gappy hedgerow or unvegetated stream, but isolated from the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed)	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and gazed parkland. Site is close to and connected to known roosts.

5.5.3 Amphibians

5.5.3.1 A pond located outside the development boundary, but within five hundred metres of the boundary, returned negative for the presence of great crested newt environmental DNA (Appendix One).

5.5.3.2 The pond is steep sided and until recently has been used for ornamental fish. It is deemed to provide sub-optimal for use by common amphibian species.

5.5.3.3 Semi-improved grassland, outside the development boundary to the north, provides suitability for common amphibian species, but habitats consisting primarily of buildings, hardstanding and amenity grassland within the development boundary are deemed of negligible potential to support amphibians.

5.5.4 Reptiles

5.5.4.1 No reptile records were returned from the biological records search. Land within the development boundary provides negligible potential to support reptiles in any life phase. Land outside the site boundary to the north provides some suitable habitat to support reptiles, although none were recorded during the survey.

5.5.5 Birds

5.5.5.1 Habitat exists for breeding birds within buildings and trees on site. No signs of activity were recorded at the time of survey. However, this offers a snap-shot in time and must not be viewed as definitive as these areas have potential to support breeding birds at other times of the year.

5.5.6 Other species

5.5.6.1 The proposed development site does not support suitable habitat for any other protected or significant fauna, such as: otter; brown hare; water vole; dormouse; or white-clawed crayfish (*Austopotomobius pallipes*).

6 Conclusions

6.1 The extended barn recorded field sign evidence of brown long-eared bat. The nature of use of the site and abundance is unknown at present. As a result, activity surveys outlined in best practice guidance will be required to ascertain the nature of bat use of the site and inform a proportionate mitigation strategy.

6.2 Under current proposals, it is understood that no redevelopment of any of the other buildings on site is proposed. They are to remain in situ and unaffected, thus no impacts on bats and their roosts are predicted on the remaining buildings.

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6.3 The proposed works should be undertaken outside the breeding bird season (typically March - September inclusive). Should this not be feasible, then a pre-works' walkover survey for breeding birds should be undertaken. Should birds be recorded as breeding, then a suitable buffer zone as outlined by a suitably qualified ecologist should be installed to prevent disturbance.

6.4 Designated sites

6.4.1 No Local Wildlife Sites (LWS) were recorded within the search and no impacts are predicted.

6.4.2 A Site of Special Scientific Interest (SSSI) Impact Risk Zone starts approximately 1.3 km north of the site resulting from the SSSI, Nostell Brickyard Quary, which is located approximately 5.6 km north of the site. Significant barriers to dispersal are present between the two sites and no impacts are predicted.

6.4.3 White Rose Forest, and an Objective 2 area which spans 600790.1 Ha are located 0.63 km north of the survey site. The site is located within South Yorkshire Forest, and an Objective 1 area, spanning 155993.7 Ha. Significant barriers to dispersal are present between the two sites and no impacts are predicted.

6.5 Habitats and vegetation

6.5.1 No Annex 1 Habitats as defined in the EC Habitats Directive occur in the study area. No impacts on priority habitats are predicted.

6.6 Assessment of significance of impact on protected fauna

6.6.1 Badger

6.6.1.1 No setts, or field sign evidence of badger using the site, were recorded during the survey site. No further surveys are recommended in this instance.

6.6.2 Bats

6.6.2.1 The larger farmhouse annex, lone-standing outbuilding, and extended barn recorded positive for field sign evidence of use by brown long-eared bat and pipistrelle species when using Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition) 2016 and surveyed by a licenced bat ecologist (2015-12213-CLS-CLS).

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6.6.2.2 Under current proposals, only the extended barn is proposed for redevelopment. As a result, further activity surveys are considered necessary to confirm presence / likely absence of bats and, if present, to determine bat species and how bats using the buildings.

Table 3: Survey requirements based on building potential

Roost characterisation / potential	Number of activity surveys	The Extended Barn at Red House Farm, Cross Hill
Negligible	0	
Low	1	
Moderate	2	
High / Confirmed	3	X

6.6.2.3 Trees, planned for removal recorded within the development zone, all recorded negligible roosting potential for bats and no impacts are predicted.

6.6.3 Reptiles

6.6.3.1 Land within the development boundary recorded negligible potential to support reptiles. Land outside the site boundary to the north provides some suitable terrestrial habitat and connectivity to habitats beyond.

6.6.3.2 Under current proposals no encroachment on habitats to the north is proposed.

6.6.4 Amphibians

6.6.4.1 The pond, outside the development zone but within five hundred metres, recorded negative for the presence of great crested newt eDNA.

6.6.4.2 The pond is steep sided and lined. No evidence of common amphibian species was recorded at the time of survey and aquatic insect diversity was recorded as low. No impacts are predicted on amphibians via the proposed redevelopment of the site.

6.6.5 Birds

6.6.5.1 No active nests were recorded at the time of survey. It is recommended that works, including site clearance, are undertaken outside the breeding bird season, which is typically March - September inclusive. Should this not be feasible, then a pre-works' walkover survey for breeding birds should be undertaken. Should birds be recorded as breeding, then a suitable buffer

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zone, as outlined by a suitably qualified ecologist, should be installed to prevent disturbance.

6.6.6 Other protected and significant fauna

6.6.6.1 The site does not support appropriate habitat for any other protected or significant fauna such as: otter; brown hare; water vole; white-clawed crayfish; or dormouse. No evidence of barn owl was recorded within any of the buildings on site at the time of survey.

6.6.7 Invasive and non-native flora

6.6.7.1 No notable plant species were recorded during the preliminary ecological assessment.

7 Recommendations

7.1 Recommendations in respect of bats

7.1.1 The larger farmhouse annex, lone standing outbuilding, and barn extension are deemed to have confirmed use by bats for shelter and / or roosting, using BCT: Bat Surveys for Professional Ecologists, Good Practice Guidelines, 2016 (3rd Edition) based on field sign evidence when surveyed by a licensed bat ecologist (2015-12213-CLS-CLS) Under current proposals it is understood that only the extended barn is to be affected by the proposals.

7.1.2 Further activity surveys are therefore considered necessary to determine bat species and the nature of use of the extended barn.

7.1.3 The number of survey visits to the site are subject to is in accordance with practice guidelines (Bat Conservation Trust Bat, Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition), as outlined in Table 3.

7.1.4 Activity surveys (dawn or dusk) monitor the buildings using bat detectors. They can only be carried out in summer during the bat activity season (May – August or, if the weather conditions are suitable, September in accordance with the Bat Conservation Trust Guidelines, 2016).

7.1.5 If bats are confirmed as roosting a mitigation strategy will be required outlining proportionate mitigation to avoid or reduce the impact of development proposals on the population of bats present, either roosting or feeding.

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7.1.6 European Protected Species licences maybe required where a roost site is threatened in some way by a scheme.

7.2 Recommendations for birds: Works should be undertaken outside the breeding bird season (typically March – September, inclusive). If this is not possible, a walkover survey should be conducted by a suitably qualified ecologist to ensure the site is clear. If any breeding birds are found, measures will be taken to protect the nest and occupants until the breeding has completed.

7.3 Recommendations for reptiles: Due to the presence of suitable habitat for reptiles outside the northern site boundary it is recommended that the works are undertaken following a precautionary method statement in respect of reptiles (Appendix Two).

8 Enhancement

8.1 In order to meet requirements for biodiversity protection and enhancement outlined within the NPPF, it is recommended that ecological enhancements are included, where possible. These could include suitable landscaping incorporating species that provide a food or shelter resource to wildlife (see Appendix Three for suggestions)

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Appendix One: Environmental DNA results for the pond at Red House Farm.

SureScreen Scientifics

Folio No: E3342
Report No: 1
Order No: REDHOUSE.14.6.2018
Client: Estrada Ecology
Contact: J Gruber
Contact Details: jgruber@estradaecology.co.uk, jgruber@estradaecology.co.uk
Date: 27/06/2018

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS

Date sample received at Laboratory: 15/06/2018
Date Reported: 27/06/2018
Matters Affecting Results: None

RESULTS

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
3347	Redhouse Farm	-	Pass	Pass	Pass	Negative	0

SUMMARY

When Great Crested Newts (GCN); Triturus cristatus inhabit a pond, they deposit traces of their DNA in the water as evidence of their presence. By sampling the water, we can analyse these small environmental DNA (eDNA) traces to confirm GCN habitation, or establish GCN absence.

The water samples detailed below were submitted for eDNA analysis to the protocol stated in DEFRA WC1067 (Latest Amendments). Details on the sample submission form were used as the unique sample identity.

RESULTS INTERPRETATION

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SureScreen Scientifics

Lab Sample No.- When a kit is made it is given a unique sample number. When the pond samples have been taken and the kit has been received back in to the laboratory, this sample number is tracked throughout the laboratory.

Site Name- Information on the pond.

O/S Reference – Location/co-ordinates of pond.

SIC- Sample Integrity Check. Refers to quality of packaging, absence of tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to results errors. Inspection upon receipt of sample at the laboratory. To check if the Sample is of adequate integrity when received. Pass or Fail.

DC- Degradation Check. Analysis of the spiked DNA marker to see if there has been degradation of the kit since made in the laboratory to sampling to analysis. Pass or Fail.

IC- Inhibition Check- PCR inhibitors can cause false results. Inhibitors are analysed to check the quality of the result. Every effort is made to clean the sample pre-analysis however some inhibitors cannot be extracted. An unacceptable inhibition check will cause an indeterminate sample and must be sampled again.

Result- NEGATIVE means that GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as no evidence of GCN presence. POSITIVE means that GCN eDNA was found at or above the threshold level and the presence of GCN at this location at the time of sampling or in the recent past is confirmed. Positive or Negative.

Positive Replicates- To generate the results all of the tubes from each pond are combined to produce one eDNA extract. Then twelve separate analyses are undertaken. If one or more of these analyses are positive the pond is declared positive for the presence of GCN. It may be assumed that small fractions of positive analyses suggest low level presence but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive.

METHODOLOGY

The laboratory testing adheres to strict guidelines laid down in WC1067 Analytical and Methodological Development for Improved Surveillance of The Great Crested Newt, Version 1.1

The analysis is conducted in two phases. The sample first goes through an extraction process where all six tubes are pooled together to acquire as much eDNA as possible. The pooled sample is then tested via real time PCR (also called q-PCR). This process amplifies select part of DNA allowing it to be detected and measured in 'real time' as the analytical process develops. qPCR combines PCR amplification and detection into a single step. This eliminates the need to detect products using gel electrophoresis. With qPCR, fluorescent dyes specific to the target sequence are used to label PCR products during thermal cycling. The accumulation of fluorescent signals during the exponential phase of the reaction is measured for fast and objective data analysis. The point at which amplification begins (the Ct value) is an indicator of the quality of the sample. True positive controls, negatives and blanks as well as spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared so they act as additional quality control measures.

The primers used in this process are specific to a part of mitochondrial DNA only found in GCN ensuring no DNA from other species present in the water is amplified. The unique sequence appropriate for GCN analysis is quoted in DEFRA WC 1067 and means there should be no detection of closely related species. We have tested our system exhaustively to ensure this is the case in our laboratory. We can offer eDNA analysis for most other species including other newts.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. Kits are manufactured by SureScreen Scientifics to strict quality procedures in a separate building and with separate staff, adopting best practice from WC1067 and WC1067 Appendix 5. Kits contain a 'spiked' DNA marker used as a quality control tracer (SureScreen patent pending) to ensure any DNA contained in the sampled water has not deteriorated in transit. Stages of the DNA analysis are also conducted in

SureScreen Scientifics

different buildings at our premises for added

SureScreen Scientifics Ltd also participate in Natural England's proficiency testing scheme and we also carry out inter-laboratory checks on accuracy of results as part of our quality procedures.

Reported by: Derry Hickman **Approved by:** Sam Humphrey

End Of Report

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Appendix Two: Precautionary working method statement in respect of herpetiles.

The following methodology should be followed to reduce the impact on biodiversity at the site:

The site holds few potential refuges for amphibians or reptiles. Care should be taken not to provide opportunities which reptiles and amphibians could utilise.

Any brash should be removed and disposed of offsite. No piles of cut vegetation which could provide potential refuge for amphibians and reptiles should be left on site.

During works no hardcore/ aggregates should be retained on site. Any demolished material should be either stored within skips or removed from site to prevent creating potential refuge areas which amphibians and reptiles could occupy.

Destructive searches and site strip

The following methodology should be followed during site preparation:

All potential refuges and topsoil should be stripped during the activity season for amphibians and reptiles (typically mid-March to mid-October, during suitable weather conditions). An immediate pre-works survey should be undertaken by a suitably qualified ecologist to ensure that all potential refugia (logs, concrete, rocks etc) are free of amphibians and reptiles. Any suitable refugia identified should be removed off site. Only when deemed clear by a suitably qualified ecologist may a machine be used.

When potential refuge areas have been removed from the site, key habitat features can be topsoil stripped. Any features such as tree stumps, rocks, stones and sunken paving slabs should be carefully removed. Should any mammal burrows be uncovered these should be dug back by hand. Such works can be undertaken by an excavator under the supervision of a suitably qualified ecologist.

Construction works

The construction footprint has been identified and works will be restricted to this area. Any trenches dug on site should contain means for any trapped fauna to escape. A small wooden ramp should be placed within the trench each evening and left overnight as a means of escape.

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Environmental working practices and staff awareness

The location of the site and habitats present make it unlikely that amphibians and reptiles will be encountered during the proposed works. However, staff should be made aware of their duties in respect of legally protected species. Site staff should be informed of the residual possibility of amphibians and reptiles outside the site boundary and whilst a low risk that they could be encountered on site the risk remains.

It is important to note that amphibians are harmless, and their presence poses no health and safety risk to site staff. The site is unlikely to support adder; the UK's only venomous snake. However, site staff should be inducted on appropriate responses should they encounter the species.

Staff should be made aware that, if encountered, the favoured option is to leave the animal in situ and consult a suitably qualified ecologist.

Sympathetic working practices should include:

Avoid creating habitat piles / refuges which amphibians and reptiles could utilise.

Should areas of vegetation / debris be required to remain on site suitable measures should be employed to prevent access by amphibians and reptiles. Sheets of tarpaulin can be erected over the piles with the bottom sealed to prevent entry.

Staff awareness training:

All site staff and contractors should be made aware of the residual possibility of amphibian and reptile presence via a site induction.

Staff should be made aware of the use of refuges by amphibian and reptile species. Should common amphibian species (excluding great crested newt) be discovered they should be placed in a suitable container, removed from site and released safely into grassland to the north.

Should great crested newt be discovered during the works, all works should cease, and suitably qualified ecologist be consulted.

The site will have an on-call ecologist for such instances. The ecologists contact details should be at hand for advice. In the unlikely event that great crested newts be discovered, the on-call ecologist will consult with the local authority and Natural England and advise on further action to be taken.

In the unlikely event that reptiles are discovered during site works, all works should

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cease, and the on-call ecologist consulted for further advice. It is considered very unlikely that adder is using the site. However, should the species be recorded it should be left at a safe distance undisturbed until professional advice has been sought from the on- call ecologist.

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Appendix Three: Suggestions of wildlife-friendly plantings to enhance biodiversity

Common Name	*Scientific name*	Wildlife value
Large trees		
Ash	*Fraxinus excelsior*	68 species of insects/mites and 32 species of lepidoptera. Seeds eaten by birds and mammals.
Beech	*Fagus sylvatica*	98 species of insects/mites and 51 species of lepidoptera. The masts are eaten by birds and mammals including wood mice and Jays.
Cherries	*Prunus avium, Prunus padus*	9 species of lepidoptera. Berries eaten by birds.
Elm	*Ulmus procera*	Good tree for insects and birds.124 species of insects/mites and 24 species of lepidoptera are associated with elm trees.
Oaks	*Quercus pedunculate, Q. Robur*	423 species of insects/mites and 193 species of lepidoptera. Acorns eaten by a variety of birds and mammals. Very important for insect eating birds.
Scots pine	*Pinus silvestris*	91 species of invertebrate are known to use this species.
Spruce	*Picea spp.*	73 species of invertebrate are known to use this species.
Small leaved lime	*Tilia cordata*	
White willow	*Salix alba*	450 species of insects/mites and 166 species of lepidoptera.
Medium/small trees		
Alder	*Alnus glutinosa*	141 species of insects/mites and 71 species of lepidoptera. Seeds are good for birds such as siskins.
Apples	*Malus spp.*	118 species of insects/mites and 76 species of lepidoptera. Fruits are eagerly consumed by birds and mammals.
Field maple	*Acer campestre*	149 species of insects/mites and 24 species of lepidoptera. Fruits eaten by small mammals.
Holly	*Ilex aquifolium*	7 species of invertebrate are known to use this species. Berries good for birds and small mammals. Caterpillars of the holly blue butterfly feed on the leaves. Holly leaf miner provides winter food for birds
Pears	*Pyrus spp.*	Good for invertebrates. Fruits are eagerly consumed by birds and mammals.
Rowan	*Sorbus aucuparia*	58 species of insects/mites and 28 species of lepidoptera. The ripe berries attract birds such as redwings and field-fares.
Birch (silver and downy)	*Betula pendula,B pubescens*	229 species of invertebrates are known to use these species. Best tree for moth larvae. Catkins good food source for birds such as redpolls and tits.
Plants for hedges		
Blackthorn	*Prunus spinosa*	229 species of invertebrates are known to use this species. Good for nesting birds if grown as thicket or in hedge. Rich in insects. Fruit for birds. Black hairstreak butterfly lays its eggs mainly on blackthorn.
Buckthorn	*Rhamnus catharticus*	Berries for birds. Important food plant for brimstone butterfly larvae.
Cherry plum	*Prunus cerasifera*	Nectar and fruits for invertebrates. Fruits are eagerly consumed by birds and mammals.
Elder	*Sambucus nigra*	Berries for birds and nectar for insects.
Guelder rose	*Viburnum opulus*	Nectar for insects, particularly hoverflies. Fruits for birds and small mammals, especially liked by woodmouse. Note: leaves, bark and berries are all poisonous.
Hawthorn	*Crataegus monogyna*	149 species of invertebrate are known to use this species. Berries eaten by birds. Nectar. Berries good food source for thrushes, redwings and fieldfares. Good nesting if dense. Excellent for moth larvae.
Hazel	*Corylus avellana*	73 species of insects/mites and 68 species of lepidoptera. Nuts eaten by birds and mammals i.e. squirrels, mice and jays.
Privets	*Ligustrum spp.*	24 species of insects/mites, nectar for the butterflies. Berries eaten by birds.
Climbers/scramblers		
Brambles	*Rubus frutocosus agg.*	Nectar source for bees and butterflies. Berries for birds and mammals.
Dog Rose	*Rosa canina*	Provides nectar for bees and butterflies. Hips good for small birds and mammals.
Ivy	*Hedera helix*	Provides late nectar source and cover/hibernating sites for invertebrates. Food source for the Holly Blue butterfly larva.
Honeysuckle	*Lonicera periclymenum*	Excellent food source for invertebrates including the Speckled Wood butterfly. Berries eaten by birds.
Wild clematis/ Old man's beard	*Clematis vitalba*	Provides nectar for bees and butterflies.
Plants to site under trees or in shady areas		
Bluebell	*Hyacinthoides non-scripta*	
Bugle	*Ajuga reptans*	
Daffodils	*Narcissus pseudonarcissus*	
Foxglove	*Digitalis purpurea*	
Lily of the valley	*Convallaria majalis*	
Lords-and-ladies	*Arum maculatum*	
Primrose	*Primula vulgaris*	
Sweet violet	*Viola odoratum*	
Wood avens	*Geum urbanum*	

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Common Name	*Scientific name*	Wildlife value
Yellow archangel	*Lamastrum galeobdoton*	
Other shrubs for nectar, pollen or fruits		
Bodnant viburnum	*Viburnum x bodnantense*	Provides early nectar source for invertebrates and berries for birds. One of the most valuable winter flowering shrubs.
Californian lilac	*Ceanothus spp.*	Nectar for bees and butterflies.
Creeping cotoneaster	*Cotoneaster frigidus*	Berries good for birds and small mammals. Attracts waxwings and pheasants.
Firethorn	*Pyracantha spp.*	Good for nesting thrushes and a site or an open robin box. Nectar for bees, berries for birds.
Himalayan honeysuckle	*Leycesteria formosa*	Provides nectar for bees and butterflies.
Japanese quince	*Chaenomeles japonica*	Berries for birds and mammals.
Lilac	*Syringa vulgaris*	Nectar for bees and butterflies.
Mahonia	*Mahonia spp.*	Nectar for bees and butterflies.
Mock orange	*Philadelphus spp.*	Nectar for bees and butterflies.
Serviceberry	*Amelanchier canadensis*	Provides nectar for bees and butterflies.
Wildflowers		
Agrimony	*Agrimonia eupatoria*	Provides nectar for bees and butterflies.
Chicory	*Chicorium intybus*	Provides nectar for bees and butterflies.
Chives	*Allium schoenoprasum*	Provides nectar for bees and butterflies.
Common mallow	*Malva sylvestris*	Provides nectar for bees and butterflies.
Common poppy	*Papaver rhoeas*	Provides nectar for bees and butterflies.
Corncockle	*Agrostemma githago*	Very good nectar source for bees and butterflies.
Corn marigold	*Chrysanthemum segetum*	Very good nectar source for bees and butterflies.
Cowslip	*Primula veris*	Very good nectar source for bees and butterflies.
Dame's violet	*Hesperis matronalis*	Very good nectar source for bees and butterflies.
Dandelion	*Taraxacum officinale*	Very good nectar source for bees and butterflies.
Devil's bit scabious	*Succisa pratensis*	Very good nectar source for bees and butterflies.
Field scabious	*Knautia arvensis*	Very good nectar source for bees and butterflies.
Foxglove	*Digitalis purpurea*	Very good nectar source for bees and butterflies.
Germander speedwell	*Veronica chamaedrys*	Very good nectar source for bees and butterflies.
Goldenrod	*Solidago virgaurea*	27 species of lepidoptera.
Great mullein	*Verbascum thapsus*	Very good nectar source for bees and butterflies.
Greater knapweed	*Centaurea scabiosa*	Very good nectar source for bees and butterflies.
Harebell	*Campanula rotundifolia*	Very good nectar source for bees and butterflies.
Herb-robert	*Geranium verum*	Very good nectar source for bees and butterflies.
Lady's bedstraw	*Galium verum*	Very good nectar source for bees and butterflies.
Marjoram	*Origanum vulgare*	Good plant for butterflies and bees
Meadow cranesbill	*Geranium pratense*	Very good nectar source for bees and butterflies.
Oxeye daisy	*Leucanthemum vulgare*	Very good nectar source for bees and butterflies.
Primrose	*Primula vulgaris*	Very good nectar source for bees and butterflies.
Red campion	*Silene dioica*	Very good nectar source for bees and butterflies.
Spiked speedwell	*Veronica spicata*	Very good nectar source for bees and butterflies.
Tansy	*Tanacetum vulgare*	Very good nectar source for bees and butterflies.
Teasel	*Dipsacus fullonum*	A food source of the Brimstone butterfly. Attracts other insects for its nectar and birds for its seeds.
Toadflax	*Linaria vulgaris*	Very good nectar source for bees and butterflies.
White campion	*Silene alba*	Very good nectar source for bees and butterflies.
Wild thyme	*Thymus drucei*	Very good nectar source for bees and butterflies.
Yellow loosestrife	*Lysimachia vulgaris*	Provides nectar for bees and butterflies.

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Appendix Four: Bat records for a 1km radius from site grid reference, returned from South Yorkshire Bat Group

Recorder	Date	GridRef 6Fig	GridReference	Grid Square	Address line 1	Address line 2	Address line 3	Type	Structure type	Access points	Roost (Location)	Notes	Species	Number	Evidence
Eric Bennett	25/07/1999	SE3909	SE3909	SE3909		Cudworth	Barnsley					Bat found stuck to fly paper. Died later 92	Pipistrelle sp.	1	
Karen Larkin	13/07/2012	SE392100	SE392100	SE3910								Juvenile male Possible roost	Soprano pipistrelle	Unknown	
Karen Larkin	08/07/2015	SE391100	SE39146 10089	SE3910								Bat Care/Callout - BAT - JUVENILE - JUV	PIP	1	Bat Care/Callout
Karen Larkin	01/06/2015	SE391113	SE3919 1133	SE3911									Common pipistrelle	1	
SYBG/Martin Derbyshire	04/07/2011	SE397125	SE3971 25	SE3912				Roost in loft				Email to SYBG - Probable maternity roost. No bats recorded after July 10th - bats have changed roost site.	Vespertilionidae	57	
BCT/NE	23/04/2009	SE390127	SE3901 27	SE3913			South Yorkshire				Y		Brown long-eared bat	5	
Eric Bennett	29/06/2004	SE409092	SE4090 92	SE4009	Stacey Crescent	Grimethorpe	Barnsley				y	P.pip roost in boiler house. 35 bats emerged.	Vespertilionidae	Unknown	
Eric Bennett	29/06/2004	SE409092	SE4090 92	SE4009		Grimethorpe	Barnsley				y	Roost site in boiler house, no sign in buildings.emergence count.	Common pipistrelle	35	
Eric Bennett	29/06/2004	SE409092	SE4090 92	SE4009		Grimethorpe	Barnsley	Boiler House				bats seen to emerge.	Common pipistrelle	35	

Recorder	Date	GridRef6Fig	GridReference	GridSquare	Addressline1	Addressline2	Addressline3	Type	Structuretype	Accesspoints	Roost(Location)	Notes	Species	Number	Evidence
English Nature	28/06/2005	SE4080 93	SE4080 93	SE4009	Grimethorpe	Barnsley		Roost				Bats inside house. Council renovation works - unaware of roost. No survey done. Work stopped. Work completed when bats gone. Screw not nail fascias. Letter to BMC	Pipistrelle sp.	Unknown	
Eric Bennett	28/06/2005	SE4080 93	SE4080 93	SE4009		Grimethorpe	Barnsley	House		Gable apex soffit		Droppings on path and in loft. Report of bats in house 3 times over weekend.	Pipistrelle sp.	+	
Eric Bennett	29/06/2005	SE4080 93	SE4080 93	SE4009		Grimethorpe	Barnsley	House		Gable apex soffit		Fresh droppings reported by contractor after sweeping yesterday.	Pipistrelle sp.	+	
English Nature	18/07/2006	SE4091 08	SE4091 08	SE4010	Monument Drive	Brierley	Barnsley	Roost				Neighbour saw bats emerging from house last night.3 bats only. Probably not maternity roost.	Vespertilionidae	Unknown	
Eric Bennett	25/06/1999	SE4109	SE4109	SE4109		Grimethorpe	Barnsley					bats foun grounded during demolition of houses 87	Pipistrelle sp.	2	
Natural England	04/12/2007	SE4130 90	SE4130 90	SE4109	High Street	Grimethorpe	Barnsley					Dead & dried up bat found on floor of health centre. Gen info given. To dispose of bat. Info posted to TG	Vespertilionidae	Unknown	
P Middleton	08/07/2011	SE4160 0960	SE4160 0960	SE4109	pond			foraging					Common pipistrelle	3	

Recorder	Date	GridRef 6Fig	GridReference	Grid Square	Address line 1	Address line 2	Address line 3	Type	Structure type	Access points	Roost (Location)	Notes	Species	Number	Evidence
Karen Larkin	23/09/2012	SE4100093	SE410093	SE4109								adult male	Common pipistrelle	1	
P Middleton	12-Sep-15	SE4100096	SE4103096 4	SE4109	Grimethorpe Hall	Barnsley		building				roost	Common pipistrelle	2	
Eric Bennett		SE4101 00	SE410100	SE4110		Grimethorpe	Barnsley				y	Bats present for a couple of weeks during summer. Previously nect door.	Vespertilionidae	Unknown	
Observer name undisclosed	24/07/2004	SE4151 11	SE415111	SE4111								Species reported: Pipistrelle unsure,	Vespertilionidae	Unknown	
Undisclosed	24/07/2004	SE4151 11	SE415111	SE4111		South Yorkshire							Bat (species unknown)		Species reported: Pipistrelle species
English Nature	05/07/2005	SE4171 10	SE417110	SE4111	Brierley	Barnsley		Roost				Baby bat found in bedroom EB visit. Roost confirmed in flat roof of extension. 2 roost sites. Advice re timing of repairs to fascia + info for estate agents if property to be sold. Id uncertain	Vespertilionidae	Unknown	

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Recorder	Date	GridRef6Fig	GridReference	GridSquare	Addressline1	Addressline2	Addressline3	Type	Structuretype	Accesspoints	Roost (Location)	Notes	Species	Number	Evidence
Observer name undisclosed	16/07/2005	SE41511	SE415111	SE4111								Species reported: Pipistrelle unsure,	Vespertilionidae	3	
Undisclosed	16/07/2005	SE41511	SE415111	SE4111		South Yorkshire							Bat (species unknown)	3	Species reported: Pipistrelle species
Eric Bennett	13/08/2005	SE41710	SE417110	SE4111		Brierley	Barnsley	House		Fascia		Owner count	Pipistrelle sp.	17	
Eric Bennett	13/08/2005	SE41710	SE417110	SE4111		Brierley	Barnsley	House		Fascia		Owner count	Pipistrelle sp.	17	
Observer name undisclosed	22/07/2006	SE41511	SE415111	SE4111								Species reported: Pipistrelle unsure,	Vespertilionidae	3	
Undisclosed	22/07/2006	SE41511	SE415111	SE4111		South Yorkshire							Bat (species unknown)	3	Species reported: Pipistrelle species
Observer name undisclosed	21/07/2007	SE41511	SE415111	SE4111								Species reported: Pipistrelle unsure,	Vespertilionidae	4	

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Recorder	Date	GridRef6Fig	GridReference	GridSquare	Addressline1	Addressline2	Addressline3	Type	Structuretype	Accesspoints	Roost (Location)	Notes	Species	Number	Evidence
Undisclosed	21/07/2007	SE 41 51 11	SE4 151 11	SE 41 11		South Yorkshire							Bat (species unknown)	4	Species reported: Pipistrelle species
Observer name undisclosed	26/07/2008	SE 41 51 11	SE4 151 11	SE 41 11								Species reported: Pipistrelle unsure,	Vespertilionidae	4	
Undisclosed	26/07/2008	SE 41 51 11	SE4 151 11	SE 41 11		South Yorkshire							Bat (species unknown)	4	Species reported: Pipistrelle species
Karen Larkin	27/06/2015	SE 41 51 12	SE 415 56 112 88	SE 41 11								Bat Care/Callout - BAT - DEHYDRATED - RELEASED	LEISLERS	1	Bat Care/Callout

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Appendix Five: List of species including protected species records relevant to the survey site from Barnsley Biological Records Centre

Location Name	Date	TextDate	Group	Scientific Name	Common Name	Easting	Northing	Comments
	20/12/2010 00:00	20/12/2010	terrestrial mammal	Vulpes vulpes	Fox	435000.00	415000.00	
Frickley Dyke	06/02/2017 00:00	06/02/2017	terrestrial mammal	Meles meles	Badger	435000.00	405000.00	droppings - not in latrine
Ommitted	06/02/2017 00:00	06/02/2017	terrestrial mammal	Meles meles	Badger	-	-	droppings - not in latrine
Omitted	06/02/2017 00:00	06/02/2017	terrestrial mammal	Meles meles	Badger	-	-	fresh droppings
Frickley Dyke	06/02/2017 00:00	06/02/2017	terrestrial mammal	Micromys minutus	Harvest Mouse	435000.00	405000.00	nest in Phalaris
Frickley Dyke	06/02/2017 00:00	06/02/2017	terrestrial mammal	Micromys minutus	Harvest Mouse	435000.00	405000.00	nest in Phalaris
edge of Frickley railway cutting	06/02/2017 00:00	06/02/2017	terrestrial mammal	Microtus agrestis	Field Vole	435000.00	405000.00	runs in rough grassland
edge of Frickley railway cutting	06/02/2017 00:00	06/02/2017	terrestrial mammal	Microtus agrestis	Field Vole	435000.00	405000.00	runs in rough grassland
Trans Pennine Trail Link	21/06/2016 00:00	21/06/2016	terrestrial mammal	Oryctolagus cuniculus	Rabbit	445000.00	405000.00	
edge of Frickley railway cutting	06/02/2017 00:00	06/02/2017	terrestrial mammal	Oryctolagus cuniculus	Rabbit	435000.00	405000.00	
small plantation	06/02/2017 00:00	06/02/2017	terrestrial mammal	Oryctolagus cuniculus	Rabbit	435000.00	405000.00	small warren
edge of Frickley railway cutting	06/02/2017 00:00	06/02/2017	terrestrial mammal	Oryctolagus cuniculus	Rabbit	435000.00	405000.00	
edge of Frickley railway cutting	06/02/2017 00:00	06/02/2017	terrestrial mammal	Talpa europaea	Mole	435000.00	405000.00	hills
edge of Frickley railway cutting	06/02/2017 00:00	06/02/2017	terrestrial mammal	Talpa europaea	Mole	435000.00	405000.00	hills
Omitted	06/02/2017 00:00	06/02/2017	terrestrial mammal	Meles meles	Badger	-	-	fresh droppings
small plantation	06/02/2017 00:00	06/02/2017	terrestrial mammal	Oryctolagus cuniculus	Rabbit	435000.00	405000.00	small warren

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Appendix Six: Phase 1 map of the survey site



Key		Target Notes	
Hardstanding		Target Note 1: Lifted pan tiles and pipistrelle droppings found	
Buildings		Target Note 2: Gaps in tiles, gable ends and roof	
Amenity grassland		Target Note 3 Feeding remains and dropping found. Gaps in roof and in doors	
Ornamental plantings		Target Note 4 Feeding remains. Crevices in stonework and gable ends.	
Pond			
Tree line / scattered trees			
Introduced Shrub			

Appendix Seven Survey site species list

Taxon	**Vernacular**
Flowering plant	
Malus sp.	Apple
Fraxinus excelsior	Ash
Laurus nobilis	Bay Laurel
Prunus padus	Bird cherry
Rumex obtusifolius	Broad leaved dock
Buddleja sp.	Buddleia
Borago officinalis	Borage
Rubus sp.	Bramble
Pinus tabuliformis	Chinese red pine
Galium aparine	Cleavers
Clematis sp.	Clematis
Tussilago farfara	Colts foot
Symphytum officinale	Comfrey
Cytisus scoparius	Common Broom
Urtica dioica	Common nettle
Taraxacum officinale	Common dandelion
Agrostis capillaris	Common bent
Pinophyta sp.	Conifer
Ranunculus repens	Creeping buttercup
Cornus Sp	Dog wood
Sambucus nigra	Elder
Polypodiopsida sp.	Fern
Tanacetum parthenium	Feverfew
Acer campestre	Field maple
Digitalis sp.	Foxglove
Senecio vulgaris	Groundsel
Viburnum opulus	Guelder- Rose
Equisetum arvense	Horsetail
Hydrangea Sp	Hydrangea
Centaurea nigra	Common knapweed
Ilex aquifolium	Holly
Hedera sp.	Ivy
Laurus nobilis	Laurel
Arctium minus	Lesser Burdock
Syringa vulgaris	Lilac
Leucanthemum vulgare	Oxeye daisy
Quercus sp	Oak
Cortaderia pumila	Pampas grass
Chamaerops sp	Palm
Pyrus sp.	Pear
Lolium perenne	Perennial ryegrass
Sonchus asper	Prickly sow thistle

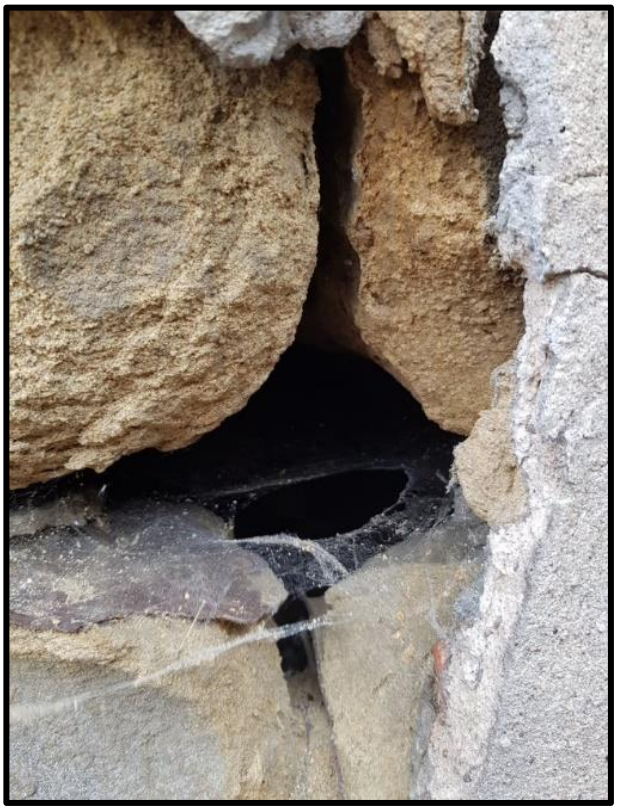
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Taxon	**Vernacular**
Prunus sp.	Cherry
Lolium perenne	Perennial rye grass
Ligustrum sp	Privet
Silene dioica	Red campion
Plantago lanceolata	Ribwort plantain
Ribes sp	Ribes
Rhododendron sp.	Rhododendron
Sorbus aucuparia	Rowan
Hibiscus Sp	Rose of Sharon
Verbascum sp	Mullein
Acer pseudoplantus	Sycamore
Viburnum spp.	Viburnum
Salix sp.	Willow
Weigela spp.	Weigela
Achillea millefolium	Yarrow

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Appendix Eight: Crumbling rendering exposing the stonework of the barn and creating fissures in the building





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Appendix Nine: Wooden doors and window frames, and plants covering part of the exterior of the extended barn







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Appendix Ten: Interior of the extended barn with roof gaps and water damage









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Appendix Eleven: Examples of bat field signs found on the site





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Appendix Twelve: Northern elevation of the cowshed



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Appendix Thirteen: Absent roof tiles on the northern elevation of the cowshed



Appendix Fourteen: Missing mortar under roof ridge on western elevation of the cow shed.



Appendix Fifteen: Garden pond tested for presence of great crested newts



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Appendix Sixteen: Plants covering the exterior of the lone standing outhouse



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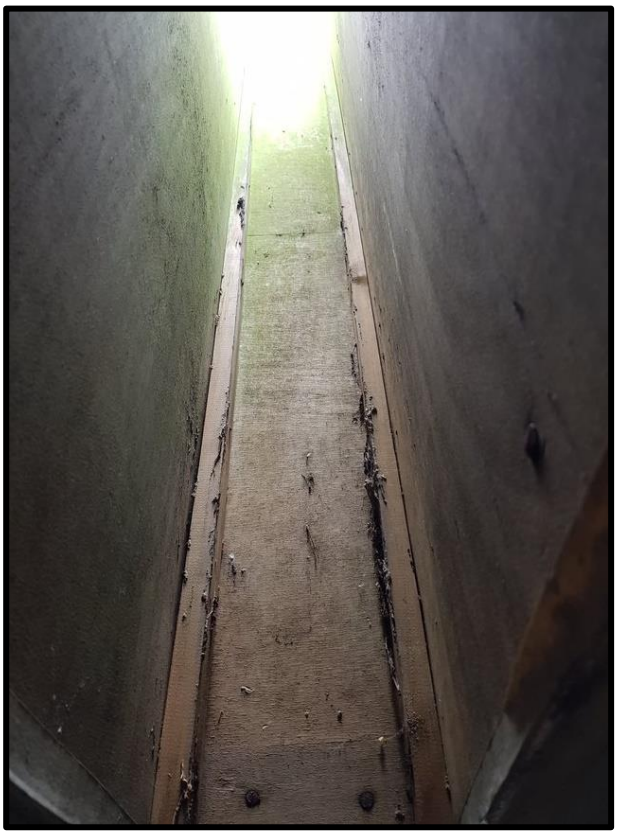
Appendix Seventeen: Interior of the lone standing outhouse





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Appendix Eighteen: Gaps in the roof of the lone standing outhouse with field signs of bats (droppings)





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Appendix Nineteen: Intact pan tiled roof and gable ends of the farmhouse





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Appendix Twenty: Crevices in the gable ends and stonework of the interior of the larger farmhouse outbuilding







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Appendix Twenty-one: Exterior of the larger farmhouse outbuilding



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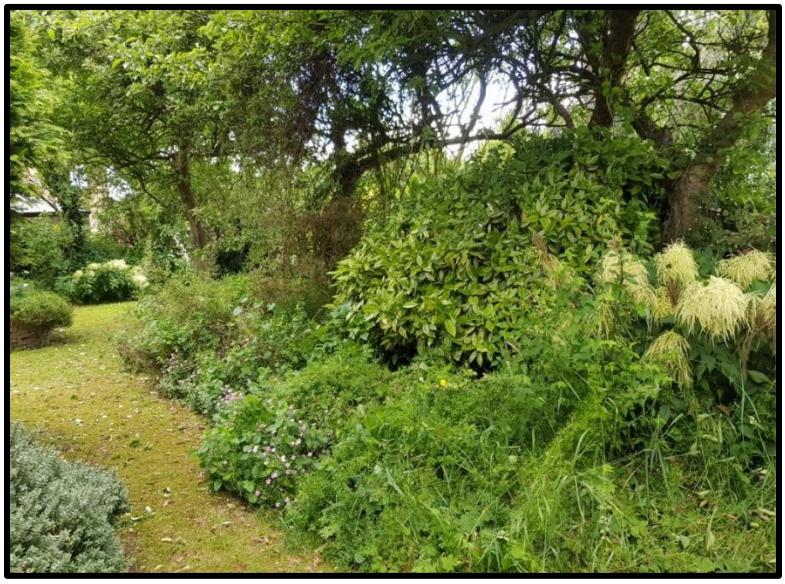
Appendix Twenty-two: The smaller farmhouse outbuilding





Appendix Twenty-three: Examples of ornamental plantings found on site





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References

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